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Pearl Millet Improvement Program Pathology

**Report of
Work on Ergot and Smut
June 1979 to May 1980**

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1. PEARL MILLET PATHOLOGY ERGOT & SMUT TEAM

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2. ABSTRACT

This report encompasses the results of the following four research projects on pearl millet ergot and smut during the 1979-80 period.

1. M-Path-N2.1 (78): Studies on the biology and epidemiology of ergot (81).
2. M-Path-N2.2 (78): Identification and utilization of stable resistance to ergot (80).
3. M-Path-N2.3 (78): Evaluation of alternative ergot control measures (80).
- and 4. M-Path-N3.2 (78): Identification and utilization of stable smut resistance (80).

2.1 ERGOT

A considerable amount of work was done on the biology and epidemiology of ergot which led to the refinement of the ergot screening technique and to the possibility of ergot control through pollen management. Here we report our studies on the sexual and asexual stages of the ergot pathogen, *Claviceps fusiformis* Loveless, and their relative roles in the disease epidemiology.

The ergot resistance screening activities were continued and large number of materials were screened during the rainy and the post-rainy seasons at the ICRISAT Center. Considerable progress was made in developing ergot resistant lines. High levels of ergot resistance was detected in about 40 F₅ lines, many of which are also resistant to downy mildew and smut. These lines are being utilized in the breeding programs to develop ergot resistant hybrids and varieties.

The International Pearl Millet Ergot Nursery (IPMEN) was tested at 11 locations in India and West Africa, and the results have been reported separately (see the 1979 IPMEN report PMPE 8001).

The evaluation of the possibilities for control of ergot through pollen management has given encouraging results. This control measure seems to be practical and is probably economical at the farmers' level.

2.2 SMUT

The smut resistance screening activities continued at the ICRISAT-HAU farm at Hissar during the 1979 rainy season. Although the weather was not conducive for high natural smut incidence, successful screening was facilitated by artificial inoculation. Many lines with high levels of smut resistance were identified.

The 1979 International Pearl Millet Smut Nursery (IPMSN) was tested at four locations in West Africa and India and lines with stable smut resistance have been identified (see the 1979 IPMSN report PMPS: 8001). These lines are being utilized in the breeding program to develop smut resistant hybrids and varieties.

The results of each project are reported separately in the following pages.

ERGOT

3 Project M-Path-N2.1 Studies on the biology and epidemiology of ergot3.1 Summary

- i) - ergot sclerotia varied in size (6.05 mm x 1.75 mm to 3.55 mm x 1.25 mm), surface texture (smooth to rough), compactness (compact to brittle with cavities), shininess (bright to dull) and in color (brown to dark brown).
- ii) - sclerotial germination was not related to sclerotial size nor to manner of placement in the soil. However, older sclerotia (more than 1 yr old) germinated earlier (within 45 days) than freshly collected sclerotia (less than 6 months old).
- iii) - perithecia, asci, and ascospores from germinated sclerotia were examined carefully and were photographed.
- iv) - ascospores from the germinated sclerotia were trapped on sticky slides.
- v) - in a field experiment in the 1978 rainy season the positive role of ergot sclerotia in primary ergot infection was demonstrated. The hybrid ICH-105 planted with sclerotia developed ergot infection earlier than the ICH-105 planted without sclerotia in two isolation plots. Many sclerotia germinated at the time when flowering commenced in the hybrid. Supportive results were obtained in a pot experiment.
- vi) - the ergot pathogen, *Claviceps fusiformis* Loveless, was successfully cultured on Kirchoff's, ammonium citrate, and potato-dextrose-agar (PDA) media, both on semi-solid and broth media. Scanty mycelial growth with numerous macro- and few micro-conidia were observed on these media at 25 C. Conidia produced on Kirchoff's medium were longer than those produced on ammonium citrate or PDA.

- vii) - honeydew conidia germinated faster than sclerotial-borne conidia - about 30% honeydew conidia germinated in 24 hr compared with 3% germination in sclerotial-borne conidia after 120 hr of incubation at 25 C in sterile distilled water. Germination of sclerotial-borne conidia was influenced by concentrations of sucrose solution - 5% sucrose solution produced 19% germination compared with 4% germination in 1% sucrose solution at 25 C.
- viii) - inoculation with fresh honeydew conidial suspension produced more ergot (59% infection index) than sclerotial-borne conidia in 5% sucrose solution (22% infection index).
- ix) - the significant interaction between ergot conidia and pearl millet pollen was further confirmed which led to the improvement of screening technique and possibility of ergot control through pollen management (Thakur & Williams, 1980. *Phytopathology* 70:80-84)

3.2 Introduction

This project was initiated in 1976 and the progress was reviewed in 1978. Since then a great deal of work has been done. We concentrated our efforts in understanding the sexual and asexual life cycles of the pathogen and the role of sclerotia and conidia in disease epidemiology.

3.3 Sclerotial germination

Claviceps fusiformis sclerotia were collected from infected earheads of several cultivars and were examined for variability in size (Fig. 1), surface texture, compactness, and color. The sizes varied from 3.55 mm x 1.25 mm to 6.05 mm x 1.75 mm, surface texture varied from smooth to rough, compactness varied from very hard, compact to brittle, non-compact with cavities, and color varied from light-brown to dark-brown. Transverse sections of sclerotia showed a dense pseudoparenchymatous tissue, hyaline in the interior and black on the periphery, with irregular cavities in the center (Fig. 2).

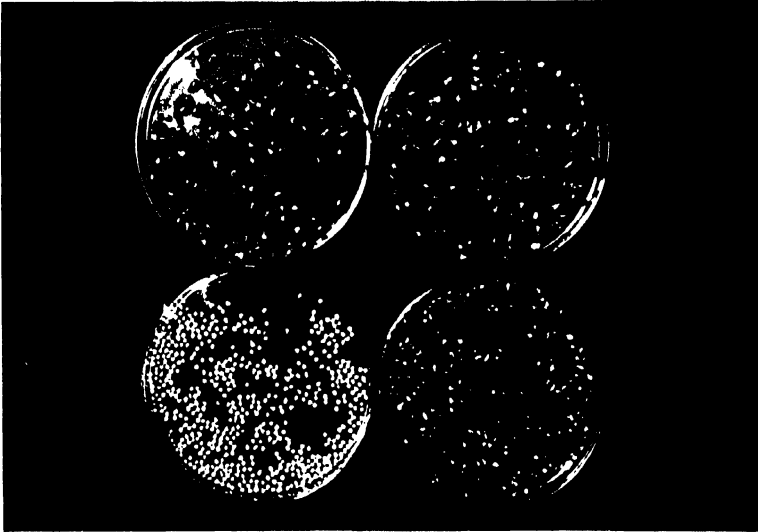


Fig. 1. Variable sizes of sclerotia of *Claviceps fusiformis* Lov. compared to pearl millet seed size

T.S. of SCLEROTIUM

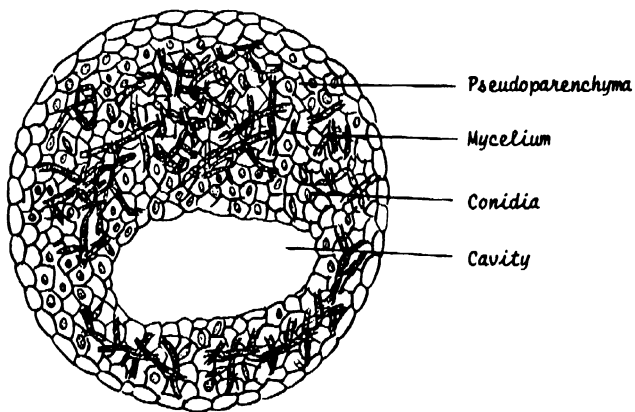


Fig. 2. Structure of sclerotium of *Claviceps fusiformis* Lov.

Sclerotia of different ages, shapes, sizes, colors and compactness were compared for germination. Sclerotia were placed in autoclaved sand in plastic petriplates, either vertically or horizontally and completely buried or partially buried. The plates were incubated at 25 C and the sand was kept moist by frequent watering with sterile distilled water. Observations for sclerotial germination were made at 30, 60, 120 and 165 days after incubation. A small proportion of sclerotia germinated 30 days after seeding. Germination was erratic. Maximum germination (52%) was recorded 165 days after incubation of the 1-year-old, large sclerotia, completely buried horizontally. But this was not confirmed in subsequent tests, based on which the conclusion was made that the methods of sclerotial placement (vertically or horizontally), degree of burial (partial or complete), compactness and colours had no effect on germination.

Sclerotia germinated by producing 3 to 8 fleshy, purplish stalks (6 to 25 mm long). Each stalk terminates in a globular head, called stroma which is light brown (Fig. 3). The stalks first appear as small swellings on the surface of the sclerotium and as the outer dark-colored layer gradually ruptures, the light colored heads of stroma protrude. The development of each stroma is due to the outgrowth of a tuft of hyphae from the inner tissue of the sclerotium. When a mature stroma is crushed on a glass slide with the help of coverslip in a drop of lactophenol and examined microscopically, flask-shaped perithecial structures are seen with asci emerging through an ostiole. The asci are long, ostiolate, with a hyaline narrow end. Each ascus contains long thread-like ascospores (Fig. 4).

Many ascospores were collected on a strip of cellophane tape exposed to the mature stromata.

3.4 Role of ascospores in ergot epidemiology

Results of preliminary experiments conducted in isolation plots and in pots indicated the positive role of ascospores in the disease

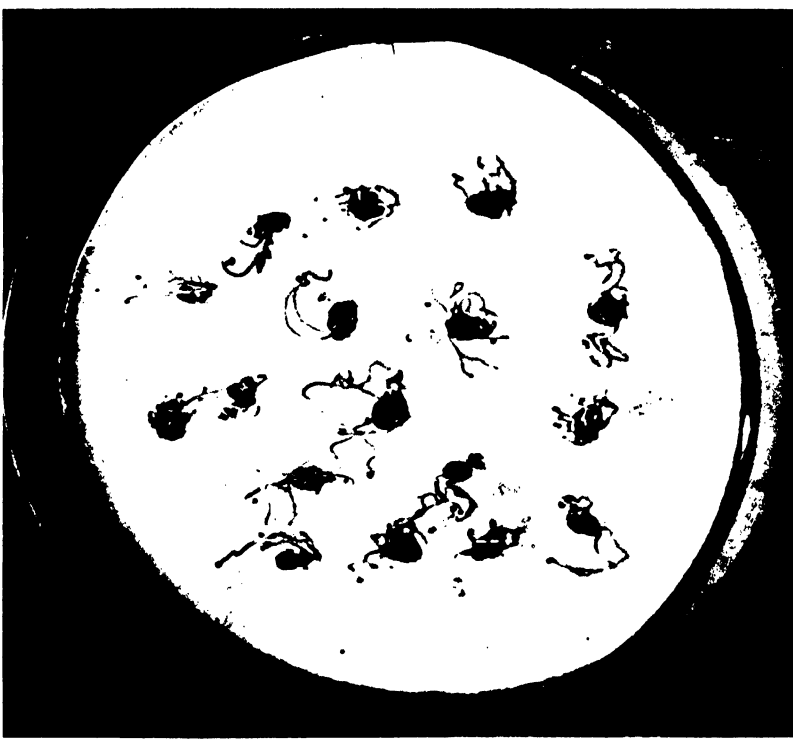
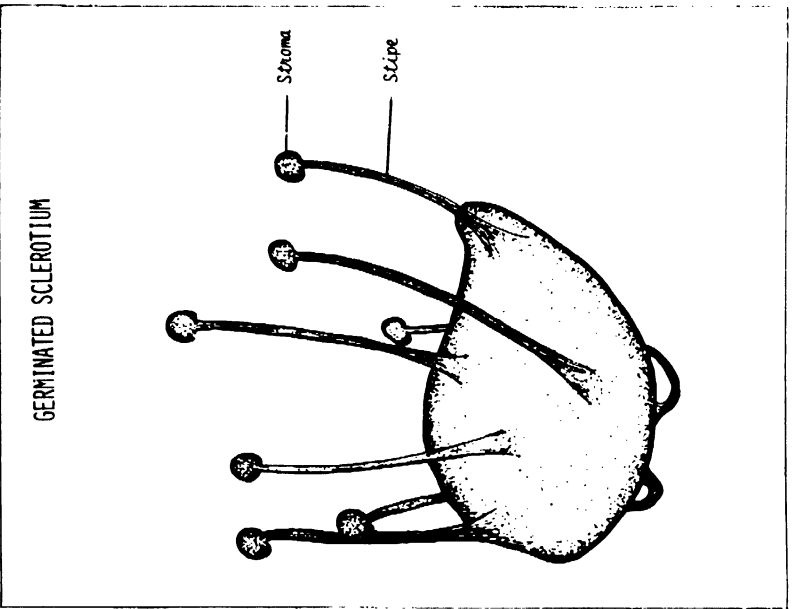


Fig. 3. Structure and germination of sclerotia of *Claviceps fusiformis* Lov.

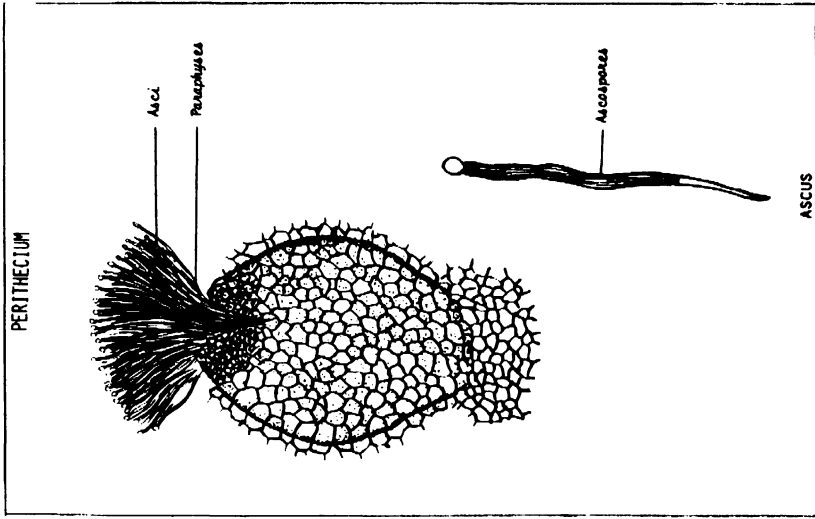


Fig. 4. Structure and production of perithecia, asci and ascospores of *Claviceps fusiformis* Lov.

epidemiology. Pearl millet hybrid ICH-105 was planted with and without ergot sclerotia in isolation plots (14 rows x 10m). About 25 sclerotia in perforated plastic cups were buried at 1m intervals in the alternate rows of ICH-105. The other isolation plot planted with ICH-105 was without sclerotia. Many sclerotia germinated when flowering started in ICH-105. Four days later about 2% inflorescences were infected in the sclerotial plot compared with no infection in the ICH-105 plot without sclerotia.

Coincidence of sclerotial germination with flowering time in ICH-105, 5141A and BJ-104 was also observed in a pot experiment.

Severe ergot developed when protogynous inflorescences were exposed to the germinated sclerotia in pot soil under controlled conditions. This needs further confirmation.

3.5 Isolation of the pathogen (*Claviceps fusiformis*)

Culturing the pathogen on artificial media and maintaining its purity is an important routine work in a pathological laboratory. A pathogen keeps on evolving its new types to suit the changes in the host varieties and environment for its better survival. To know the changes in the pathogen and its distribution in the areas where the host crop is grown it is important to maintain it in its pure form.

During the year, attempts were made to isolate the fungus on various synthetic and non-synthetic media, to select the one most suitable for the growth of the fungus, to test the pathogenicity of the cultures, and to maintain pure cultures for further studies.

Isolation of the fungus from the honeydew was tried on the following synthetic and non-synthetic media: a) Kirchoff's medium (KM):- sucrose (100 g), KH_2PO_4 (1 g), asparagin (1 g), $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ (0.25 g), agar (15 g) and water (1 litre); b) Ammonium citrate medium (ACM):- $\text{CA}(\text{NO}_3) \cdot 4\text{H}_2\text{O}$ (1.44 g), $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ (1.51 g), KCl (0.125 g), di-basic ammonium citrate (20 g), KH_2PO_4 monobasic (0.1 g), sucrose (200 g), and water (1 litre);

c) Potato-dextrose agar (PDA):- Potato (200 g), dextrose (15 g), agar (15 g), and water (1 litre); d) Pearl Millet floret extract-sucrose-agar medium (PSA):- Green florets (200 g), sucrose (15 g), agar (15 g) and water (1 litre); and e) Nutrient agar (NA):- Peptone (10 g), beef extract (5 g), agar (15 g), and water (1 litre).

Scanty mycelial growth with numerous macro-conidia and comparatively few micro-conidia were observed on KM, ACM, and PDA but no growth was observed on PSA and NA.

Mycelial fragments from the above cultures were further transferred to KM, ACM, and PD broth in 100 ml flasks and were incubated at 25 C. Mycelial development was quite rapid in all the broths and thick mycelial mats covering the entire broth surface area were observed 1 month after incubation.

Isolation of the fungus was also attempted from sclerotia by sclerotial plating. Sclerotia were washed thoroughly under running tap water, dipped in 95% alcohol for 2 min, surface sterilized with commercial chlorox (5.25%) for 10 min, cut into two or three pieces and were seeded on PDA plates. White mycelial growth from peripheral surface of the sclerotial pieces was observed 5 days after incubation at 25 C. These mycelial fragments were transferred to KM, ACM, and PDA slants and incubated at 25 C. The cultures of the fungus are maintained at 10 C in a refrigerator.

3.6 Pathogenicity tests

The fungal cultures from KM, ACM, and PD broth were diluted with sterilized distilled water to the concentration range of 1×10^3 to 1×10^4 conidia/ml). Several heads of a male-sterile line, 111-A, were dip-inoculated at protogyny and bagged with parchment paper bags. Slimy turbid droplets of honeydew were observed on florets 4 days after inoculation. Cultures from all the three media were infective but the KM-broth

culture produced maximum infection (53%) compared with 30% infection with PDA culture and 23% infection from ACM culture. The fungus was re-isolated from these infected heads on KM, ACM, and PDA slants and incubated at 25 C. Mycelial growth, and measurements of both macro- and micro-conidia were similar to the original culture.

3.7 In-vitro germination of macro- and micro-conidia

Both macro- and micro-conidia from honeydew were examined for germination in sterile distilled water in cavity slides at 25 C. Macroconidia germinated by producing a germ-tube from either end. The germ-tubes produced septa at the tips before producing on them macro- or micro-conidia. Micro-conidia were produced in chains from the tips of the germ-tubes (Fig. 5).

Germination (viability) of honeydew conidia and sclerotial conidia (mostly micro-conidia) was compared in different concentrations of sucrose solution in cavity slides at 25 C. The honeydew conidia were more viable (30.3% germination 24 hr after incubation) than the sclerotial conidia (no germination even 96 hr after incubation). At 120 hr after incubation the maximum germination of the sclerotial conidia was 19.2% in 5% sucrose solution compared to 60.4% germination for the honeydew conidia.

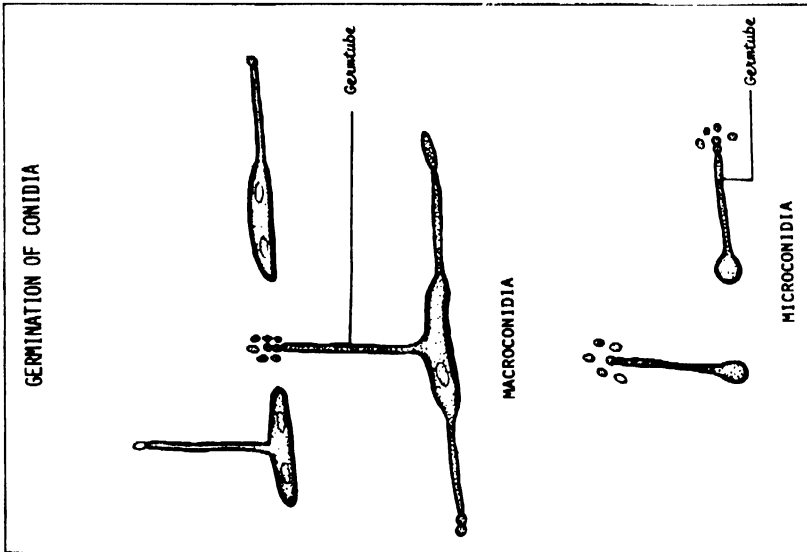


Fig. 5. Structure and germination of macro- and microconidia of *Claviceps fusiformis* Lov.

4 Project M.Path-N2.2: Identification, development and utilization of stable resistance to ergot

4. Summary

4.1.1 Initial Screen:-

- i) - about 1,000 lines, including African germplasm lines selected from Upper Volta, were screened. About 64% of the lines developed more than 50% ergot and only about 3% of the lines had no more than 20% ergot. We selected 180 ergot less susceptible (<2% severity) single heads for further testing.
- ii) - of 509 entries from 16 ICRISAT Pearl Millet Breeding trials about 85% of the entries had more than 50% ergot and only about 3% of the entries had ergot between 11 and 30%.
- iii) - of the 149 All India Coordinated Millet Improvement Project (AICMIP) trial entries, no entry had less than 40% ergot, and 97% of the entries had more than 50% ergot.

4.1.2 Advanced Screen:-

- i) - a total of 751 ergot-free single heads selected from the 1978 Initial and Advanced Screens were evaluated as head-to-row progenies. About 16% of the lines developed a mean ergot severity of no more than 20%. About 100 ergot-free single heads were selected for further testing.
- ii) - twenty ergot-free heads, with overlapping of anthesis and pro-togyny selected during the 1979 rainy season, were screened during the 1979-80 post rainy season as head-to-row progenies. No line was ergot-free, but 11 of the 20 lines had ergot in the range of 5 to 9%, and the remaining entries had ergot between 13 and 31% (compared to 76% ergot in the susceptible check BJ-104).

- iii) - selfed and sibbed progenies of 19 IPMEN entries were tested for ergot reactions, to determine which the superior method of seed increase without affecting resistance levels of the entries. Ergot reactions were variable and no conclusion could be drawn.
- iv) - of 23 entries tested in the 1979 Pearl Millet Ergot Nursery (PMEN), only 2 entries developed very low ergot (3% and 4%). The remaining 21 entries had ergot in the range of 12 to 39%. We selected 40 ergot free single heads for further evaluation.

4.1.3 Development of Ergot Resistance

- i) - more than 2600 lines, consisting of F₅, F₄, F₃, F₂ and F₁ lines from crosses involving ergot low susceptible genotypes and between ergot low susceptible and agronomic elite lines, were screened and selections made.
- ii) - at the F₅ stage 40 lines with high levels of ergot resistance (<10% severity) were identified. Many of these lines were resistant to downy mildew (DM) and smut in the DM-nursery at ICRI SAT Center and smut nursery at Hissar. Twenty of these lines were included in the 1980 IPMEN for multilocational testing.
- iii) - five of the most ergot resistant lines were intermated to further increase the levels of resistance in the progenies.

4.1.4 International Pearl Millet Disease Resistance Testing Program (IPMDRTP) and Multiple Disease Resistance:-

- i) - the IPMEN with 27 entries was tested at Kamboinse in Upper Volta and at 10 locations in India. Promising entries at and across locations were identified (see the 1979 IPMEN Report PMPE 3001). These entries were also screened for downy mildew and smut reactions in the DM-nursery at the Center and in the smut nursery at Hissar, and entries with resistance to ergot, downy mildew and smut were identified.

- ii) - the 45 entries in the 1979 International Pearl Millet Downy Mildew Nursery (IPMDMN) were screened for ergot and smut reactions in the ergot nursery at the Center and in the smut nursery at Hissar, and lines with multiple disease resistance were identified.
- iii) - the 1979 IPMSN with 37 entries was screened for ergot and downy mildew reactions, and several lines with high resistance to smut, ergot and downy mildew were identified.
- iv) - 13 lines from IPMDMN, IPMEN and IPMSN had high levels of resistance to downy mildew, ergot, and smut.

4.1.5 Utilization of identified/developed resistance sources:-

- i) - 30 ergot resistant F_5 lines were test-crossed to 3 ms lines to test the potential of using them as pollinators in the hybrid program.
- ii) - 12 of the ergot resistant F_5 lines were used to form 2 synthetics.
- iii) - Crosses were made between ergot resistant F_5 lines and ergot susceptible inbreds to study the genetics of ergot resistance.
- iv) - ergot resistant F_5 seed have been supplied to national program scientists on request.

4.2 Introduction

This project was initiated in 1976 and the progress was reviewed in 1978. The main objectives of this project are to identify and develop ergot resistance sources and utilize them in breeding programs to develop ergot resistant hybrids and varieties.

Screening of germplasm lines and breeding materials is the basic activity in identifying sources of resistance. As reported in the earlier years' reports our screening activities have three phases - initial, advanced, and multilocational. The detailed screening procedures and scoring methods were reported earlier.

4.3 Initial Screen

4.3.1 Germplasm lines:-

- i) - of 284 germplasm lines from Cameroon, Mali, Senegal, and Niger, no line was ergot free, 5 and 8 lines had ergot in the range of 11 to 20%, and 21 to 30%, respectively, and the remaining 271 (95% of the lines) had more than 40% ergot (Table 1). The detailed ergot reactions of individual entries are presented in Appendix-I. Twenty-six ergot-free single heads were selected for further testing.
- ii) - of 84 germplasm selections by Clement in Upper Volta, no line was ergot-free, 2 and 5 lines developed ergot in the range of 11 to 20% and 21-30%, respectively, and the remaining 77 lines (92% of the lines) had more than 40% ergot (Table 2). Ergot reactions of individual entries are presented in Appendix-II.

4.3.2 Breeding materials

- i) - Selections from Upper Volta:- Of 651 selections from the breeding lines at Upper Volta, no line was ergot-free, 6 and 13 lines had ergot in the range of 1-10% and 11-20%, respectively. The majority of lines (more than 60%) developed more than 50% ergot (Table 3). Ergot reactions of individual entries are presented in Appendix-III. We selected 152 ergot-free single heads for further testing.
- ii) - ICRISAT breeding lines:- A total of 509 lines including hybrids, populations, inbreds, and male steriles from 16 trials were screened. No line was ergot-free, only 3 lines (0.6% of the lines) and 12 lines (2.3% of the lines) had ergot in the range of 11-20% and 21-30%, respectively, and about 85% of the lines had more than 50% ergot. The performance of entries in each trial are summarised in Table 4, and the individual entry reactions are presented in Appendix-IV. Almost all hybrids, ms-lines, and their pollinators were highly susceptible (>90% ergot).

iii) - AICMIP trials:- Five trials with 149 entries including hybrids, populations, ms-lines, and their pollinators were screened. The performance of the entries in each trial is summarised in Table 5, and ergot reactions of individual entries in each trial are presented in Appendix-V. A detailed report was prepared and circulated in the AICMIP workshop at Hissar, April 1980. Of 52 hybrids only 3 had ergot in the range of 41 to 50%, and the remaining 49 hybrids developed ergot in the range of 55 to 97%.

Among the populations only 2 of the 46 populations had less than 50% ergot (MCC 75-46% and MCP 76-49%), and the remaining 44 populations had ergot in the range of 51 to 92%. The two promising populations PSB-C and WCC-75 developed 63 and 51% ergot, respectively.

Of the 49 ms and pollinators, ms-lines 5509-A, 3972-A, and 6104-A, which appeared promising with only 2, 13 and 18% ergot, respectively, during the 1979 rainyseason, all developed more than 50% ergot when retested during the 1979-80 post rainy season. The two most commonly used ms-lines 5054-A and 5141-A developed 82 and 91% ergot respectively.

A total of 1677 lines including germplasm lines and breeding materials were screened in the initial screen. No line was ergot-free, only 29 lines (1.7% of lines) had ergot in the range of 1 to 20% and the majority of lines (74% of lines) developed more than 50% ergot. The performance of lines is summarised in Table 6.

4.4 Advanced screen

Ergot-free single head selections from the Initial Screens are rescreened as head-to-row progenies in the Advanced Screen.

About 800 selections were screened in seven trials, which are reported below.

- 4.4.1 Advanced Screen-A:- Of 256 selections screened, no selection was ergot-free, 4 and 13 selections developed ergot in the range of 1 to 10 and 11 to 20%, respectively, and 160 selections (about 62% of the entries) had more than 50% ergot (Table 7). The detailed ergot reactions are provided in Appendix-VI.
- 4.4.2 Advanced Screen-B:- Of 98 selections in this group, 1 selection had less than 1% ergot, 15 selections had ergot in the range of 1 to 20% and 48 selections (49% of the selections) had more than 50% ergot (Table 8). The detailed ergot reactions are provided in Appendix-VII.
- 4.4.3 Advanced Screen-C:- Nine of the 37 selections had ergot in the range of 1 to 20%, 24 selections developed ergot between 21 and 50% and only 4 selections had more than 50% ergot (Table 9, Appendix-VIII).
- 4.4.4 Advanced Screen-D:- Twenty-seven of the 204 selections developed ergot in the range of 1 to 20% and 87 selections (43% of the selections) had more than 50% ergot (Table 10, Appendix-IX).
- 4.4.5 Advanced Screen-E:- Single head selections made for overlapping of anthesis and protogyny in the downy mildew nursery during the 1978-79 post-rainy season, were rescreened as head-to-row progenies during the 1979 rainy season. Of 113 selections, 1 selection had less than 1% ergot, 10 selections had between 1 and 10% ergot and 15 selections had between 11 and 20% ergot (Table 11). We selected 92 ergot-free single heads from 32 selections for further testing. The detailed reactions are presented in Appendix-X. These 92 single head selections were grown during the post-rainy season 1979-80 as head to row progeny. Mean ergot severity, severity range and downy mildew reactions of the 20 ergot-least-susceptible entries are provided in Table 12. Eleven of the 20 entries had ergot in the range of 5 to 9% and were downy mildew free. Selections from these lines will be tested during the 1980 rainy season.

4.4.6 PMEN:- Twenty three entries selected from the 1978 Advanced Screen were retested in a replicated trial during the 1979 rainy season. SC-2(M)5-4-E-1-T-2 and 700703-1-E-1 had mean ergot severities of 3 and 4% respectively, 3 entries developed ergot between 12 and 13% and the remaining 13 entries had ergot in the range of 22 to 39% (Table 13). We have selected 41 ergot-free heads for further testing.

4.4.7 Selfed and sibbed entries:- Seed of 19 entries was increased by selfing and sibbing during the post-rainy season 1978-79, and were tested for their ergot reactions during the 1979 rainy season. This was done to determine whether the seed of ergot resistant lines could be increased by selfing or sibbing, without affecting the ergot susceptibility levels. Data presented in Table 14 indicate no definite relationship between selfing, sibbing and ergot reactions. It may be useful to maintain the seed of ergot resistant lines by selfing so that resistant inbreds could be produced which will be easy for utilizing in the breeding program.

A total of 751 single head selections from the 1978 initial screens were screened as head-to-row progenies in the 1979 advanced screen. About 7% of selections (51 entries) had ergot in the range of 0 to 10% and many ergot-free single heads were selected from these entries for further evaluation. The performance of entries is summarised in Table 15.

4.5 Development of Ergot Resistance:-

By the end of the 1976 rainy season more than 4,000 germplasm lines had been screened with no source of high level of ergot resistance detected. In an attempt to assemble scattered resistance genes, twenty pearl millet lines, identified as apparently less susceptible in the 1975 and 1976 screenings, were intermated during the 1976-77 post-rainy season to give 269 F_1 progenies. F_2 populations were screened during the 1978 rainy season, and ergot-free single-head selections from them were screened as F_3 lines during the 1978-79 post rainy season. Ergot-free single head selections (F_4 s) from the F_3 lines were similarly screened during the 1979-rainy season, and F_5 lines were screened during the 1979-80 post rainy season (Table 16).

The results of these tests indicate that considerable progress has been made in developing lines that have a high degree of ergot resistance that is effective under severe inoculum pressure. The degree of progress is summarized in Table 17.

Every season, lines identified as ergot low susceptible, are intermated and the progenies screened and ergot-free single heads selected. During the 1979 rainy season about 1500 lines, in F₁ (71 lines, Appendix-XI), F₂ (92 populations, Appendix-XII), F₃ (F₃1-95 lines, Appendix-XIII; F₃ 11-160 lines, Appendix-XIV; F₃ III-136 lines, Appendix-XV; and F₃ IV-74 lines, Appendix-XVI) and F₄ (F₄ 1-258 lines, Appendix-XVII; F₄ II-214 lines, Appendix-XVIII; and F₄ III-401 lines, Appendix-XIX) stages were screened and selections were made. Performance of these lines at different stages is summarised in Table 18. In the 1979-80 post-rainy season 1149 lines in F₂ (29 populations, Appendix-XX), F₄ (280 lines, Appendices-XXI-XXIV) and F₅ (840 lines, Appendices XXV-XXVI) stages were screened and the performance of these lines is summarised in Table 19.

From the first set of crosses, the 20 ergot-least-susceptible F₅ lines have been included in the 1980 IPMEN for multilocational testing in India and West Africa (Table 20).

4.6 IPMDRTP and Multiple Disease Resistance:-

The International Pearl Millet Disease Resistance Testing Program (IPMDRTP) was initiated in 1976 with the IPMDMN, and included the IPMEN and the IPMSN in 1977, and the IPMRN in 1978.

- 4.6.1 The 1979 IPMEN:- The 27 entry IPMEN was tested at 11 locations in India and West Africa. A separate report has been brought out and distributed to the scientists concerned (see the Progress Report: PMPE 3001). In addition to ergot screening, the IPMEN entries were screened for downy mildew resistance and smut resistance at the ICRISAT Center and at Hissar respectively. Many of the IPMEN entries had high levels of resistance to downy mildew and smut (Table 21).

4.6.2 The 1979 IPMDMN:- The 45 entry IPMDMN was screened for ergot and smut resistance in addition to downy mildew resistance and entries with low susceptibility to ergot, smut and downy mildew were identified (Table 22).

4.6.3 The 1979 IPMSN:- The 37 entry IPMSN was screened for ergot and downy mildew resistance in addition to smut resistance and entries with low susceptibility to smut, ergot and downy mildew were identified (Table 23).

At the ICRISAT Center, lines identified resistant to one disease are screened for other diseases. From the 1979 IPMEN, IPMDMN and IPMSN we have 13 lines with good levels of resistance to downy mildew, smut, and ergot (Table 24). and by the end of 1980 we expect more lines with multiple disease resistance including rust resistance.

The ergot resistant F_4 lines were screened for downy mildew and smut resistances in the 1979 rainy season, and lines with high levels resistance to ergot, downy mildew, and smut were identified (Table 25).

Each set of crosses for ergot resistance is exposed to the high inoculum pressure of downy mildew and smut at F_4 or F_5 stage and lines with multiple disease resistance are identified.

4.7 Utilization of developed resistance sources:-

After the sources of resistance have been developed, the next important step is to effectively utilize the resistance to develop disease resistant hybrids and varieties. We have been doing this in collaboration with our breeding colleagues. During the 1979-80 post rainy season the ergot low susceptible F_5 lines were planted in the downy mildew mildew nursery for (i) screening for downy mildew resistance (ii) increasing seeds of the ergot least susceptible lines by selfing the downy mildew-free plants, and (iii) utilization in the breeding program.

Dr. B.S. Talukdar and his group made 642 test-crosses on 3 ms lines (111-A, 5141-A, and 5054-A) using the top 30 ergot least susceptible and DM resistant F_5 lines to test their potential as pollinators in the hybrid program.

Dr. S.B. Chavan and his group used 12 ergot least susceptible and DM resistant F_5 lines to form 2 synthetics.

Crosses were made between susceptible and resistant inbreds to study the genetics of resistance.

Table 1. Performance of 284 West African germplasm lines in the initial ergot screen during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	0	0.0
1-10	0	0.0
11-20	5	1.8
21-30	8	2.8
31-40	42	14.8
41-50	69	24.3
51-60	65	22.9
61-70	58	20.4
71-80	28	9.9
81-90	9	3.2
91-100	0	0.0

Table 2. Performance of 84 West African germplasm (Clement's group) lines in the initial ergot screen during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	0	0.0
1-10	0	0.0
11-20	2	2.4
21-30	5	5.9
31-40	9	10.7
41-50	19	22.6
51-60	21	25.0
61-70	18	21.4
71-80	8	9.5
81-90	2	2.4
91-100	0	0.0

Table 3. Performance of 651 Upper Volta selections in the initial ergot screen during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	0	0.0
1-10	6	0.9
11-20	13	2.0
21-30	21	3.2
31-40	52	8.0
41-50	111	17.0
51-60	137	21.0
61-70	131	20.1
71-80	99	15.2
81-90	71	10.9
91-100	10	1.5

Table 4. Summary of ergot reactions of ICRISAT breeding lines during the 1979 rainy season at ICRISAT Center

Trial	No. of entries	No. of entries in the ergot severity(%) class						
		0-<1	1-10	11-20	21-30	31-40	41-50	>50
EVT	25	0	0	1	0	2	4	18
IEVT	25	0	0	0	2	1	5	17
CEVT	14	0	0	0	0	2	1	11
PMIHT-P-IV	32	0	0	0	0	1	6	25
IVS P-77	46	0	0	1	1	5	4	35
CBT	25	0	0	0	0	2	0	23
BPPT	61	0	0	0	3	3	9	46
ELVT	32	0	0	0	2	3	1	26
PMHT-1	27	0	0	0	0	1	0	26
PMHT-1-P	27	0	0	0	0	0	1	26
PMIHT-II	36	0	0	0	0	0	0	36
PMIHT-II-P	35	0	0	0	1	0	0	34
PMST-1	25	0	0	0	0	1	1	23
Inbreds	25	0	0	0	0	0	2	23
UPN	71	0	0	1	3	1	4	62
Male Steriles	3	0	0	0	0	0	0	3
Total	509	0	0	3	12	22	38	434
% of entries		0	0	0.6	2.3	4.3	7.5	85.3

Table 5. Summary of ergot reactions of 149 entry All India Coordinated trials during the 1979 rainy season at ICRISAT Center

Trial	No. of entries	No. of entries in the Ergot severity(%) class						
		0-<1	1-10	11-20	21-30	31-40	41-50	>50
IPMHT-I	29	0	0	0	0	0	1	28
APMHT-II	23	0	0	0	0	0	2	21
IPMPT-IV	31	0	0	0	0	0	0	31
APMPT-V	17	0	0	0	0	0	2	15
Male Steriles	49	0	0	0	0	0	0	49
Total	149	0	0	0	0	0	5	144
% of entries		0	0	0	0	0	3.3	96.7

Table 6. Initial Ergot Resistance Screening during the 1979 rainy season at the ICRISAT Center

Material	No. of entries	No. of entries in the ergot severity(%) class						
		0-<1	1-10	11-20	21-30	31-40	41-50	>50
West African germplasm I	284	0 (0)	0 (0)	5 (1.8)	8 (2.8)	42 (14.8)	69 (24.3)	160 (56.3)
West African germplasm II (Clement's groups)	84	0 (0)	0 (0)	2 (2.4)	5 (6.0)	9 (10.7)	19 (22.6)	49 (58.3)
Upper Volta Selections	651	0 (0)	6 (0.9)	13 (2.0)	21 (3.2)	52 (8.0)	111 (17.0)	443 (68.3)
ICRISAT breeding lines	509	0 (0)	0 (0)	3 (0.6)	12 (2.3)	22 (4.3)	38 (7.5)	434 (85.3)
AICMIP trials	149	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5 (3.3)	144 (96.7)
Total	1677	0	6 (0.3)	23 (1.4)	46 (2.7)	125 (7.4)	242 (14.5)	1235 (73.7)

Figures in parentheses are the percentage of entries in each severity class

Table 7. Performance of 256 Pearl millet lines in the advanced ergot screen-A during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	0	0
1-10	4	1.6
11-20	13	5.1
21-30	21	8.2
31-40	26	10.1
41-50	32	12.5
51-60	44	17.2
61-70	51	19.9
71-80	35	13.7
81-90	29	11.3
91-100	1	0.4

Table 8. Performance of 98 Pearl millet lines in the advanced ergot screen-B during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	1	1.0
1-10	8	8.2
11-20	7	7.1
21-30	11	11.2
31-40	10	10.2
41-50	13	13.3
51-60	6	6.1
61-70	16	16.3
71-80	15	15.3
81-90	11	11.2
91-100	0	0.0

Table 9. Performance of 37 Pearl millet lines in the advanced ergot screen-C during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	0	0.0
1-10	6	16.2
11-20	3	8.1
21-30	3	21.6
31-40	3	21.6
41-50	3	21.6
51-60	1	2.7
61-70	0	0.0
71-80	3	8.1
81-90	0	0.0
91-100	0	0.0

Table 10. Performance of 204 Pearl millet lines in the advanced ergot screen-D during the 1979 rainy season at ICRISAT Center

Ergot severity (%) range	No. of lines	% of lines
0-<1	0	0.0
1-10	8	3.9
11-20	19	9.3
21-30	31	15.2
31-40	31	15.2
41-50	28	13.7
51-60	34	16.7
61-70	25	12.3
71-80	18	8.8
81-90	9	4.4
91-100	1	0.5

Table 11. Performance of 113 Pearl millet lines in the advanced ergot screen-E during the 1979 rainy season at ICRISAT Center

<u>Ergot severity (%)</u> <u>range</u>	<u>No. of lines</u>	<u>% of lines</u>
0-<1	1	0.9
1-10	10	8.8
11-20	15	13.3
21-30	13	15.9
31-40	19	16.8
41-50	13	11.5
51-60	15	13.3
61-70	9	8.0
71-80	5	4.4
81-90	7	6.2
91-100	1	0.9

Table 12. Ergot and downy mildew reactions and days to 75 percent flowering (DTF) of the 20 selected lines (with overlapping of anthesis and protogyny) during the 1979-80 post rainy season at ICRISAT Center

Entry No.	Pedigree	DTF	Infection %		DM % ^{b/}
			Mean ^{a/}	Range	
1	700448-I-E-2-DM-3*	64	5	0-25	0
2	700434-I-E-1-DM-1*	62	6	0-25	0
3	700434-I-E-1-DM-1-3	60	6	0-20	0
4	700448-II-E-2-3-DM-1-5	64	6	0-25	0
5	ND 2282-79-1-E-2-8-DM-1-1	70	6	0-25	0
6	700448-II-E-2-3-DM-1-6	64	6	0-50	0
7	700448-II-E-2-3-DM-1*	54	7	0-60	0
8	ND 2282-79-1-E-2-8-DM-1-2	68	7	0-35	0
9	700434-I-E-1-DM-1-1	68	8	1-25	0
10	700448-II-E-2-3-DM-1-4	65	8	0-25	0
11	700448-II-E-2-3-DM-1-3	64	9	0-40	0
12	700434-I-E-1-DM-1-5	64	13	0-50	0
13	700434-I-E-1-DM-1-2	60	13	0-50	0
14	ND 2282-79-1-E-2-8-DM-1-3	68	14	0-50	4
15	700434-I-E-1-DM-1-6	60	14	0-60	0
16	700448-II-E-2-3-DM-1-7	60	15	0-60	0
17	700434-I-E-1-DM-1-4	62	15	2-40	0
18	700448-II-E-2-3-DM-1-1	62	19	1-40	0
19	700448-II-E-2-3-DM-1-2	62	25	0-75	0
20	700599-E-8-DM-1*	54	31	1-80	0
	BJ-104 (Check)	54	76	20-98	-

^{a/} Mean of 20 bagged-inoculated-bagged heads

^{b/} Recorded in the downy mildew nursery during the 1979-80

* Entries had <1% infection during the 1979 rainy season

Table 13. Ergot reactions and days to 75 percent flowering (DTF) of the 25 entry 1979 PMEN at ICRISAT Center during the rainy season

Entry No.	Pedigree	DTF ^{a/}	Mean ^{b/} ergot (%)
1	SC-2(M)5-4-E-1-T-2	44	3
2	700708-I-E-1	55	4
3	SC-2(M)5-4-E-1-T-5	41	12
4	J 2238-E-2-DM-3	53	18
5	SC-2(M)5-4-E-1-T-1	46	18
6	J 2238-E-2-1	58	22
7	SC-2(M)5-4-E-1-4	46	23
8	700457-E-1-DM-3	61	35
9	700626-E-1	55	35
10	700042-E-2	53	36
11	ExBouchi 700638-3-2-E-1-1	56	33
12	700490-E-2	51	43
13	ExBouchi 700638-3-2-E-1-DM-2	44	52
14	700583-E-5	50	57
15	3/4 ExB 35-1-E-1	44	59
16	J 2238-E-2-DM-4	54	60
17	IP No.1926-E-5	51	60
18	J 2238-E-2-2	51	67
19	EB 63-1-2-E-1	48	69
20	J 2210-2-E-3-2	50	72
21	700142-E-6	47	76
22	J 703-1-E-1	47	80
23	J 1999-E-3-2	47	89
	ICH-105 Check	41	81
	BJ-104 Check	38	86

^{a/} Mean of 2 replications

^{b/} Mean of 40 bagged-inoculated-bagged heads in 2 replications

Table 14. Ergot reactions of selfed and sibbed entries from the 1979 IPMEN during the rainy and the post rainy seasons at ICRISAT Center

Entry	Mean ^a /ergot severity (%)	
	Selfed	Sibbed
700601-E-1	27	14
700626-E-1-DM-1	24	31
700443-1-E-2-1	26	32
700537-E-1-1	14	28
ExBouchi 700638-3-2-E-1-DM-2	47	35
700572-E-1-2	37	39
J 1553-E-1-3	30	47
700507-E-3	27	44
J 2210-2-E-3-2	23	57
700703-1-E-1-DM-1	38 ^b /	26
ExBouchi 700638-3-2-E-1-4	28	41
ExBouchi 700638-3-2-E-1-DM-4	35	34
700042-E-2	5 ^b /	12 ^b /
700490-E-2	8 ^b /	36 ^b /
J 797-1-E-3-4	25 ^b /	42 ^b /
J 2238-E-2-2	61 ^b /	59 ^b /
SC-2(M)5-4-E-1-6	10 ^b /	26 ^b /
SC-2(M)5-4-E-1-5	12 ^b /	19 ^b /
700457-E-1-DM-4	15 ^b /	9 ^b /

^a/ Mean of 30-40 bagged-inoculated-bagged inflorescences in two screenings

^b/ Mean of 10-20 bagged-inoculated bagged inflorescences in one screening

Table 15. Advanced Ergot Resistance Screening during the 1979 rainy and 1979-80 post rainy seasons at ICARISAT Center

Trial	No. of entries	No. of entries in ergot sev. (%) range						
		0-<1	1-10	11-20	21-30	31-40	41-50	>50
Advanced Screen A	256	0	4	13	21	26	32	160
Advanced Screen B	98	1	8	7	11	10	13	48
Advanced Screen C	37	0	6	3	6	8	8	4
Advanced Screen D	204	0	8	19	31	31	28	87
Advanced Screen E	113	1	10	15	18	19	13	37
PMEN	23	0	2	3	2	4	1	11
Overlapping entries	20	0	11	7	1	1	0	0
Total	751	2	49	67	92	99	95	347
% of entries		0.3	6.5	8.9	12.5	14.0	12.6	45.3

Table 16. Sequence of screening and selection of ergot resistant plants from the crosses at each generation from the 1978 rainy season to the 1979-80 post-rainy season at the ICRISAT Center

Cross	1978 rainy season	1978-79 post-rainy season	1979 rainy season	1979-80 post-rainy season
	No. of F ₂ pop. screened	Single head progenies tested as F ₃ lines	Single head progenies tested as F ₄ lines	Single head progenies tested as F ₅ lines
1. J606-2 x J703-1	6	19 (5)	71 (10)	11 (2)
2. J703-1 x J606-2	11	17 (8)	17 (4)	8 (1)
3. J797-1 x J606-2	3	13 (3)	8 (1)	-
4. J703-1 x J797-1	6	9 (4)	21 (3)	8 (1)
5. J797-1 x J703-1	10	19 (7)	46 (8)	8 (1)
6. J1553 x J606-2	1	2 (1)	4 (2)	-
7. J1553 x J797-1	13	32 (10)	11 (3)	8 (1)
8. J1999 x J797-1	5	9 (4)	-	-
9. J1553 x J1999	1	7 (1)	-	-
10. J1999 x J1553	4	4 (3)	14 (1)	-
11. J1999 x J2210-2	4	19 (4)	7 (1)	-
12. J2210-2 x J1553	3	9 (3)	7 (1)	-
13. J2210-2 x J2238	-	30 (2)	94 (10)	8 (1)
14. J2238 x J2210-2	4	31 (4)	19 (3)	45 (5)
15. J2238 x J797-1	2	14 (2)	8 (1)	4 (1)
16. J2238 x J1553	1	8 (1)	59 (2)	6 (1)
17. 700142 x J2210-2	2	5 (2)	-	-
18. 700142 x J2238	12	47 (7)	8 (1)	-
19. 700583 x J797-1	1	3 (1)	-	-
20. 700583 x J2210-2	2	3 (1)	-	-
21. 700583 x 700142	6	15 (4)	-	-
22. 700583 x 700599	4	5 (3)	-	-
23. 700599 x J2238	3	12 (3)	-	-
24. 700599 x 700142	1	-	-	-
25. 700599 x 700583	2	12 (2)	-	-
26. 700619 x J703-1	6	21 (6)	-	-
27. 700619 x 700599	10	47 (9)	34 (4)	75 (5)
28. MPP 7135-3-1 x J606-2	8	15 (5)	-	-
29. MPP 7135-3-1 x IP 1926	6	5 (3)	-	-
30. IP 1926 x MPP 7135-1	17	8 (6)	-	-

contd.....

Cross	<u>1978 rainy season</u>	<u>1978-79 post-rainy season</u>	<u>1979 rainy season</u>	<u>1979-80 post-rainy season</u>
	No. of F ₂ pop. screened	Single head progenies tested as F ₃ lines	Single head progenies tested as F ₄ lines	Single head progenies tested as F ₅ lines
31. MPP 7135-3-1 x 700583	1	2 (1)	-	-
32. MPP 7135-3-1 x 700599	3	14 (3)	-	-
33. MPP 7135-3-1 x 700619	4	17 (4)	-	-
34. IP 1926 x J797-1	3	-	-	-
35. IP 1926 x J2238	4	1 (1)	-	-
36. IP 1926 x SC-1(S4)27-3	1	2 (1)	-	-
37. IP 1941 x IP 1926	7	16 (5)	-	-
38. IP 1941 x SC-1(S4)27-2	5	6 (2)	-	-
39. IP 2253 x IP 1941	2	-	-	-
40. SC-1(S4)27-2xJ797-1	4	2 (2)	-	-
41. SC-1(S4)27-2xIP2253	1			
42. SC-1(S4)27-3xIP2253	3	8 (3)		
43. SC-1(S4)27-3 xIP1941	3	7 (1)		
44. SC-1(S4)27-2xSC-1(S4)27-3	11	2 (1)		
45. SC-1(S4)27-3xSC-1(S4)27-2	5	7 (1)		
46. SC-1(S4)27-3xExB700638-3-2	5	1 (1)		
47. ExB700638-3-2xSC-1(S4)27-3	7	19 (6)	9 (2)	
48. ExB700638-3-2xSC-1(S4)27-2	7	29 (4)	35 (3)	39 (4)
49. SC-2(M)13-4xExB700638-3-2	3	12 (6)		
50. ExB700638-3-2xSC-2(M)13-4	1	9 (1)		
51. ExB700638-3-2xND2282-79-1	12	33 (10)		
52. ND2282-79-1xExB700638-3-2	10	20 (9)		
53. ND2282-79-1xSC-1(S4)27-3	6	10 (5)		
Total	269	657	472	220

Figures in parentheses indicate the number of population/families from which the number of ergot free heads were selected at each generation

Table 17. Progress in developing ergot resistant lines from F₂ to F₅ generations

Ergot severity ^{a/} (%)	Percentage of entries in each class ^{b/}			
	F ₂	F ₃	F ₄	F ₅
<1	0	0	0.4	1.4
1-10	0	2.3	14.6	13.6
11-20	0	5.3	20.5	19.1
21-30	6.0	11.0	27.5	16.4
31-40	9.1	16.3	21.8	20.4
41-50	18.2	16.0	9.3	15.0
>50	66.6	48.7	5.7	16.4

^{a/} based on the mean ergot severity of 20 to 40 inoculated heads

^{b/} F₂-33 lines; F₃-657 lines; F₄-472 lines; F₅-220 lines

Table 18. Summary of ergot reactions of F₁, F₂, F₃, F₄ lines (from crosses involving ergot low susceptible lines) during the 1979 rainy season at ICRISAT Center

Progeny	No. of lines	Number and (percent) of lines in each ergot severity (%) class						
		0-<1	1-10	11-20	21-30	31-40	41-50	>50
F ₁	71	0 (0)	21 (29.6)	22 (31.0)	10 (14.1)	8 (11.3)	6 (8.4)	4 (5.6)
F ₂	92	0 (0)	5 (5.4)	22 (24.0)	20 (21.7)	17 (18.5)	17 (18.5)	11 (11.9)
F ₃ -I	95	0 (0)	6 (6.3)	21 (22.1)	23 (24.2)	16 (16.8)	16 (16.8)	13 (13.7)
F ₃ -II	160	0 (0)	1 (0.6)	2 (1.2)	14 (8.7)	28 (17.5)	32 (20.0)	83 (51.9)
F ₃ -III	136	0 (0)	2 (1.5)	10 (7.3)	21 (15.4)	31 (22.8)	35 (25.7)	37 (27.2)
F ₃ -IV	74	0 (0)	8 (10.8)	6 (8.1)	17 (23.0)	15 (20.3)	15 (20.3)	13 (17.6)
F ₄ -I	258	0 (0)	37 (14.3)	52 (20.1)	79 (30.6)	53 (20.5)	22 (8.5)	15 (5.8)
F ₄ -II	214	0 (0)	34 (15.9)	45 (21.0)	51 (23.8)	49 (23.0)	23 (10.7)	12 (5.6)
F ₄ -III	401	0 (0)	39 (9.7)	34 (20.9)	110 (27.4)	85 (21.2)	48 (12.0)	35 (8.7)
Total entries	1501	0 (0)	153 (10.2)	264 (17.6)	345 (23.0)	302 (20.1)	214 (14.2)	223 (14.8)

Table 19. Summary of ergot reactions of F₂, F₄ and F₅ lines (from crosses among ergot low susceptible genotypes) during the 1979-80 post rainy season at the ICRISAT Center

Progeny	No. of lines	Number and (percent) of lines in each severity (%) class						
		0-<1	1-10	11-20	21-30	31-40	41-50	>50
F ₂	29	0 (0)	3 (10.3)	3 (10.3)	11 (38)	8 (27.6)	4 (13.8)	00 (0)
F ₄ -I	137	0 (0)	0 (0)	5 (3.6)	8 (5.8)	11 (8)	24 (17.5)	89 (64.9)
F ₄ -II	29	0 (0)	0 (0)	3 (10.3)	3 (10.3)	3 (10.3)	3 (27.6)	12 (41.3)
F ₄ -III	83	0 (0)	3 (3.6)	7 (8.4)	19 (22.9)	13 (15.7)	23 (27.7)	18 (21.6)
F ₄ -IV	31	0 (0)	0 (0)	0 (0)	1 (3.2)	3 (9.7)	2 (6.4)	25 (80.6)
F ₅ -I	220	3 (1.4)	29 (13.2)	40 (18.2)	34 (15.4)	43 (19.5)	34 (15.4)	37 (16.8)
F ₅ -II	620	0 (0)	66 (10.6)	115 (18.5)	124 (20)	118 (19)	94 (15.2)	103 (16.6)
Total	1149	3 (0.3)	101 (8.8)	173 (15.1)	200 (17.4)	199 (17.3)	189 (16.4)	284 (24.7)

Table 20. Ergot reactions of the 20 ergot least susceptible F₅ lines, during the 1979-80 post rainy season at the ICRISAT Center, included in the 1980 IPMEN

F ₅ line No.	Ergot severity (%)					DM ^{b/}
	Rep 1	Rep 2	Rep 3	Mean ^{a/}	Range	
134-6	<1	<1	<1	<1	0-2	0
140-7	<1	1	<1	<1	0-5	2
13-6	<1	<1	1	<1	0-5	0
13-4	1	1	2	1	0-5	4
140-6	1	1	2	1	0-10	7
140-2	1	2	1	1	0-10	0
140-1	<1	1	2	1	0-10	12
134-3	<1	2	1	1	0-10	10
140-3	<1	3	1	1	0-10	0
192-5	2	3	2	2	1-10	0
134-5	1	4	1	2	1-15	0
13-2	2	2	5	3	0-10	0
192-9	2	1	7	3	0-25	0
143-3	<1	5	4	3	0-20	35
192-2	2	4	4	3	0-10	0
143-4	2	5	4	4	0-10	32
192-12	4	2	5	4	0-25	0
192-16	3	5	7	5	0-20	0
193-7	6	3	10	6	0-25	0
192-15	4	4	12	7	0-20	0

^{a/} Mean of 30 bagged-inoculated-bagged heads

^{b/} Recorded in downy mildew nursery in the 1979-80 post rainy season
30 DAP

Table 21. Ergot, smut and downy mildew (DM) reactions, and days to 75% flowering (DTF) of the 1979 IPMEN entries

Entry	Mean ^a / DTF	Mean ^b / ergot severity (%)		Smut ^c / (%)	DM ^d / (%)
		bagged- inoc.	open- inoc.		
700703-1-E-1 (Local resistant)	57	5	1	-	-
SC-2(M)5-4-E-1-5	44	5	4	<1	49
700599-E-3	43	8	5	12	0
SC-2(M)5-4-E-1-6	47	10	6	0	30
700457-E-1-DM-4	55	13	11	0	0
700355-E-1-1	50	16	7	9	2
ND 2282-79-1-E-2-7	60	17	5	3	4
700190-E-5	60	19	11	2	0
J2233-E-4-1	41	29	14	<1	4
700633-E-1	47	31	5	<1	0
700626-E-1-DM-1	50	31	1	1	2
700507-E-3	50	32	2	<1	0
ExBouchi 700633-3-2-E-1-DM-4	50	33	3	6	0
J797-1-E-3-4	50	34	9	2	4
700457-E-4	52	35	1	5	0
700601-E-1	55	35	4	12	10
700537-E-1-1	55	36	4	4	0
700448-1-E-2-1	50	37	4	2	0
J1999-E-2-DM-3	50	39	1	<1	0
J1553-E-3-1	47	39	13	16	4
ExBouchi 700633-3-2-E-1-4	47	40	18	2	0
J2233-E-2-DM-2	55	42	14	3	0
700572-E-1-2	47	44	9	13	0
J1553-E-1-3	50	45	7	9	0
700703-1-E-1-DM-1	47	46	5	6	6
SC-1(S4)27-2-E-1	50	47	12	25	13
700526-E-1	71	74	60	-	0
MPP 7135-3-1-E-5	47	78	26	3	0
BJ-104 Local susceptible	47	80	17	13	39
ICH-105 Local susceptible	47	80	43	23	4

^a/ mean of two replications

^b/ mean of 40 inoculated heads in two replications

^c/ mean smut severity of 10 inoculated bagged heads at Hissar

^d/ downy mildew incidence (%) in the ICRISAT Center DM nursery
data not recorded

Table 22. Ergot, smut and downy mildew reactions, and days to 75 per cent flowering (DTF) of 1979 IPMDMN entries during the 1979 rainy season

Entry No.	Pedigree	DTF	At ICRISAT Center		DM ^c /infection index (%)
			Ergot(%) ^a /	At Hissar Smut(%) ^b /	
1	75 - Series-1	40	6	3	3
2	7124-3	64	12	2	0
3	SDN 347-1	54	19	4	2
4	EB 13-3-1	54	20	1	<1
5	SDN-496	55	22	2	2
6	MPP 7147-2-1	51	23	5	1
7	P-7	48	37	13	<1
8	700516	54	33	4	0
9	K 560	54	33	1	2
10	DMRSP CO-B	48	41	5	<1
11	EB 209-1-6 x EB 150-1-1	45	41	4	<1
12	B Senegal-6	45	44	2	2
13	P-10	51	46	8	<1
14	700743	48	48	3	10
15	700627	54	50	<1	3
16	700042	51	50	1	<1
17	SSC 7218	51	51	5	<1
18	2287-ME	51	51	9	1
19	700651	54	52	1	<1
20	J 1486x700737-2-10	48	53	3	<1
21	IP 1930	54	54	3	<1
22	EB 79-2-2xEB 59-3-1	54	55	18	2
23	J 1593	43	56	9	11
24	IVS 7041	48	56	5	<1
25	SDN 503	46	56	5	2
26	NC 7158	61	57	13	<1
27	J 1183	45	59	3	<1
28	IP 2037	51	61	7	<1
29	2989-109-1	43	64	<1	3
30	T-123-3 x 700404-1-5-5	45	65	16	0
31	NC 7174	51	65	1	<1
32	EB 83-2	51	69	9	<1
33	700429	54	70	4	<1
34	B-Senegal-2-5	48	72	4	<1
35	114 I-R	54	75	1	<1

Contd.....

Entry No.	Pexigree	DTF	At ICRISAT Center	At Hissar	DM ^c / infection index (%)
			Ergot (%) ^a / _✓	Smut (%) ^b / _✓	
36	700331	48	76	3	<1
37	700619	51	31	3	1
38	ICH-165	46	32	15	<1
39	ICH-118	48	32	10	3
40	IP-2058	48	37	7	2
41	ICH-154	43	94	24	1
42	DJ-104	43	94	24	48
43	700251	48	95	3	<1
44	EC 7088	51	95	7	<1
45	7042	-	-	-	100
	ICH-105 Check	43	92	23	4

a/ Mean of 10 bagged-inoculated heads

b/ Mean of 10 inoculated-bagged heads in smut nursery at Hissar

c/ At ICRISAT Center downy mildew nursery

- Plants were killed by DM at the seedling stage

Table 23. Smut, Ergot and Downy mildew reactions, and days to 75 percent flowering (DTF) of 37 entry 1979 IPMSN during rainy season 1979 at Hissar

Entry	DTF ^a /	Smut severity (%)		Ergot ^c / severity (%)	DM incidence ^d (%)
		Mean ^b /	Range		
SSC FS 252-S-4	62	0	0-0	19	0
ICI 7517-S-1	61	0	0-0	0	0
P-10-S-1	57	<1	0-1	22	0
WC FS 151-S-1-1	66	<1	0-1	32	0
EB 229-4-1-S-6-1	55	<1	0-2	54	1.5
EB 137-1-1-S-3	59	<1	0-15	24	0
EB 209-1-6-S-7	57	<1	0-5	23	13.4
EB 24-1-S-5	59	1	0-10	26	5.6
700130-S-1	61	1	0-10	47	2.7
EDS 218-1-S-5-3	54	1	0-5	53	0
EB 137-2-S-1	53	1	0-10	66	1.7
EDS 119-2-1-S-1	54	1	0-15	20	1.9
WC FS 142-S-1-1	55	1	0-10	62	2.2
WC FS 148-S-1	58	1	0-5	41	2.3
P-16-S-1	54	2	0-20	39	7.5
WC FS 32-S-3-2	61	2	0-20	61	0
EBS 70-1-S-4-3	66	2	0-35	13	4.2
WC FS 109-S-1-2	61	2	0-35	-	5.8
ED 54-1-1-S-7-3	66	2	0-10	2	0
J 2238-S-1-1	61	2	0-50	45	31.4
ED 132-2-S-4-2	58	2	0-50	27	0
P-20-S-1	54	2	0-35	61	2.4
WC FS 148-S-1-4	57	2	0-25	59	2.1
EB 147-1-3-S-1-1	54	3	0-10	63	12.3
ED 74-3-S-1	61	3	0-45	21	3.5
EB 142-1-1-S-2-1	53	3	0-25	73	1.9
WC FS 38-S-4-2	56	3	0-25	57	2.1
ED 143-1-S-2-2	62	3	0-25	13	0
EB 170-2-S-1-3	60	3	0-75	53	0
EB 237-3-1-S-2	65	3	0-50	27	1.9

contd.....

Entry	DTF ^{a/}	Smut severity (%)		Ergot ^{c/} severity (%)	DM incidence ^{d/} (%)
		Mean ^{b/}	Range		
EB 116-1-1-S-4-3	56	3	0-25	9	0
EB 170-1-1-S-1-2	56	3	0-50	30	0
IP No. 2253-S-1	57	3	0-15	45	0
EB 117-2-1-S-1-3	52	3	0-25	75	3.3
WC FS 148-S-1-3	62	4	0-25	46	0
EB 59-1-3-S-1-1	54	5	0-20	70	1.9
P-19-S-1	60	6	0-60	31	4.6
BJ 104 (Trial check)	51	25	0-80	82	38.8
Local resistant	57	0	0-0	-	-
Local susceptible	61	9	0-60	-	-

a/ Mean of 2 replications

b/ Mean of 40 inoculated-bagged heads in 2 replications and the data is rounded off to the nearest value

c/ Mean of 10 bagged-inoculated-bagged heads in ergot nursery at ICRISAT Center

d/ Downy mildew nursery at ICRISAT Center

(-) Not inoculated with ergot and not planted in the downy mildew nursery

Table 24. Entries identified resistant to downy mildew (DM) ergot and smut through IPMDRTP-IPMDMN, IPMEN and IPMSN during 1979

Entry	Source	Reactions to diseases ^{a/}		
		DM(%)	Ergot(%)	Smut(%)
75-Series-1	IPMDMN	3	6	3
7124-3	IPMDMN	0	12	2
SDN 347-1	IPMDMN	2	19	4
700457-E-1-DM-4	IPMEN	0	13	0
700355-E-1-1	IPMEN	2	16	9
ND 2282-79-1-E-2-7	IPMEN	4	17	3
700190-E-5	IPMEN	0	19	2
ICI 7517-S-1	IPMSN	0	0	0
SSC FS 252-S-4	IPMSN	0	19	0
EBS 70-1-S-4-3	IPMSN	4	13	2
EB 54-1-1-S-7-3	IPMSN	0	2	2
EB 143-1-S-2-2	IPMSN	0	13	3
EB 116-1-1-S-4-3	IPMSN	0	9	3

a/ data used on the multilocational testing for each nursery and screening in individual disease nurseries at the ICRISAT Center and at Hissar

Table 25. Downy mildew and smut reactions of the ergot resistant F₄ lines and selections at F₄ & F₅ stages

Entry	No. of F ₄ lines	Mean smut sev. (%) ^{a/}	Mean downy mildew inc. ^{b/}	Ergot sev. (%)		No. of ergot free heads at	
				Mean	Range ^{c/}	F ₄	F ₅
J606-2 x J703-1	2	<1	2	1.5	0-15	11	107
J703-1 x J606-2	1	<1	-	5	0-35	8	-
J703-1 x J797-1	1	3	0	3.5	0-25	8	10
J797-1 x J703-1	1	4	0	2	0-5	8	-
J1553 x J797-1	1	1	6	14	0-70	8	-
J2210-2 x J2238	1	3	0	9	0-45	8	29
J2238 x J2210-2	5	<1	0	3.4	0-40	45	318
J2238 x J797-1	1	1	8	9	0-60	4	-
J2238 x J1553	1	3	0	8	0-40	6	-
700619 x 700599	5	3	0	2	0-15	75	99
Ex-Bouchi 700638-3-2x	4	7	8	3.3	0-55	39	9
SC-1(S ₄)27-2	-	-	-	-	-	-	-
Susceptible check(BJ-104)	-	37	55	80.0	35-98	-	-

a/ screening conducted at Hissar

b/ screening conducted in the ICRISAT Center DM nursery

c/ reactions of individual inoculated heads

5. Project No.: M-Path-42.3: Evaluation of alternative ergot control measures

5.1 Summary:-

The concept of the "pollen-based ergot escape mechanism", which emerged from the discovery of interaction between pollen and ergot conidia, was tested to control ergot in hybrids.

Provision of timely supply of pollen from an early-maturing ergot-less-susceptible genotype, SC-2(M)5-4, to the highly ergot susceptible hybrids ICH-118 and ICH-220 reduced ergot infection and increased grain yields in inoculated isolated field plots. Results indicate that this control measure could probably be effectively and economically applied to control ergot in hybrids in farmers' fields.

5.2 Introduction:-

This project was initiated in 1978, with the objective to evaluate the possibility of an effective method, other than the host-plant resistance, to control ergot in pearl millet. This particular project was the outcome of our finding that rapid pollination reduces ergot infection (Thakur & Williams, 1980, Phytopathology 70: 80-84). We hypothesed that increasing pollen availability at the stage of maximum susceptibility in an F₁ hybrid would reduce ergot infection.

5.3 Experiments and Results:-

The experiments were conducted during the rainy seasons of 1978 and 1979 at the ICRISAT Center farm in isolated plots. Two ICRISAT experimental F₁ hybrids, ICH-118 and ICH-220, were the susceptible test hybrids. A African variety, SC-2(M)5-4, early maturing and less susceptible to ergot, was used as the pollen donor. The test hybrids were planted as a sole crop and either as a seed mixture (4 part hybrid + 1 part pollen donor) or in combination and the pollen donor planted after every 2 rows of the test hybrid. The following treatments were maintained.

hybrid alone - inoculated
hybrid + pollen donor - inoculated
hybrid alone - noninoculated
hybrid + pollen donor - noninoculated

The experiments were conducted in 24m x 20m isolation plots located at least 500 m from any other pearl millet crop. In 1978, the test hybrid used was ICH-118 as seed mixture with the pollen donor in an unreplicated trial. In 1979 ICH-220 was used with the pollen donor planted after every 2 rows of the hybrid. Ergot inoculations were made by spray-inoculating the crop at the time the hybrid was at the protogyny flowering stage with honeydew conidial suspension using a knapsack power sprayer. The inoculations were made thrice in 1978 and twice in 1979. Water was sprayed on the noninoculated check crops.

Ergot scoring and yield measurements were taken following the standard procedures used at the ICRISAT Center.

Results of two years experiments are presented in Tables 26 and 27. In both the years in inoculated plots there was a considerable reduction in ergot infection and increase in grain yields of the hybrids planted with the pollen donor compared with the hybrids without the pollen donor.

While these results are encouraging, there is a need to test the success of this control measure at more than one location..

Table 26. Ergot infection and grain yield of Pearl Millet F₁ hybrid ICH-113 grown with and without a pollen donor, SC-2(M)5-4 and either inoculated or non-inoculated in four isolation plots during the 1978 rainy season at the ICRISAT Center

Testline(s)	Treatment	Ergot infection		Grain yield	
		inc.(%)	sev.(%) ^{a/}	g/head ^{b/}	kg/plot ^{c/}
ICH-113 alone	Inoculated	73	8.3	4.4	1.7
ICH-113+SC-2(M)5-4	Inoculated	34	1.5	33.3	15.0
ICH-113 alone	Non-inoculated	25	1.1	15.6	7.6
ICH-113+SC-2(M)5-4	Non-inoculated	20	2.3	8.6	2.6

a/ Severity is based on infected heads only

* Plot size = 11 rows x 3 m (3 m x 3.25 m)

b/ Mean of 20 inflorescences grain weight

Table 27. Mean ergot infection and mean grain yield of a Pearl Millet F₁ hybrid ICH 220 grown with and without pollen donor lines SC-2(M)5-4 and either inoculated or non-inoculated in isolation plots during the 1979 rainy season at the ICRISAT Center

Testline(s)	Treat- ment	Mean ^{a/} ergot infection		1000 grain wt. (g)	Thre- shing (%)	Plot ^{b/} yield (kg)	Grain no. (x 10 ³)
		Inc. (%)	Sev. (%)				
ICH 220	Inoculated	90	26	6.2	43.7	8.18	1322
ICH 220+SC-2(M)5-4 ^{c/}	Inoculated	55	12	7.8	66.3	22.87	3206
ICH 220 alone	Non- inoculated	87	16	6.6	36.7	4.70	777
ICH 220+SC-2(M)5-4 ^{c/}	Non- inoculated	10	8	7.5	72.3	26.94	3736
S.D.		8.6	12.6	0.9	7.4	8.0	926.8
LSD (P=0.05)		17.1	13.6	1.9	14.9	16.0	1686.0
CV (%)		14.2	59.4	13.3	13.6	51.1	47.3

a/ Mean of 200 randomly selected heads from each of 3 replications and severity is based on infected heads

b/ Plot size 15 rows x 10 m (11.25 m x 10 m) and yield is mean of 3 replications

c/ SC-2(M)5-4 an early maturing ergot low susceptible line planted after every 2 rows of ICH 220

6 Project: M.Path-N3.2: Identification, development and utilization of stable smut resistance

6.1 Summary:-

Smut resistance screening has been carried out at Hissar since 1977. Although Hissar is known as a "hot spot" for smut, natural incidence of smut was almost negligible during the 1979 rainy season. The weather conditions, particularly humidity although were not conducive to promote natural smut infection, about 40% infection (severity) developed on the known susceptible hybrids BJ-104 and ICH-105 following inoculation.

6.1.1 Initial Screen:-

- i) - of 358 West African germplasm lines (including Clement selections), 93 lines were smut-free and about 52% of lines had smut in the range of 0.1 to 5%. Many smut-free single heads were selected for further testing.
- ii) - of 654 selections from Upper Volta, 48 lines were smut-free and more than 50% of the lines had no more than 5% smut.
- iii) - a total of 99 entries in 5 ICRISAT breeding trials were screened. All the hybrids and male steriles were highly susceptible (more than 20% smut). Six of the 23 inbreds were smut-free. High smut susceptibility of the advanced breeding lines emphasises the need to develop smut resistant hybrids and varieties.

6.1.2 Advanced Screen:-

- i) - 790 entries, selected from the 1978 Initial Screen were tested. Twentyone percent of entries were smut-free, about 30% of entries had smut between 0.1 and 1%, 26% of entries had smut severity between 1.1 and 5%, and only about 3% of entries had beyond 20% smut. Some of the smut-free entries have been included in the 1980 IPMSN for multilocational testing.

- ii) - in the 23 entry PMSN (entries selected from the 1978 Advanced screen) 5 entries were smut-free and 22 entries had no more than 5% smut. Some of these entries were included in the 1980 IPMSN.

6.1.3 The 1979 IPMSN:-

- the 1979 International Pearl Millet Smut Nursery (IPMSN), with 37 entries, was tested at 2 locations in West Africa and 2 locations in India. Entries with a high degree of resistance across locations were identified (see the 1979 IPMSN Report - PMPS 8001).

6.1.4 Development of smut resistance:-

- a total of 167 F₂ populations from crosses involving smut low susceptible genotypes and agronomic elite genotypes were tested. More than 500 smut-free single heads were selected from the promising populations for further evaluation at the F₃ stage.

6.1.5 Utilization of smut resistance:-

- some of the identified resistance sources are being utilized to develop smut resistant hybrids and varieties. Test cross F₁s and Co-bulks will be tested during the 1980 rainy season. Crosses between smut resistant lines and good agronomic types (dwarf and high tillering) have been made and F₂ populations will be screened in the 1980 rainy season.
- seed of smut resistant lines have been supplied to several scientists in India on request.

6.2 Introduction:-

This project was initiated in 1976 and the progress was reviewed in 1978. The main objectives of the project are to identify and develop sources of resistance, and utilise them in breeding program to develop smut resistant cultivars.

Smut resistance screening has been carried out since 1977 at Hissar, a smut "hot spot" location. Like the ergot resistance screening, the smut resistance screening is also carried out in three phases - Initial, Advance and Multilocational testing as detailed in the 1978 Report.

During the rainy seasons of 1977 and 1978, the natural incidence of smut was high enough (more than 80% severity on susceptible lines) at Hissar for screening materials without artificial inoculation. Natural smut incidence, however, was quite low (less than 1% on the early planted smut susceptible hybrid BJ-104 at HAU farm) during the 1979 rainy season. Therefore, screening was done by artificial inoculation. The inoculated heads of BJ-104 and ICH-105 developed about 40% smut compared to less than 1% smut on uninoculated heads.

6.3 Inoculum and inoculation:-

Spore balls from freshly collected smut sori, from infected earheads at the HAU farm, were soaked in tap water for about 24 hrs. The sporidial suspension so obtained was used as inoculum. About 5 ml spore suspension was inject-inoculated into the boot of each plant and was then covered with a white parchment paper bag. Smut scoring was done at maturity. The scoring system followed was the same as in the previous years.

6.4 Initial Screen:-

6.4.1 Initial Screen-A:- 274 germplasm lines from Africa were screened. Seventy five lines (27% of entries) were smut-free and only 8 lines had more than 20% smut (Table 28). Detailed smut reactions are provided in Appendix-I together with ergot reactions. The susceptible checks ICH-105 and BJ-104 developed more than 40% smut. We selected 48 smut-free heads for further evaluation.

6.4.2 Initial Screen-B:- We screened 85 germplasm selections made by Clement in Upper Volta. Eighteen lines were smut-free, 28 lines had no more ^{than} 1% smut, and only 2 lines had more than 20% smut (Table 29). The detailed observations are presented in Appendix-II together with ergot reactions. We selected 36 smut-free heads for further evaluation.

6.4.3 Initial Screen-C:- We screened 654 selections in breeding lines from Upper Volta. About 7% of the entries (48 selections) were smut-free, about 17% of the entries (110 selections) developed no more than 1% smut. Only 27 entries (4% of selection) had more than 20% smut

(Table 30). The detailed reactions are provided in Appendix-III together with ergot reactions. We selected more than 300 smut-free heads for further testing.

6.4.4 ICRISAT Breeding materials:- A total of 99 entries from 5 trials were screened. These included hybrids, inbreds, hybrid-parents, ms-lines, and IPMAT-5 entries. The smut reactions of hybrids, hybrid-parents and ms-lines are presented in Appendix-IV together with ergot reactions and those of IPMAT-5 and inbre are presented in Appendix-XXVII and the summary presented in Table 31.

Of 23 inbreds, 6 were smut-free and 9 developed smut in the range of 0.1 to 5%. Among 21 IPMAT-5 entries, no entry was smut free, 12 entries had smut in the range of <1 to 20% and the remaining 9 entries developed more than 20% smut. Of 25 hybrid-parents, 19 entries developed smut in the range of <1-20%, and the remaining 6 had more than 20% smut.

Hybrids and the ms-lines were highly susceptible. Only 5 of the 27 hybrids had smut in the range of 10-20% and the remaining hybrids and the 3 ms-lines all had more than 20% smut.

6.5 Advanced Screen:-

Smut-free single head selections from the Initial Screen are retested as head-to-row progenies in the Advance Screen. About 800 entries were screened in 3 trials.

6.5.1 Advanced Screen-A:- Four of the 54 entries were smut-free, 25 entries developed smut in the range of 0.1-1% and the remaining entries had smut between 1 and 20% (Table 32) compared with 40% smut infection in the susceptible check lines. The detailed smut reactions are presented in Appendix-XXVIII. We selected 60 smut-free heads from 29 promising entries for further evaluation.

6.5.2 Advanced Screen-B:- Of 525 entries screened, 104 entries were smut-free, 155 entries had smut between 0.1 and 1 percent, 149 entries had between 1.1 and 5% and only 18 entries had more than 20% smut (Table 33). The smut reactions of individual entries are presented in Appendix-XXIX. About 300 smut-free single heads were selected from 100 promising entries for further evaluation.

6.5.3 Advanced Screen-C:- Of the 211 entries, 53 were smut-free, 59 entries developed smut in the range of 0.1 to 1.0% and only 3 entries had more than 20% smut (Table 34). In Appendix-XXX smut reactions of individual entries are presented. About 150 smut free-single heads from 51 promising entries were selected for further evaluation.

6.5.4 Pearl Millet Smut Nursery (PMSN):- The 1979 PMSN with 23 promising entries from the 1978 Advanced Screen, was screened at Hissar. Five entries were smut-free, 11 entries had smut in the range of 0.1 to 1%, and the remaining entries developed smut in the range of 1 to 9% (Table 35). The 5 smut-free entries have been included in the 1980 IPMSN for multilocational testing.

6.6 International Pearl Millet Smut Nursery (IPMSN):-

The 1979 IPMSN with 37 entries was tested at Dambey (Senegal), Kamboinse (Upper Volta), and Jamnagar and Hissar (India). The results were encouraging and five entries; ICI 7517-S-1, P-10-S-1, SSCFS 252-S-4, EB209-1-6-S-7, and P-20-S-1 were highly resistant to smut (no more than 4% smut at any one locations) across locations (Report of the 1979 IPMSN, PMPS 3001).

6.7 Development of Smut Resistance:-

In an attempt to rapidly build-up high levels of smut resistance, the lines identified as apparently less susceptible to smut in the 1977 screening were intermated in the 1977-78 post rainy season. F₁ progenies were tested during the 1978 and the F₂ progenies were screened during the 1979 rainy season. Of 117 F₂ populations screened, 6 were smut-free, 87

populations developed smut in the range of 0.1 to 5%, and only 2 populations had more than 20% smut. Smut reactions of individual entries are presented in Appendices XXXI-XXXII. About 400 smut-free single heads were selected for testing as F₃ families in the 1980 rainy season.

6.3 Utilization of smut resistance

Smut resistance sources are being utilized in various ways in the breeding program.

- i) - two smut resistant lines were crossed with 27 agronomic elite lines by Dr. B.S. Talukdar in the 1977-78 post rainy season and 50 F₁ lines tested in the 1978 rainy season and F₂ populations were screened during the 1979 rainy season. Of 50 F₂ populations, 1 was smut-free and 44 populations had smut in the range of 0.1 to 10% and only 1 population had more than 20% smut. The smut reactions of individual populations are presented in Appendix-XXXIII. More than 100 smut-free single heads were selected for testing as F₃ lines as head-to-row progenies.
- ii) - On the 3ms-lines 90 test crosses made by Dr. B.S. Talukdar with smut resistant lines to test their potential as pollinators. These test crosses will be screened during the 1980 rainy season.
- iii) - Smut resistant composite populations formed by Dr. S.C. Gupta with 37 smut less susceptible lines and progenies will be screened in the 1980 rainy season.
- iv) - F₂ populations from crosses between smut resistant and a high tillering, and dwarf line (made by Dr. K. Anand Kumar) will be screened during the 1980 rainy season.

Table 28. Smut reactions of 274 West African germplasm lines in the Initial Smut Screen-A at Hissar during the 1979 rainy season.

<u>Smut severity(%) class</u>	<u>No. of entries</u>	<u>% of entries</u>
0	75	27.4
0.1 to 1.0	50	18.2
1.1 to 5.0	84	30.6
5.1 to 10.0	35	12.8
10.1 to 20.0	22	8.1
>20	8	2.9

Table 29. Smut reactions of 85 West African germplasm lines (Clement's groupings) in the Initial Smut Screen-B at Hissar during the 1979 rainy season

<u>Smut severity (%) class</u>	<u>No. of entries</u>	<u>% of entries</u>
0	18	21.2
0.1 to 1.0	28	32.9
1.1 to 5.0	25	29.4
5.1 to 10.0	7	8.2
10.1 to 20.0	5	5.9
>20	2	2.3

Table 30. Smut reactions of 654 Upper Volta selections in the Initial Smut Screen-C at Hissar during the 1979 rainy season

<u>Smut severity (%) range</u>	<u>No. of entries</u>	<u>% of entries</u>
0	48	7.3
0.1 to 1.0	110	16.8
1.1 to 5.0	232	35.5
5.1 to 10.0	143	21.9
10.1 to 20.0	94	14.4
>20	27	4.1

Table 31. Smut reactions of ICRI SAT breeding lines in the Initial Smut Screen-D at Hissar during the 1979 rainy season

Breeding trials	No. of entries	<u>No. of entries in the Smut severity (%) range</u>					
		0	0.1-1.0	1.1-5.0	5.1-10.0	10.1-20.0	>20
Inbreds	23	6	5	4	4	3	1
PMHT-I	27	0	0	0	0	5	22
PMHT-I-parents	25	0	1	5	8	5	6
IPMAT-5	21	0	1	3	3	5	9
MS lines	3	0	0	0	0	0	3
Total	99	6	7	12	15	18	41

Table 32. Smut reactions of 54 entry Advanced screening-A during the 1979 rainy season at Hissar

Smut severity (%) class	No. of entries	% of entries
0	4	7.4
0.1 to 1.0	25	46.3
1.1 to 5.0	13	24.1
5.1 to 10.0	7	13.0
10.1 to 20.0	5	9.2
>20	0	0.0

Table 33. Smut reactions of 525 entry Advanced Screening-B at Hissar during the 1979 rainy season

Smut severity (%) class	No. of entries	% of entries
0	104	19.8
0.1 to 1.0	155	29.5
1.1 to 5.0	149	28.5
5.1 to 10.0	51	9.7
10.1 to 20.0	43	9.1
>20	13	3.4

Table 34. Smut reactions of 211 entry Advanced screening-C during the rainy season 1979 at Hissar

Smut severity (%) class	No. of entries	% of entries
0	53	27.5
0.1 to 1.0	59	28.0
1.1 to 5.0	43	20.4
5.1 to 10.0	25	11.3
10.1 to 20.0	13	8.5
>20	3	3.8

Table 35. Smut reactions and days to 75 percent flowering (DTF) of 23 entry Pearl Millet Smut Nursery (PMSN) during the 1979 rainy season at Hissar

Entry No.	Pedigree	DTF ^{a/}	Smut severity (%)	
			Mean ^{b/}	Range
1	EB 80-1-1-S-5	67	0	0-0
2	J 797-1-S-3	57	0	0-0
3	EB 213-1-S-2	65	0	0-0
4	EB 137-1-2-S-3	64	0	0-0
5	EBS 46-1-2-S-2	50	0	0-0
6	EDS 70-1-S-4	53	<1	0-5
7	WC FS 151-S-1	62	<1	0-2
8	J 2018-2-S-1	65	<1	0-5
9	EB 15-1-S-3-1	65	1	0-6
10	EB 237-2-S-3	61	1	0-5
11	IP 2789-S-2	59	1	0-10
12	EB 237-3-4-S-1	62	1	0-15
13	EB 239-1-1-S-2	55	1	0-15
14	EB 58-3-S-2	63	1	0-20
15	EB 170-2-S-4	61	1	0-25
16	WC FS 178-S-2	52	1	0-15
17	EB 106-2-1-S-6	57	2	0-25
18	EB 106-2-1-S-5	63	2	0-35
19	EB 7-2-3-S-1	63	2	0-20
20	MC FS 179-S-1	59	2	0-20
21	EBS 87-2-2-S-1	60	3	0-35
22	NEP 588-5690-S-6	63	3	0-30
23	MC FS 188-S-1	52	3	0-40
24	700479-S-2	60	4	0-20
25	J 703-1-S-1	60	4	0-65
26	WC FS 346-S-3	57	5	0-25
27	WC FS 308-S-3	56	5	0-50
28	EBS 137-3-S-1	59	9	0-50
	BJ 104 Check	53	34	5-80
	ICH 105 Check	54	37	5-90

^{a/} mean of 2 replications

^{b/} mean of 40 heads in 2 replications

Appendix I

Ergot and smut reactions, and days to 75 percent flowering (DTF) of
284 West African germplasm lines during the 1979 rainy season

Pedigree	TF	At ICRISAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-347	64	13	2
P-303	54	17	15
P-2607	54	18	1
P-2601	64	18	0
P-281	59	20	5
P-2616	59	24	7
P-2827	59	26	7
P-312	59	27	6
P-339	64	27	2
P-2614	59	29	0
P-2918	54	30	3
P-2720	57	30	.1
P-2600	55	30	<1
P-497	54	31	2
P-2624	59	31	1
P-491	92	31	0
P-2620	59	32	15
P-294	64	32	15
P-2593	57	32	<1
P-2832	54	33	<1
P-2731	54	33	2
P-1534	59	33	1
P-2641	57	33	17
P-311	54	33	6
P-342	64	34	2
P-458	55	34	<1
P-423	88	34	0
P-513	54	34	0
P-346	64	35	5
P-2582	51	35	4
P-2917	64	35	12
P-455	85	36	0
P-2926	54	36	3
P-2847	57	36	8
P-120	92	36	0

Contd....

Pedigree	TF	At ICRISAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-2719	54	37	<1
P-2623	57	37	3
P-336	59	37	14
P-1561	80	37	1
P-285	68	37	<1
P-1525	78	37	4
P-2630	59	38	0
P-2819	78	38	
P-1526	78	38	4
P-2891	57	39	3
P-2766	59	39	7
P-386	84	39	0
P-2789	57	40	7
P-1490	57	40	1
P-2704	59	40	2
P-1644	78	40	7
P-293	64	40	1
P-17	92	40	0
P-1418	59	40	1
P-1521	59	40	3
P-2808	57	41	2
P-2681	57	41	16
P-2915	59	41	8
P-306	64	41	<1
P-1619	78	41	3
P-338	64	41	7
P-1467	62	41	8
P-2879	57	41	11
P-1468	59	42	3
P-2723	61	42	1
P-2640	54	42	1
P-1509	59	42	4
P-1414	66	42	1
P-2730	64	42	0
P-2629	59	43	6

Contd.....

Pedigree	TF	At ICRISAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-2882	78	43	-
P-419	92	43	0
P-2777	57	43	5
P-250	54	44	1
P-2840	57	44	5
P-2642	54	44	21
P-2797	66	44	4
P-2806	54	44	3
P-2599	55	44	<1
P-2745	54	45	2
P-80	92	45	0
P-2848	59	45	2
P-119	92	45	0
P-1522	59	45	2
P-2929	64	45	14
P-2699	61	45	4
P-355	78	45	20
P-348	67	45	<1
P-2920	54	45	7
P-2702	57	46	2
P-1496	59	46	0
P-2863	59	46	3
P-345	67	46	13
P-1565	80	46	0
P-384	92	46	0
P-2887	86	47	0
P-1596	80	47	0
P-2865	57	47	2
P-2710	44	47	5
P-2631	54	47	1
P-2625	59	48	7
P-1433	59	48	1
P-1646	78	48	-
P-2904	64	48	-
P-1485	57	48	<1

Contd....

Pedigree	DTF	At ICRISAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-2610	64	40	<1
P-472	55	40	0
P-2652	59	40	1
P-81	92	40	1
P-2614	51	49	-
P-2660	61	49	<1
P-1507	54	49	2
P-2663	59	49	<1
P-2692	81	49	0
P-1559	60	49	2
P-1513	64	50	2
P-2601	54	50	5
P-387	84	50	0
P-534	88	50	14
P-1533	59	50	4
P-289	64	50	<1
P-2805	59	50	2
P-1553	55	50	0
P-2654	64	50	5
P-30	92	51	0
P-1552	64	51	0
P-2686	44	51	2
P-2873	59	51	2
P-2707	57	52	5
P-392	92	52	0
P-2894	59	52	<1
P-1444	67	53	11
P-2867	57	53	1
P-1529	73	53	-
P-1632	70	53	0
P-83	87	53	0
P-1421	73	53	1
P-1621	81	53	5
P-1616	73	53	0
P-1551	75	53	0

Contd.....

Pedigree	DTF	At ICPI SAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-400	55	53	2
P-2772	61	53	2
P-511	71	53	2
P-2906	64	54	0
P-1428	66	54	1
P-2768	68	54	6
P-2735	57	54	0
P-2857	61	54	1
P-2791	64	54	2
P-2712	64	54	0
P-2595	48	55	1
P-2776	64	55	1
P-1541	57	55	3
P-412	92	55	2
P-2743	59	55	1
P-1487	57	55	7
P-2762	57	55	0
P-1594	59	56	0
P-2647	57	56	1
P-471	88	56	2
P-2824	54	56	1
P-2320	64	56	0
P-1427	59	56	2
P-2826	54	57	2
P-362	76	57	4
P-2866	54	57	8
P-2818	61	57	25
P-1566	66	57	9
P-2837	78	57	-
P-1416	54	57	3
P-2780	61	57	6
P-1397	57	58	<1
P-1302	57	58	4
P-309	76	59	12
P-2899	73	59	0

Contd....

Pedigree	At ICRI SAT Center		At Hissar
	DTF	Ergot sev. ^{a/} (%)	Smut sev. ^b (%)
P-1411	64	50	7
P-2946	64	50	0
P-1447	64	50	2
P-1588	60	50	-
P-2911	59	50	27
P-1530	78	50	0
P-2969	61	60	2
P-2871	78	60	0
P-1448	64	60	17
P-1623	76	60	2
P-2742	57	60	2
P-2828	54	60	0
P-88	80	60	0
P-2825	54	60	1
P-1422	59	61	5
P-2615	64	61	0
P-441	92	61	0
P-2949	71	61	0
P-359	78	61	0
P-2727	64	61	<1
P-2706	64	61	3
P-2669	59	61	1
P-2874	54	62	<1
P-494	54	62	2
P-2660	59	62	8
P-2839	54	62	17
P-1493	59	62	4
P-1409	71	62	0
P-1630	78	63	<1
P-1434	62	63	3
P-2586	54	63	<1
P-144	54	64	26
P-2875	61	64	0
P-2849	57	64	1
P-483	55	64	0

Contd. . .

Pedigree	DTF	At ICRISAT Center	
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-2668	64	64	<1
P-2877	61	64	1
P-454	68	64	0
P-2795	57	64	5
P-1542	54	64	<1
P-2876	57	65	11
P-417	83	65	<1
P-1629	78	65	0
P-1452	62	65	2
P-2743	54	65	15
P-1545	73	65	3
P-1590	80	66	0
P-20	92	66	0
P-2613	57	66	7
P-2751	54	66	<1
P-532	55	66	1
P-2741	76	66	0
P-1625	71	67	0
P-420	92	67	1
P-469	88	67	<1
P-380	73	67	0
P-1636	76	68	22
P-35	80	68	12
P-2858	54	68	<1
P-425	88	68	0
P-450	88	68	0
P-1497	57	68	4
P-2687	81	69	0
P-413	88	69	0
P-1483	84	69	0
P-1627	76	69	1
P-2770	71	69	2
P-1562	80	69	<1
P-499	54	69	4
P-1626	76	70	0

Contd.

Pedigree	DTF	At ICRISAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-2755	59	70	11
PC1453	64	70	3
P-463	92	71	0
P-466	84	71	6
P-451	88	71	<1
P-1568	78	72	-
P-1445	71	72	2
P-1451	67	72	7
P-442	88	72	0
P-2889	84	72	-
P-2718	64	72	1
P-2862	57	73	5
P-1595	79	73	5
P-2831	78	73	-
P-2725	76	74	<1
P-2829	76	75	-
P-2668	59	75	<1
P-1516	84	76	-
P-453	88	76	0
P-1601	80	77	0
P-448	88	77	1
P-492	54	77	15
P-1540	78	77	5
P-1587	80	78	-
P-1599	80	78	0
P-414	84	78	8
P-1633	76	79	2
P-1503	84	79	6
P-2758	57	79	0
P-1567	76	80	0
P-1491	84	82	0
P-594	80	82	-
P-1600	80	82	0
P-1569	80	83	18
P-1523	78	83	-

Cont d. . . .

Pedigree	DTF	At ICRISAT Center	At Hissar
		Ergot sev. ^{a/} (%)	Smut sev. ^{b/} (%)
P-1606	81	83	0
P-1544	78	83	0
P-1489	81	85	0
P-1532	78	86	6
ICH 105	Check	47	29
BJ 104	Check	47	22

^{a/} Mean of 10 bagged-inoculated heads

^{b/} Mean of 5-10 inoculated-bagged heads in smut nursery at Hissar

- Not recorded

Appendix II

Ergot and smut reactions, and days to 75 percent flowering (DTF) of 84 West African germplasm (clement's group) entries during the 1979 rainy season.

Entry No.	Pedigree	TF	At ICRISAT Center	At Hissar
			Ergot sev. (%) ^a /	Smut sev. (%)
1	P - 449	59	17	1
2	P - 1524	55	18	1
3	P - 2677	71	23	3
4	P - 2583	57	25	1
5	P - 2812	78	26	0
6	P - 2594	54	27	<1
7	P - 354	54	29	<1
8	P - 221	61	31	0
9	P - 446	54	33	<1
10	P - 2584	54	35	2
11	P - 213	59	35	0
12	P - 427	61	37	0
13	P - 1546	61	38	1
14	P - 1520	61	39	0
15	P - 1538	59	40	<1
16	P - 1654	61	40	<1
17	P - 1499	59	41	10
18	P - 1498	54	42	0
19	P - 1410	55	43	19
20	P - 1394	59	44	8
21	P - 2602	59	44	1
22	P - 2691	59	46	0
23	P - 2950	68	46	1
24	P - 282	61	46	1
25	P - 2619	55	46	1
26	P - 1527	57	46	4
27	P - 2598	54	46	<1
28	P - 1500	57	46	1
29	P - 2703	64	47	<1
30	P - 2622	57	47	1
31	P - 2633	59	47	<1
32	P - 23	74	47	0
33	P - 2612	64	48	3
34	P - 1430	57	50	2
35	P - 1555	59	50	2

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%) ^{a/}	Smut sev. (%) ^{b/}	Ergot sev. (%) ^{a/}	Smut sev. (%) ^{b/}
36	P - 353	71	52	2		
37	P - 1423	61	52	<1		
38	P - 2759	61	52	10		
39	P - 1557	61	52	1		
40	P - 509	85	52	0		
41	P - 1381	61	54	11		
42	P - 2888	57	54	1		
43	P - 2697	64	55	1		
44	P - 508	57	55	0		
45	P - 11	69	56	0		
46	P - 2627	59	56	<1		
47	P - 2613	64	56	1		
48	P - 2724	81	56	-		
49	P - 2671	64	57	0		
50	P - 1517	61	58	<1		
51	P - 1473	61	58	8		
52	P - 1454	64	59	2		
53	P - 2678	68	59	2		
54	P - 255	69	59	1		
55	P - 1494	61	60	25		
56	P - 1404	59	60	2		
57	P - 1450	61	62	0		
58	P - 1531	61	62	1		
59	P - 2855	66	62	1		
60	P - 2646	59	63	<1		
61	P - 1489	57	63	4		
62	P - 262	61	64	0		
63	P - 1431	61	64	14		
64	P - 2661	66	64	<1		
65	P - 2868	61	67	1		
66	P - 2883	64	67	1		
67	P - 12	73	67	<1		
68	P - 2609	73	68	1		
69	P - 2836	59	68	5		
70	P - 357	81	68	0		
71	P - 2670	64	68	0		
72	P - 2813	66	68	5		
73	P - 2664	68	68	0		
74	P - 2897	71	69	3		
75	P - 2861	67	71	4		

Entry No.	Pedigree	DTF	At ICRI SAT Center	At Hissar
			Ergot sev. (%) ^{a/}	Smut sev. (%) ^{b/}
76	P - 2945	68	72	0
77	P - 2955	68	74	20
78	P - 2893	68	74	1
79	P - 1495	54	74	1
80	P - 2648	54	77	3
81	P - 2841	57	79	9
82	P - 1476	59	80	7
83	P - 452	71	82	2
84	P - 375	76	83	8
	ICH-105 Check	48	89	22
	BJ-104 Check	45	93	30

^{a/} Mean of 10 bagged - inoculated heads

^{b/} Mean of 10 inoculated - bagged heads in smut nursery at Hissar

Appendix III

Ergot and Smut reactions and days to 75 percent flowering (DTF) of 651 Upper Volta selections in the initial screenings during the 1979 rainy season.

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
1	F ₄ -FC-1173-1-7	51	1	1-2	0	0-0
2	F ₄ -FC-1538-4-1	61	2	1-5	<1	0-1
3	WC-1-3	59	5	0-25	1	0-2
4	F ₄ -FC-1173-1-6	51	7	1-15	<1	0-2
5	MLC-SN-75-1-3	44	8	0-25	0	0-0
6	F ₄ -FC-1173-1-1	48	8	1-25	1	0-5
7	WC-19-3	48	12	1-90	3	0-15
8	MLC-SN-20-1-3	51	12	1-50	5	0-20
9	MLC-SN-317-2-1	51	13	0-50	10	1-30
10	WC-49-3	48	13	1-50	3	0-5
11	LC-SN-265-2-1	51	14	1-45	5	0-18
12	LC-SN-85-4-3	54	16	5-50	17	0-60
13	LC-SN-282-2-1	54	17	2-40	-	-
14	MLC-SN-3 85-1-2	48	17	2-35	8	0-20
15	F ₄ -FC-1139-1-3	64	18	0-70	<1	0-2
16	MLC-SN-198-1-2	54	19	0-80	0	0-0
17	MLC-SN-75-1-10	51	19	1-60	2	0-10
18	WC-20-1	57	20	5-50	2	0-15
19	LC-SN-31-4-3	51	20	0-55	1	0-5
20	LC-SN-87-3-7	57	21	1-60	5	0-30
21	MLC-SN-75-1-4	51	21	2-55	0	0-0
22	WC-20-2	64	21	0-75	<1	0-1
23	MLC-SN-181-3-1	48	22	2-45	6	0-40
24	LC-SN-114-1-6	57	22	0-50	0	0-0
25	LC-SN-31-2-1	46	23	1-60	3	0-15
26	MLC-SN-53-1-1	44	23	2-75	8	0-25
27	MLC-SN-75-1-6	51	23	1-40	0	0-0
28	WC-19-4	48	23	2-95	25	10-60
29	LC-SN-295-2-1	54	25	5-90	3	0-20
30	LC-SN-324-3-2	51	25	0-90	2	0-8
31	LC-SN-377-1-3	51	26	1-60	3	0-10
32	MLC-SN-75-1-8	54	26	0-70	<1	0-2
33	WC-20-3	57	27	2-75	3	0-15
34	NML-6 .4-12-2-3	57	27	1-80	12	2-35
35	F ₄ -FC-1101-1-1	57	28	2-85	1	0-10

Contd....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^a /	Range	Mean ^b /	Range
36	LC-SN-324-1-2	46	28	1-99	4	0-15
37	MLC-SN-132-2-1	51	29	5-75	4	0-25
38	F ₄ -FC-1173-2-7	57	29	10-50	17	0-75
39	WC-45-1	54	30	1-75	1	0-6
40	MLC-SN-317-1-2	44	30	1-75	5	0-25
41	WC-26-2	51	31	10-50	14	0-60
42	LC-SN-88-2-3	54	31	5-65	5	0-25
43	LC-SN-113-3-3	51	31	1-75	<1	0-1
44	F ₄ -FC-1139-1-1	57	31	1-50	1	0-5
45	F ₄ -FC-1474-2-2	48	31	5-75	1	0-4
46	MLC-SN-112-1-2	46	32	2-70	0	0-0
47	WC-49-4	48	32	2-75	1	0-5
48	F ₄ -FC-1285-8-5	57	32	1-80	6	0-50
49	WC-1-1	57	32	5-50	<1	0-1
50	MLC-SN-20-1-1	51	32	2-90	1	0-5
51	MLC-SN-107-1-1	57	32	2-90	6	0-20
52	LC-SN-10-1-1	54	32	2-75	1	0-5
53	F ₄ -FC-1312-1-4	61	32	10-50	3	0-10
54	LC-SN-87-3-2	57	33	0-85	11	0-65
55	MLC-SN-112-1-1	54	34	2-80	1	0-5
56	F ₄ -FC-1173-1-1	53	34	10-80	7	0-25
57	LC-SN-282-4-2	54	35	2-95	4	0-15
58	K-76-Senegal-C Composite	51	35	0-90	0	0-0
59	LC-SN-87-3-4	59	35	5-95	1	0-2
60	WC-49-1	51	35	5-80	3	0-20
61	F ₄ -FC-1538-3-4	46	35	2-90	7	0-60
62	LC-SN-13-2-1	51	35	10-65	1	0-5
63	LC-SN-13-3-1	51	35	5-85	1	0-2
64	LC-SN-295-3-3	54	36	1-90	4	0-20
65	MLC-SN-183-2-2	54	36	5-75	27	5-80
66	F ₄ -FC-1225-6-2	54	36	1-55	<1	0-2
67	F ₄ -FC-1285-7-1	51	36	15-60	0	0-0
68	F ₄ -FC-1139-1-1	48	37	1-60	2	0-5
69	LC-SN-23-1-1	54	37	1-75	3	0-10
70	F ₄ -FC-1173-1-3	51	37	1-90	<1	0-1

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^a /	Range	Mean ^b /	Range
71	WC-49-5	51	37	1-90	1	0-6
72	F4-FC-1173-1-1	54	37	5-80	<1	0-1
73	MLC-SN-181-1-1	46	37	5-80	4	0-15
74	F4-FC-1173-1-4	51	37	2-65	1	0-10
75	WC-20-4	57	33	5-90	2	0-20
76	MLC-SN-396-2	54	38	10-70	5	0-15
77	SC-SN-430-3-4	64	39	5-80	0	0-0
78	WC-19-2	44	39	10-75	8	0-30
79	MLC-SN-92-1-1	48	39	5-90	0	0-0
80	LC-SN-31-1-1	51	39	2-80	3	0-10
81	MLC-SN-29-3-1	44	39	2-95	9	0-40
82	LC-SN-114-1-4	59	39	5-80	-	-
83	F4-FC-1173-1-1	53	39	10-80	2	0-10
84	LC-SN-31-3-3	51	39	10-60	3	0-10
85	F4-FC-1139-1-1	54	40	1-90	1	0-5
86	LC-SN-168-1-2	51	40	5-90	1	0-5
87	MLC-SN-75-1-11	48	40	5-90	1	0-5
88	MLC-SN-202-1-2	54	40	15-70	5	0-25
89	F4-FC-1139-1-1	51	40	1-75	3	0-10
90	WL-4-1-2	51	40	1-95	4	0-15
91	F4-FC-1173-1-1	44	40	1-80	4	1-10
92	F4-FC-1474-2-1	44	40	0-98	<1	0-1
93	F4-FC-1173-1-7	48	41	1-80	<1	0-1
94	F4-FC-1258-5-5	51	41	2-85	<1	0-1
95	F4-FC-1056-1-1	48	41	1-98	2	0-10
96	F4-FC-1536-3-6	51	41	0-90	0	0-0
97	MLC-SN-103-2-3	59	41	15-90	5	0-20
98	MLC-SN-430-1-1	46	41	5-90	<1	0-2
99	LC-SN-31-4-1	54	42	5-75	3	0-10
100	LC-SN-315-1-3	59	42	5-100	5	0-35
101	F4-FC-1538-3-3	51	42	5-80	3	0-10
102	F4-FC-1258-5-3	54	42	15-75	1	0-5
103	LC-SN-281-4-1	51	42	5-70	7	0-20
104	MLC-SN-183-1-1	54	42	5-80	3	0-30
105	F4-FC-1139-1-1	48	43	1-80	2	0-5

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
106	F4-FC-1312-1-7	41	43	2-60	6	1-20
107	LC-SN-346-1-2	54	43	2-80	1	0-3
108	LC-SN-113-2-1	54	43	1-95	11	2-50
109	LC-SN-380-4-1	44	43	0-95	3	0-7
110	LC-SN-449-1-1	59	43	15-70	<1	0-2
111	LC-SN-377-3-2	57	43	10-80	9	0-0
112	F4-FC-1139-1-1	54	43	1-90	11	5-25
113	LC-SN-55-3-2	54	43	1-90	3	0-20
114	LC-SN-435-1-3	54	43	1-90	6	0-25
115	MLC-SN-29-2-4	54	43	1-90	12	2-35
116	F4-FC-1312-1-5	64	43	15-70	6	0-25
117	F4-FC-1173-1-5	48	43	15-75	<1	0-1
118	MLC-SN-202-1-3	54	43	15-75	8	0-25
119	F4-FC-1173	48	44	1-90	10	0-40
120	F4-FC-1301-3-2	57	44	2-75	<1	0-1
121	MLC-SN-202-1-1	51	44	2-80	4	0-15
122	MLC-SN-103-1-2	44	44	0-100	6	1-20
123	F4-FC-1139-1-1	54	44	1-70	1	-
124	MLC-SN-103-2-1	51	44	2-90	1	0-7
125	LC-SN-113-3-1	54	44	2-100	4	0-30
126	MLC-SN-12-2-1	44	44	0-98	-	-
127	SC-SN-430-3-3	44	44	10-90	<1	0-1
128	LC-SN-55-3-1	51	44	20-90	6	0-35
129	MLC-SN-29-2-6	41	44	5-100	4	0-25
130	F4-FC-1285-3-3	54	45	20-75	<1	0-2
131	F4-FC-1139-1-1	54	45	25-60	1	0-1
132	LC-SN-85-4-2	48	45	2-90	4	0-20
133	MLC-SN-430-1-3	57	45	5-70	10	1-25
134	F4-FC-1045-2-1	46	45	20-90	<1	0-1
135	LC-SN-23-2-2	54	45	5-100	4	0-20
136	F4-FC-1354-1-1	51	45	1-98	7	1-25
137	MLC-SN-358-1	46	45	15-80	46	10-85
138	LC-SN-377-4-2	51	46	1-90	2	0-6
139	MLC-SN-9-1-1	57	46	1-80	3	0-10
140	LC-SN-435-4-1	48	46	10-90	1	0-5

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
141	MLC-SN-181-1-2	46	46	5-80	10	0-25
142	MLC-SN-396-2-4	57	46	5-70	12	1-25
143	F4-FC-1234-3-1	51	46	15-85	7	0-50
144	MLC-SN-75-1-9	51	46	5-90	1	0-1
145	MLC-SN-31-1-1	51	46	5-100	6	0-20
146	MLC-SN-6-2-2	48	46	10-70	9	0-30
147	MLC-SN-318-2-2	46	46	10-85	1	0-5
148	LC-SN-324-4-1	57	46	5-100	3	0-20
149	F4-FC-1173-1-6	48	46	15-95	2	0-15
150	FS-FC-3-4-1	54	47	1-80	5	0-20
151	MLC-SN-114-3-3	54	47	1-90	2	0-10
152	LC-SN-114-2-1	54	47	10-98	3	0-10
153	MLC-SN-132-2-2	45	47	10-90	15	0-60
154	MLC-SN-19-2-2	51	47	25-90	<1	0-1
155	F4-FC-1173-2-1	51	47	10-80	1	0-8
156	F4-FC-1308-1-1	54	47	1-98	0	0-0
157	LC-SN-114-4-1	54	47	1-95	<1	0-2
158	MLC-SN-20-1-2 (OP)	54	47	1-98	5	1-19
159	LC-SN-252-1-2	48	47	1-100	<	0-2
160	F4-FC-1403-1-1	51	47	1-100	9	0-60
161	MLC-SN-358-2-1	48	47	5-90	1	0-5
162	WC-89-2-3	54	47	5-95	12	0-40
163	LC-SN-281-4-3	51	47	5-75	2	0-10
164	MLC-SN-75-1-2	41	47	5-80	0	0-0
165	F4-FC-1045-2-3	54	48	2-80	6	1-2
166	LC-SN-315-1-6	54	48	15-90	9	0-25
167	LC-SN-386-1-2	44	48	15-90	4	0-10
168	F4-FC-1107-2	48	48	20-75	22	0-60
169	F4-FC-1285-8-2	54	48	5-90	<1	0-1
170	LC-SN-31-4-2	48	48	5-90	7	0-20
171	F4-FC-1045-2-2	48	48	1-90	9	0-25
172	LC-SN-430-1-3	60	48	15-90	1	0-5
173	F4-FC-1225-7-3	64	49	1-90	10	0-50
174	F4-FC-1291-2-1	41	49	2-85	6	0-30
175	LC-SN-114-1-3	54	49	15-95	1	0-5

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^a /	Range	Mean ^b /	Range
176	LC-SN-252-2-3	57	49	15-70	3	0-20
177	LC-SN-203-2-2	48	49	15-75	2	0-10
178	F4-FC-1463-1-4	51	49	25-75	1	0-1
179	LC-SN-377-4-3	46	49	1-90	2	0-5
180	LC-SN-112-1-1	44	49	1-98	3	0-15
181	F4-FC-1107-2	48	49	25-80	17	0-60
182	F4-FC-1173-1-3	48	49	2-90	2	0-10
183	LC-SN-435-5-1	59	49	25-75	3	0-25
184	F4-FC-1041-2-2	59	49	10-90	10	0-50
185	WC-29-7	44	49	0-95	4	0-20
186	F4-FC-1225-6-3	59	49	25-70	25	1-50
187	LC-SN-114-3-2	46	49	10-95	<1	0-1
188	LC-SN-114-1-3	54	49	2-98	2	1-6
189	LC-SN-295-3-1	54	50	2-90	9	0-60
190	F4-FC-1403-3-2	51	50	2-80	<1	0-1
191	LC-SN-274-1-2	57	50	15-85	2	0-10
192	LC-SN-13-2-2	44	50	5-95	17	0-50
193	MLC-SN-254-1-1	57	50	10-90	9	0-50
194	LC-SN-377-2-2	59	50	15-90	1	0-5
195	F4-FC-1181-1-1	51	50	1-90	11	0-65
196	F4-FC-1107-2	51	50	1-90	25	0-65
197	F4-FC-1536-3-5	48	50	5-98	6	0-25
198	MLC-SN-422-1-2	54	50	20-75	8	0-50
199	F4-FC-1285-2-6	54	50	20-90	3	0-25
200	F4-FC-1234-3-2	59	50	15-90	5	0-20
201	LC-SN-281-4-7	51	50	15-80	3	0-25
202	F4-FC-1173-1-8	48	50	20-75	<1	0-1
203	MLC-SN-22-3-2	54	50	5-95	3	0-15
204	F4-FC-1107-1-3	54	51	15-75	3	0-20
205	LC-SN-89-1-2	54	51	1-90	13	0-50
206	F4-FC-1285-8-6	51	51	0-85	7	1-25
207	MLC-SN-92-1-4	51	51	1-95	1	0-5
208	LC-SN-265-4-1	51	51	2-90	<1	0-1
209	LC-SN-72-1-1	51	51	0-95	9	0-35
210	F4-FC-1173-2-3	51	51	15-90	2	0-5

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^a /	Range	Mean ^b /	Range
211	MLC-SN-444-2-3	44	51	25-80	18	0-60
212	NML-6-4-12-2-6	51	51	2-98	34	4-65
213	LC-SN-303-1-3	59	51	10-90	0	0-0
214	LC-SN-435-3-1	51	51	10-90	2	0-5
215	LC-SN-295-4-4	44	51	15-90	5	0-20
216	LC-SN-377-2-1	57	51	10-75	<1	0-2
217	F4-FC-1312-1-2	48	51	30-80	11	0-35
218	MLC-SN-29-3-3	46	51	5-100	2	0-10
219	MLC-SN-151-1-1	44	51	0-100	2	0-15
220	LC-SN-114-4-4	46	51	2-98	1	0-5
221	LC-SN-272-1-1	57	51	25-70	8	0-30
222	MLC-SN-103-2-2	48	51	5-90	1	0-5
223	WC-26-1	44	51	5-90	3	0-15
224	F4-FC-1107-2	48	52	1-85	3	0-10
225	MLC-SN-198-1-3	46	52	0-90	1	0-5
226	F4-FC-1547-2-1	46	52	2-95	<1	0-1
227	LC-SN-20-1-1	48	52	2-95	2	0-5
228	MLC-SN-113-1-1	54	52	20-80	0	0-0
229	F4-FC-1225-7-2	57	52	35-90	<1	0-1
230	LC-SN-377-1-2	57	52	10-80	1	0-5
231	MLC-SN-114-3-6	48	52	1-90	6	0-25
232	WC-10-1	44	52	3-95	11	0-35
233	F4-FC-1536-3-1	48	52	1-98	11	0-40
234	F4-FC-1536-3-2	46	52	5-95	2	0-5
235	LC-SN-87-3-3	57	52	30-75	<1	0-1
236	MLC-SN-75-1-1	44	52	10-80	2	0-10
237	F4-FC-1312-1-1	51	53	1-90	3	0-15
238	LC-SN-55-3-4	54	53	35-80	2	0-15
239	LC-SN-13-4-2	54	53	0-100	4	0-25
240	WC-1-2	59	53	5-90	11	2-25
241	LC-SN-322-3-2	48	53	15-90	6	0-35
242	4-700-651-ICI-5433-5	51	53	25-80	23	0-60
243	F4-FC-13-1-3-1	51	53	1-90	0	0-0
244	F4-FC-1173-1-7	48	53	1-90	3	0-15
245	LC-SN-23-3-1	57	53	10-95	12	0-50

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Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
246	F4-FC-1463-1-2	48	53	20-75	3	0-25
247	LC-SN-107-1-1	51	53	15-95	1	0-2
248	LC-SN-114-1-8	54	54	2-95	0	0-0
249	F4-FC-1045-2-1	44	54	35-90	9	1-25
250	LC-SN-107-2-1	51	54	15-90	<1	0-1
251	LC-SN-430-3-2	44	54	20-95	1	0-2
252	F4-FC-1041-2-1	44	54	20-90	1	0-2
253	F4-FC-1173-2-2	48	54	10-90	5	0-10
254	LC-SN-284-3-1	51	54	15-95	2	0-10
255	WC-19-1	48	54	5-90	5	1-20
256	LC-SN-58-2-1	51	54	15-85	2	0-5
257	F4-FC-1145-1-1	44	54	1-90	6	0-30
258	F4-FC-1173-1-1	53	54	2-95	<1	0-1
259	F4-FC-1258-5-1	54	54	2-90	8	0-40
260	LC-SN-114-4-3	51	54	5-90	0	0-0
261	MLC-SN-183-2-3	46	54	10-90	1	0-5
262	F4-FC-1285-8-7	64	54	35-80	0	0-0
263	F4-FC-1538-3-2	54	54	20-95	3	0-20
264	LC-SN-377-3-3	57	54	25-90	4	0-25
265	LC-SN-168-1-1	57	54	5-95	<1	0-1
266	LC-SN-435-4-2	48	55	1-90	2	0-6
267	LC-SN-114-4-2	48	55	1-98	6	0-25
268	LC-SN-282-4-1	57	55	10-100	30	0-90
269	MLC-SN-97-1-2	51	55	1-90	4	0-20
270	F4-FC-1173-1-2	54	55	1-95	6	0-15
271	MLC-SN-200-1-1	51	55	2-80	4	0-20
272	MLC-SN-114-3-4	45	55	2-100	3	0-20
273	F4-FC-1312-1-3	51	55	2-98	4	0-15
274	F4-FC-1565-3-2	48	55	1-98	9	0-35
275	LC-SN-281-4-4	48	55	15-90	16	0-40
276	F4-FC-1258-5-4	59	55	15-75	3	0-35
277	WC-9-1	54	55	20-90	10	0-50
278	F4-FC-1139-1-1	51	55	10-90	4	0-11
279	MLC-SN-12-3-4	51	56	2-100	3	0-5
280	MLC-SN-97-1-9	48	56	5-90	1	0-5

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Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
281	LC-SN-113-3-1	46	56	10-90	2	0-20
282	MLC-SN-112-2-3	51	56	0-90	8	-
283	MLC-SN-412-2-2	54	56	5-95	6	0-30
284	F4-FC-1291-2-2	44	56	20-100	8	0-50
285	MLC-SN-107-1-2	51	56	10-90	7	0-25
286	F4-FC-1225-6-5	64	56	5-90	<1	0-1
287	MLC-SN-198-1-1	63	56	20-90	2	0-20
288	WC-22-2	48	56	5-85	7	0-60
239	F4-FC-1538-3-5	57	56	20-90	8	0-35
290	F4-FC-1536-3-3	51	57	10-90	3	0-10
291	LC-SN-75-2-2	51	57	5-100	2	0-10
292	LC-SN-315-1-4	51	57	25-100	11	0-50
293	F4-FC-1547-2-2	44	57	0-100	1	0-5
294	MLC-SN-29-3-2	51	57	10-90	6	0-25
295	F4-FC-1302-1-1	48	57	10-90	0	0-0
296	MLC-SN-29-2-5	48	57	1-90	1	0-6
297	LC-SN-265-1-1	57	57	25-98	0	0-0
298	LC-SN-249-2-2	48	57	5-90	3	0-15
299	MLC-SN-75-1-2	46	58	5-98	1	0-5
300	MLC-SN-12-3-1	54	58	2-90	5	0-20
301	F4-FC-1173-1-7	54	58	2-90	1	0-10
302	MLC-SN-20-1-2	54	58	20-98	1	0-2
303	MLC-SN-97-1-6	51	58	5-98	10	0-50
304	WC-23-1	51	58	5-90	3	0-10
305	LC-SN-314-1-2	48	58	10-90	0	0-0
306	LC-SN-85-4-1	51	58	1-100	10	0-50
307	MLC-SN-20-1-5	51	58	2-95	12	0-35
308	LC-SN-509-1-2	48	58	25-80	6	0-25
309	LC-SN-113-3-2	51	58	10-90	9	0-20
310	MLC-SN-463-2	51	58	5-95	<1	0-1
311	MLC-SN-3-1-1	54	58	5-100	2	0-6
312	F4-FC-1173-2-4	51	59	0-85	6	0-60
313	MLC-SN-92-1-1	44	59	10-100	<1	0-1
314	MLC-SN-189-1-1	54	59	5-95	24	0-60
315	MLC-SN-97-2-1	57	59	35-90	17	1-40

Contd.

Entry No.	Pedigree	At ICRISAT Center			At Hissar	
		DTF	Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
316	F4-FC-1285-2-2	54	59	20-85	1	0-5
317	MLC-SN-91-1-4	54	59	10-90	0	0-0
318	F4-FC-1173-1-7	54	59	2-90	0	0-0
319	MLC-SN-97-2-2	39	59	0-98	1	0-2
320	LC-SN-23-2-1	59	59	25-85	19	0-80
321	MLC-SN-324-1-1	48	59	5-95	9	0-35
322	F4-FC-1199-2-1	59	59	35-90	15	0-50
323	MLC-SN-435-6-1	48	59	10-90	6	0-35
324	F4-FC-1285-1-2	51	59	2-90	<1	0-1
325	F4-FC-1173-1-9	54	60	5-98	1	0-5
326	NML-6.4-12-2-2	51	60	10-100	3	0-10
327	LC-SN-380-4-2	51	60	10-90	7	1-20
328	F4-FC-1196-4-1	54	60	15-90	5	0-25
329	F4-FC-1045-2-1	46	60	15-95	4	0-20
330	F4-FC-1463-1-3	57	60	20-90	0	0-0
331	F4-FC-1296-1-1	51	60	10-90	6	0-50
332	LC-SN-281-4-2	46	60	15-85	3	0-25
333	WC-5-4	48	60	5-100	24	0-50
334	LC-SN-303-3-2	45	60	5-100	2	0-5
335	MLC-SN-358-2	51	60	35-80	4	0-10
336	F4-FC-1196-3-1	48	60	15-100	1	0-10
337	F4-FC-1285-9-5	51	60	30-95	0	0-0
338	MLC-SN-6-1-4	54	60	2-95	4	0-20
339	F4-FC-1536-3-4	54	60	10-95	0	0-0
340	LC-SN-435-1-2	61	60	35-90	-	--
341	MLC-SN-91-1-3	48	61	2-90	4	0-15
342	F4-FC-1225-6-1	54	61	1-100	<1	0-1
343	LC-SN-87-3-5	57	61	15-90	5	0-25
344	F4-FC-1045-2-1	41	61	20-100	4	0-20
345	WC-49-2	54	61	2-90	1	0-5
346	LC-SN-75-2-1	48	61	15-98	12	0-35
347	LC-SN-509-4-3	64	61	10-90	1	0-3
348	F4-FC-1436-4-1	48	61	20-90	2	1-6
349	F4-FC-1285-8-4	51	61	15-85	0	0-0
350	MLC-SN-317-1-1	46	62	0-98	6	0-25

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Entry No.	Pedigree	At ICRISAT Center			At Hissar	
		DTF	Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
351	MLC-SN-23-3-4	54	62	25-80	0	0-0
352	MLC-SN-444-5-1	48	62	10-90	1	0-1
353	LC-SN-114-1-9	51	62	15-100	2	0-20
354	MLC-SN-358-2-2	57	62	30-85	0	0-0
355	F4-FC-1308-1-2	48	62	15-100	5	0-35
356	F4-FC-1139-1-1	54	62	1-90	2	0-5
357	MLC-SN-444-2-2	46	62	2-90	12	0-50
358	WC-6-1	46	62	5-100	17	0-50
359	F4-FC-1252-4-2	59	62	10-95	7	0-35
360	LC-SN-435-2-1	46	62	25-90	<1	0-2
361	LC-SN-380-4-3	41	62	10-95	2	0-10
362	MLC-SN-463-1-2	51	62	10-95	7	0-15
363	LC-SN-107-2-2	54	63	1-95	10	0-25
364	F4-FC-1173-1-7	48	63	10-99	2	0-10
365	MLC-SN-358-2-3	48	63	1-100	15	1-35
366	MLC-SN-183-1-2	45	63	5-95	<1	0-2
367	F4-FC-1291-2-3	51	63	35-80	<1	0-2
368	F4-FC-1258-5-2	48	63	35-90	0	0-0
369	Ex Bornu (J2)	51	63	25-95	6	0-10
370	MLC-SN-112-1-5	51	63	35-90	0	0-0
371	LC-SN-85-3-2	51	63	10-95	4	0-30
372	F4-FC-1285-1-1	51	63	10-98	<1	0-1
373	LC-SN-89-1-1	57	63	35-90	1	0-5
374	WC-22-1	46	63	25-100	3	0-15
375	F4-FC-1302-1-3	51	63	10-90	4	0-25
376	F4-FC-1301-3-3	51	63	20-100	12	0-35
377	LC-SN-113-2-2	54	63	5-100	8	0-35
378	MLC-SN-358-2-4	45	63	5-100	30	1-70
379	F4-FC-1173-1-4	48	63	30-90	5	0-15
380	F4-FC-1312-1-6	59	63	25-95	1	0-6
381	MLC-SN-183-2-4	64	64	2-100	9	0-50
382	LC-SN-113-1-1	41	64	2-95	18	5-35
383	LC-SN-114-1-4	46	64	10-100	4	0-16
384	F4-FC-1403-4-1	57	64	10-98	6	2-10
385	WC-5-3	54	64	10-98	11	0-40

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Entry No.	Pedigree	At ICRI SAT Center			At Hissar		
		DTF	Ergot sev. (%)		Mean ^b	Smut sev. (%)	
			Mean ^a	Range		Mean ^b	Range
386	F4-FC-1285-7-3	51	64	20-95	8	0-65	
387	F4-FC-1536-1-1	57	64	2-98	16	0-40	
388	LC-SN-484-1-1	51	64	15-98	12	0-60	
389	F4-FC-1056-1-1	48	64	30-100	14	0-60	
390	MLC-SN-20-1-1	51	64	20-100	2	0-5	
391	LC-SN-315-2-2	44	64	10-100	4	0-20	
392	F4-FC-1285-7-2	57	64	15-90	11	0-70	
393	LC-SN-88-2-4	51	64	15-90	7	0-40	
394	LC-SN-13-3-2	48	64	35-99	2	0-10	
395	LC-SN-509-1-1	46	65	16-100	15	0-65	
396	LC-SN-324-3-3	51	65	2-100	0	0-0	
397	LC-SN-508-1-1	54	65	2-100	12	0-50	
398	LC-SN-87-3-1	63	65	45-90	0	0-0	
399	LC-SN-265-3-1	54	65	20-100	0	0-0	
400	MLC-SN-430-1-4	44	65	35-85	5	0-20	
401	MLC-SN-254-1-2	54	65	5-100	8	0-25	
402	MLC-SN-254-2-1	51	65	20-100	<1	0-1	
403	F4-FC-1101-1-1	48	65	30-90	6	0-20	
404	F4-FC-1565-3-1	46	65	10-95	6	0-20	
405	MLC-SN-22-3-1	46	65	2-100	8	0-25	
406	LC-SN-303-3-1	46	65	5-99	5	0-15	
407	F4-FC-1107-1-2	51	65	20-95	6	0-25	
408	MLC-SN-318-2-1	48	65	5-100	18	0-35	
409	F4-FC-1498-1-1	51	65	10-90	6	0-25	
410	F4-FC-1301-3-2	44	65	10-90	15	0-60	
411	LC-SN-295-4-2	46	65	25-95	6	0-10	
412	F4-FC-1464-1-3	51	65	35-95	4	0-20	
413	MLC-SN-396-2-2	51	66	35-85	10	0-40	
414	F4-FC-1436-4-3	46	66	25-98	4	0-15	
415	MLC-SN-6-1-3	51	66	15-99	1	0-5	
416	LC-SN-31-3-1	48	66	5-100	7	0-25	
417	F4-FC-1436-4-2	44	66	5-90	31	2-70	
418	LC-SN-88-2-2	57	66	30-90	10	0-50	
419	MLC-SN-97-1-1	46	66	5-100	7	0-20	
420	F4-FC-1182-1-1	48	66	10-95	3	0-10	

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Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
421	F4-FC-1463-1-5	48	66	5-95	5	0-20
422	F4-FC-1301-7-1	57	66	20-100	19	0-60
423	MLC-SN-92-1-3	51	66	5-100	10	0-50
424	F4-FC-1436-3-1	51	66	1-99	10	0-35
425	LC-SN-114-1-1	46	66	5-99	5	0-40
426	MLC-SN-358-2-5	48	66	30-90	5	0-15
427	F4-FC-1139-1-2	54	67	35-100	5	0-25
428	LC-SN-107-2-3	54	67	2-95	1	0-10
429	LC-SN-377-4-3	54	67	10-95	3	0-25
430	F4-FC-1181-1-2	46	67	35-100	3	0-20
431	MLC-SN-433-2-1	46	67	10-100	5	0-25
432	MLC-SN-97-1-5	48	67	40-90	14	0-50
433	MLC-SN-324-1-2	46	68	30-98	7	0-25
434	LC-SN-55-2-2	46	68	25-98	16	0-50
435	F4-FC-1433-1-1	51	68	35-100	39	1-70
436	MLC-SN-132-2-3	57	68	45-95	16	2-50
437	MLC-SN-29-2-2	48	68	2-95	7	0-20
438	MLC-SN-422-1-1	46	68	20-100	5	0-20
439	F4-FC-1173-2-1	48	68	10-98	13	1-40
440	LC-SN-13-4-1	46	68	10-95	2	0-5
441	F4-FC-1045-2-1	44	68	35-100	6	0-25
442	MLC-SN-12-4-2	59	68	10-95	<1	0-1
443	LC-SN-87-3-6	57	68	45-100	6	0-15
444	LC-SN-249-2-3	64	69	2-90	<1	0-1
445	LC-SN-509-5-1	54	69	1-98	0	0-0
446	LC-SN-114-1-5	46	69	20-95	4	0-15
447	LC-SN-249-2-1	59	69	20-99	5	0-25
448	MLC-SN-315-2-1	51	69	10-100	2	0-10
449	LC-SN-13-1-2	46	69	45-95	11	0-35
450	F4-FC-1173-1-7	46	69	15-98	3	0-25
451	MLC-SN-112-2-2	46	69	30-95	3	0-20
452	LC-SN-324-1-3	51	69	35-95	2	0-6
453	F4-FC-1173-2-9	51	69	10-100	1	0-5
454	F4-FC-1285-9-2	51	69	45-90	3	0-20
455	LC-SN-197-3-2	46	69	15-100	4	0-20

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Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
456	MLC-SN-358-1-3	54	69	40-90	3	0-17
457	LC-SN-58-1-1	51	69	10-90	4	0-15
458	LC-SN-509-2-1	51	70	35-98	10	0-60
459	F4-FC-1107-2	48	70	1-98	8	0-35
460	F4-FC-1139-1-1	51	70	35-99	9	1-25
461	F4-FC-1285-9-3	51	70	35-90	0	0-0
462	F4-FC-1045-2-1	44	70	20-95	4	0-30
463	F4-FC-1107-2	48	70	45-85	9	0-30
464	MLC-SN-181-3-2	51	70	10-100	3	0-10
465	MLC-SN-112-1-3	45	70	25-90	0	0-0
466	F4-FC-1302-2-2	51	70	15-98	5	0-40
467	F4-FC-1401-2-1	48	70	1-100	15	1-25
468	WL-41-3	46	70	1-98	15	0-40
469	LC-SN-265-2-2	54	70	40-95	4	0-19
470	LC-SN-377-4-1	51	70	50-95	5	0-20
471	MLC-SN-358-1-1	44	70	5-100	1	0-15
472	LC-SN-450-1-1 (OP)	48	71	35-100	2	0-8
473	F4-FC-1285-8-8	54	71	35-95	6	0-50
474	F4-FC-1285-2-3	54	71	45-98	0	0-0
475	LC-SN-315-2-1	54	71	15-100	7	0-25
476	MLC-SN-97-1-5	54	71	25-95	<1	0-1
477	WC-31-1	46	72	20-95	9	0-30
478	F4-FC-1282-1-1	57	72	45-98	1	0-2
479	LC-SN-439-5-3	48	72	5-98	8	0-25
480	LC-SN-295-4-3	48	72	30-95	4	0-20
481	MLC-SN-6-1-1	48	72	10-95	28	1-50
482	WC-5-2	57	72	40-90	9	0-50
483	F4-FC-1173-1-2	46	72	35-100	4	0-45
484	F4-FC-1056-1-1	51	72	35-90	12	0-30
485	F4-FC-1463-2-1	41	72	45-95	16	2-50
486	LC-SN-1380-3-2	51	72	40-90	6	0-25
487	F4-FC-1225-7-1	54	73	40-98	<1	0-1
488	F4-FC-1173-2-1	51	73	10-98	1	0-5
489	MLC-SN-444-2-1	44	73	1-100	13	1-50
490	LC-SN-113-2-2	51	73	60-85	7	0-35

Contd.....

Entry No.	Pedigree	At ICRISAT Center			At Hissar	
		DTF	Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
491	LC-SN-31-3-2	44	73	35-90	11	0-35
492	MLC-SN-6-2-1	46	73	1-100	12	0-70
493	MLC-SN-91-1-2	48	73	1-100	3	0-20
494	LC-SN-435-5-2	48	73	25-98	<1	0-5
495	MLC-SN-97-1-10	54	73	5-100	2	0-10
496	F4-FC-1285-6-1	48	73	50-100	8	0-30
497	MLC-SN-29-2-3	46	73	10-100	3	0-10
498	F4-FC-1285-8-1	54	74	25-98	0	0-0
499	F4-FC-1536-2-1	46	74	20-100	13	0-50
500	F4-FC-1173-2-6	48	74	35-95	2	0-15
501	MLC-SN-103-1-1	51	74	40-100	2	0-5
502	LC-SN-228-5-1	46	74	1-99	4	0-20
503	MLC-SN-12-4-1	48	74	1-98	4	1-10
504	F4-FC-1285-9-1	51	74	50-99	0	0-0
505	LC-SN-228-5-2	48	74	40-95	1	0-5
506	MLC-SN-335-1-1	46	74	20-100	5	0-20
507	F4-FC-1285-9-4	48	75	20-100	1	0-5
508	F4-FC-1403-1-2	48	75	35-100	10	0-50
509	LC-SN-295-1-1	46	75	50-100	5	0-25
510	FS-FS-3-2-1	44	75	35-100	5	0-20
511	F4-FC-1041-2-1	48	75	20-95	1	0-3
512	F4-FC-1173-2-5	51	75	40-90	1	0-5
513	F4-FC-1258-2-1	54	75	25-98	0	0-0
514	F4-FC-1035-2-1	48	75	40-100	1	0-5
515	F4-FC-1107-2-2	48	75	40-90	1	0-5
516	LC-SN-114-3-1	46	75	2-100	3	0-15
517	NML 6.4-12-2-1	57	76	45-99	21	1-40
518	F4-FC-1302-1-2	54	76	45-100	8	0-35
519	WC-6-2	48	76	2-100	5	0-20
520	MLC -SN-6-1-2	48	76	50-100	7	0-50
521	MLC-SN-183-2-5	64	76	40-90	3	0-10
522	F4-FC-1139-1-1	51	76	50-98	5	0-25
523	LC-SN-380-3-1	51	76	25-98	14	1-50
524	F4-FC-1173-2-1	51	76	1-98	14	0-60
525	F4-FC-1463-1-1	51	76	50-99	7	0-30

Contd.....

Entry No.	Pedigree	At ICRISAT Center			At Hissar	
		DTF	Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
526	WC-4-1	68	76	25-95	24	1-80
527	LC-SN-113-1-2	46	76	10-100	17	0-50
528	MLC-SN-183-2-1	57	77	25-98	13	0-50
529	F4-FC-1252-4-1	57	77	50-98	0	0-0
530	F4-FC-1463-2-2	46	77	40-100	10	0-30
531	F4-FC-1145-1-1	41	77	50-98	11	1-45
532	LC-SN-113-1-1	51	77	20-99	18	0-90
533	F4-FC-1045-2-1	46	77	1-100	10	0-50
534	F4-FC-1041-2-3	46	77	35-100	6	0-10
535	LC-SN-346-1-3	51	77	60-90	3	0-20
536	F4-FC-1285-7-1	51	77	45-98	1	0-5
537	LC-SN-85-2-1	46	77	10-99	4	0-10
538	LC-SN-303-1-2	51	78	40-95	8	0-30
539	MLC-SN-112-2-1	48	78	40-98	4	0-35
540	MLC-SN-20-1-4	51	78	40-98	11	0-60
541	F4-FC-1107-2	46	78	35-98	9	0-40
542	MLC-SN-479-4-1	41	78	40-100	7	0-20
543	LC-SN-112-2-1	51	78	15-100	7	0-25
544	MLC-SN-112-1-4	54	78	25-100	0	0-0
545	LC-SN-252-2-2	46	78	45-98	10	1-35
546	MLC-SN-68-1-1	48	78	40-99	4	1-20
547	F4-FC-11-1-1-1	51	78	65-100	1	0-5
548	F4-FC-1285-4-1	48	78	45-95	4	0-10
549	LC-SN-72-1-2	48	79	45-98	1	0-2
550	F4-FC-1101-1-1	48	79	35-100	<1	0-1
551	LC-SN-109-1-1	46	79	25-98	7	1-25
552	LC-SN-284-1-1	51	79	45-100	5	0-20
553	MLC-SN-315-2-2	45	79	40-100	6	0-50
554	LC-SN-113-1-2 (OP)	46	79	5-100	19	2-50
555	F4-FC-1041-2-1	44	79	35-100	3	0-6
556	F4-FC-1045-2-1	48	79	45-95	12	0-50
557	LC-SN-113-1-1	48	79	35-100	9	0-25
558	MLC-SN-275-2-1	57	79	50-95	1	0-6
559	F4-FC-1459-1-1	51	79	50-95	<1	0-1
560	LC-SN-168-1-3	46	79	35-100	3	0-16

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
561	MLC-SN-19-2-1	46	79	25-100	1	0-5
562	F4-FC-1296-2-3	48	80	2-100	3	0-10
563	F4-FC-1403-4-2	48	80	25-100	22	0-50
564	LC-SN-114-2-1	48	80	25-98	14	0-50
565	MLC-SN-6-2-3	48	80	35-99	26	5-60
566	MLC-SN-31-3-1	48	80	5-98	1	0-5
567	MLC-SN-12-3-3	46	80	45-100	12	0-25
568	WC-49-6	46	80	10-100	14	0-60
569	F4-FC-1464-1-2	44	80	25-100	33	5-80
570	LC-SN-451-1-1	44	80	50-100	6	0-20
571	F4-FC-1291-1-1	44	81	50-99	15	1-30
572	LC-SN-55-3-3	51	81	20-98	1	0-5
573	LC-SN-89-2-2	51	81	50-100	5	0-20
574	MLC-SN-292-1-1	46	81	50-100	12	0-50
575	F4-FC-1145-1-1	54	81	10-95	10	0-50
576	LC-SN-23-2-3	46	81	10-100	10	0-25
577	MLC-SN-313-3-1	48	81	45-98	5	0-15
578	MLC-SN-252-2-1	51	81	20-100	4	0-35
579	WC-23-2	51	81	25-100	2	0-6
580	LC-SN-102-2-2	46	81	15-95	11	0-50
581	F4-FC-1045-4-2	46	82	5-100	3	0-15
582	F4-FC-1302-2-1	51	82	45-100	14	0-50
583	F4-FC-1145-1-1	44	82	35-100	8	1-20
584	MLC-SN-112-1-6	54	82	40-100	2	0-13
585	F4-FC-1041-2-1	46	82	25-100	4	0-20
586	F4-FC-1035-2-1	46	82	35-100	9	0-30
587	LC-SN-303-2-1	48	82	40-100	13	0-70
588	F4-FC-1107-2	51	82	35-100	3	0-10
589	F4-FC-1433-4-1	51	82	35-100	<1	0-2
590	F4-FC-1035-2-1	41	82	70-100	1	0-6
591	F4-FC-1056-1-1	44	82	35-100	6	1-12
592	MLC-SN-412-1-1	51	83	50-100	15	1-40
593	MLC-SN-75-1-5	46	83	50-100	1	0-2
594	F4-FC-1107-2	44	84	25-98	3	1-8
595	LC-SN-102-1-1	51	84	40-100	3	0-10

Contd.....

Entry No.	Pedigree	At ICRISAT Center			At Hissar	
		DTF	Ergot sev. (%)		Smut sev. (%)	
			Mean ^{a/}	Range	Mean ^{b/}	Range
596	MLC-SN-396-2-1	51	84	50-100	1	0-5
597	F5-FC-9-3-1	51	84	40-99	21	1-50
598	LC-SN-315-1-2	54	84	50-100	<1	0-1
599	MLC-SN-20-1-3	46	84	65-100	1	0-10
600	F4-FC-1056-1-1	44	84	35-100	8	0-20
601	F4-FC-1173-2-1	44	84	35-98	1	0-5
602	F4-FC-1308-1-3	51	84	25-100	6	0-15
603	F4-FC-1403-3-1	44	84	65-100	3	0-25
604	WC-5-1	57	84	45-100	3	0-10
605	LC-SN-274-1-1	47	84	35-100	13	0-45
606	F4-FC-1035-2-1	44	84	40-100	9	0-50
607	LC-SN-252-2-4	46	84	45-100	1	0-5
608	F4-FC-1041-2-1	46	84	65-100	3	0-10
609	LC-SN-435-4-3	48	85	35-100	0	0-0
610	F4-FC-1101-1-1	51	85	35-100	9	0-25
611	LC-SN-168-1-4	46	85	45-100	4	0-20
612	MLC-SN-22-3-3	44	85	50-100	2	0-5
613	MLC-SN-114-3-1	48	85	50-100	6	0-30
614	F4-FC-1041-2-1	48	85	45-100	4	0-15
615	LC-SN-114-2-2	54	85	40-100	11	1-25
616	LC-SN-212-1-1	51	85	2-100	11	0-40
617	LC-SN-197-3-1	51	86	60-99	3	0-15
618	MLC-SN-31-1-2	46	86	25-100	8	0-50
619	MLC-SN-335-1-2	48	86	45-100	20	2-50
620	MLC-SN-97-2-3	54	86	75-100	7	0-30
621	LC-SN-439-5-2	51	86	40-100	3	0-10
622	F4-FC-1107-2-2	51	86	45-100	15	0-60
623	LC-SN-377-4-4	44	86	45-100	5	0-20
624	MLC-SN-29-2-1	51	87	65-100	16	0-75
625	F4-FC-1035-2-1	41	87	70-100	9	0-35
626	F4-FC-1234-1-1	54	87	60-99	4	1-20
627	F5-FC-6-1-1	48	87	60-99	16	0-70
628	LC-SN-324-3-1	57	87	75-99	2	0-5
629	F4-FC-1035-2-1	41	87	35-100	1	0-5
630	F4-FC-1056-1-1	51	88	45-100	1	1-60

Contd.....

Entry No.	Pedigree	DTF	At ICRISAT Center		At Hissar	
			Ergot sev. (%) Mean ^{a/}	Range	Smut sev. (%) Mean ^{b/}	Range
631	MLC-SN-97-1-7	48	88	75-100	12	0-25
632	F4-FC-1296-2-1	54	88	75-100	1	0-10
633	F4-FC-1530-3-1	46	88	80-99	5	0-15
634	F4-FC-1467-1-1	57	88	50-99	37	25-60
635	LC-SN-85-3-1	46	88	25-100	8	0-50
636	F4-FC-1035-2-1	41	88	65-100	<1	0-1
637	LC-SN-252-2-1	46	88	15-100	-	-
638	F4-FC-1056-1-1	48	89	45-98	7	1-25
639	F4-FC-1056-1-1	44	89	65-100	4	1-10
640	LC-SN-377-3-4	51	89	75-100	5	0-20
641	F4-FC-1296-2-4	51	90	65-100	2	0-5
642	F4-FC-1301-3-5	48	91	60-100	11	1-50
643	F4-FC-1056-1-1	46	91	65-100	1	0-3
644	F4-FC-1056-1-1	48	92	45-100	2	0-5
645	F4-FC-1056-1-1	44	92	75-100	6	0-30
646	MLC-SN-97-1-8	51	94	75-100	<1	0-1
647	WL-41-1	51	94	80-100	9	1-20
648	F4-FC-1056-1-1	48	96	75-100	15	2-25
649	LC-SN-315-1-5	44	96	85-100	7	0-25
650	F4-FC-1403-1-3	48	98	85-100	24	0-80
651	F4-FC-1301-4-1	48	99	98-100	7	0-25
	ICH 105	46	89	45-100	30	5-80
	5141A	48	91	55-100	57	10-80
	BJ 104	46	94	75-100	30	2-50

^{a/} Mean of 10 bagged-inoculated-bagged heads at ICRISAT Center

^{b/} Mean of 10 inoculated bagged heads at Hissar

- Not recorded

Appendix IV

Ergot reactions and days to 75 percent flowering (DTF) of 509 breeding lines in 16 trials during the 1979 rainy season at ICRISAT Center

Entry No.	Pedigree	DTF	Ergot sev. (%) ^{2/}
I. EXPERIMENTAL VARIETIES TRIAL (EVT)			
1	IVS-A 75	43	10
2	NELC-A 73	51	40
3	SC1-H 73	51	40
4	IVS-A 73	52	43
5	WC-C 75	43	43
6	D2-BB 73	55	50
7	MC-H 73	45	50
8	MC-A 73	45	51
9	NEC-A 73	51	52
10	SC1-W 73	47	55
11	MC-P 73	43	55
12	ICMS-7703	45	61
13	IVS-S 73	51	62
14	IVS-H 73	51	63
15	NEC-BB 73	51	66
16	SSC-BB 73	47	66
17	WC-P 73	51	66
18	IVS-P 73	43	70
19	WC-H 73	47	71
20	SC1-F 73	47	73
21	SSC-K 73	51	77
22	SC1-A 73	51	73
23	WC-K 73	47	79
24	WC-A 73	47	39
25	BJ-104	43	90
	ICH-105 (Check)	43	91
II. IMPROVED EXPERIMENTAL VARIETIES TRIAL (IEVT)			
1	WC-C 75 (SB)	47	30
2	IVS-A 75 (O)	47	30
3	WC-C 75 (O)	47	34
4	IVS-P 77	47	45
5	IVS-A 75 (TC)	47	45

Contd.

Entry No.	Pedigree	TF	Ergot sev. (%)
6	WC-B 76	45	46
7	WC-C 75 (TC)	51	49
8	IVS-A 75 (S)	51	49
9	MC-P 76 (O)	45	53
10	RF-A 76 (O)	47	53
11	WC-B 76 (O)	47	54
12	WC-C 75	47	58
13	IVS-A 75	47	59
14	IVS-A (SB)	47	60
15	WC-B 77	43	62
16	SSC-C 75	45	62
17	SSC-C 75 (O)	43	64
18	SSC-H 76 (O)	47	66
19	IVS-A 75	45	67
20	WC-C 75 (S)	51	67
21	SSC-H 76	45	67
22	RF-A 76	45	70
23	BK-560	43	83
24	MC-P 76	45	91
25	BJ-104	51	92
	ICH-105 (Check)	43	87

III. COMPARISON OF EXPERIMENTAL VARIETIES TRIAL (CEVT)

1	MBH-110	43	32
2	IVS-A 75	47	38
3	SV-II	51	49
4	SV-I (DS)	47	51
5	LC-C75	47	52
6	LC-A 77	51	53
7	WC-C 75	47	59
8	IVS-P 77	45	63
9	WC-B 77	45	65
10	MC-K 77	45	69
11	SSC-P 77	47	74
12	SSC-C 75	47	75
13	PSB-8	45	76
14	MC-C 75	47	90
	ICH-105 (Check)	43	91

Contd....

Entry No.	Pedigree	DTF	Ergot sev. (%)
IV. PEARL MILLET INITIAL HYBRID TRIAL-4 PARENTS (PMIHT -4P)			
1	SSC-6101	47	38
2	LC-7232	51	42
3	SSC-6030	56	43
4	NEC-7182	51	44
5	WC-6103	47	47
6	E 298-2-16	51	49
7	E 298-2-26-7	51	50
8	SSC-6049	45	51
9	SSC-6192	47	52
10	LC-6146	51	55
11	LC-6234	51	56
12	MC-7044	47	58
13	SC1-7117-2	47	60
14	EC-5536-2	43	61
15	E 298-2-1-8	51	61
16	MC-5171	51	61
17	WC-7209	54	65
18	EC-7207	47	65
19	E 298-2-1	45	65
20	E 298-2-40	47	66
21	DC-7008	54	71
22	SC1-5139	51	73
23	LC-6040	51	73
24	E-298-2-4	45	75
25	WC-6173	47	80
26	IVS-7014	47	80
27	MC-7108	47	81
28	LC-7123	51	81
29	WC-5152	47	82
30	E-298-2-4	47	84
31	WC-7263	51	86
32	IVS-7227	45	90
	ICH-105 (Check)	43	91

Contd..

Entry No.	Pedigree	DTF	Ergot sev. (%)
V. INTER-VARIETAL SYNTHETIC (IVS-P77)			
1	IVS-P 77 S-30	45	20
2	" S-35	47	29
3	" S-1	51	31
4	" S-15	51	33
5	" S-28	51	36
6	" S-4	41	37
7	" S-61	47	40
8	" S-34	51	41
9	" S-67	45	48
10	" S-9	51	49
11	" S-36	41	49
12	" S-23	54	51
13	" S-16	51	52
14	" S-59	54	52
15	" S-38	47	53
16	" S-48	45	55
17	" S-32	45	57
18	" S-50	45	59
19	" S-56	45	61
20	" S-2	51	62
21	" S-17	47	62
22	" S-62	43	62
23	" S-5	51	65
24	" S-14	51	66
25	" S-21	43	66
26	" S-55	43	66
27	" S-6	47	67
28	" S-27	47	67
29	" S-19	41	68
30	" S-18	45	69
31	" S-13	47	70
32	" S-7	47	71
33	" S-49	45	71
34	" S-57	47	71
35	" S-69	45	73

Contd....

Entry No.	Pedigree	DTF	Ergot sev. (%)
36	IVS-P 77 S-12	45	76
37	" S-20	47	76
38	" S-43	47	76
39	" S-41	45	80
40	" S-46	45	81
41	" S-44	47	82
42	" S-68	45	82
43	" S-37	45	90
44	" S-52	45	91
45	" S-45	45	92
46	" S-40	47	97
	ICH-105 (Check)	43	91
	5141A (Check)	45	85
VI. <u>COMPOSITE BULK TRIAL (CBT)</u>			
1	NEC-C2	43	38
2	SC1-C1	47	39
3	SSC-CO	45	53
4	IVS-C3	45	57
5	SSC-C2	47	57
6	SC1-C3	51	58
7	IVS-C1	47	62
8	NEC-CO	50	62
9	IVS-CO	51	64
10	MC-C4	43	65
11	WC-C1	47	66
12	WC-CO	47	66
13	MC-C3	45	67
14	MC-C1	45	67
15	MC-C2	51	68
16	NEC-C1	47	69
17	IVS-C2	47	69
18	WC-C2	45	71
19	SSC-C1	45	73
20	BJ-104	45	74

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)
21	SC1-CC	45	74
22	MC-CO	45	74
23	SC1-C2	45	77
24	WC-C3	51	80
25	IVS-A 75	43	85
	ICH-105 (Check)	43	87
	5141A (Check)	45	92

VII. BEST POPULATION PROGENIES TRIAL (BPPT)

1	IVS-8088	51	26
2	NEC-8121	43	26
3	NELC-A 78	51	29
4	IVS-8206	43	32
5	IVS-8039	45	38
6	MC-8080	43	39
7	IVS-A75	51	41
8	IVS-8093	47	41
9	NEC-C2	52	41
10	MC-8044	43	44
11	MC-8055	47	46
12	WC-8149	51	48
13	WC-8097	43	50
14	WC-8190	51	50
15	IVS-8039	43	50
16	WC-8189	51	51
17	IVS-8178	51	51
18	NELC-8027	51	51
19	NELC-8124	54	51
20	WC-8015	43	52
21	SC1-C3	43	52
22	SC1-8100	52	53
23	IVS-8172	54	54
24	MC-C4	43	54
25	IVS-8086	47	55

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)
26	SC1-A 78	43	56
27	SC1-8155	47	56
28	NEC-8150	43	57
29	NELC-8041	51	58
30	NELC-8153	50	53
31	NELC-C1	51	59
32	MC-8106	45	59
33	WC-8082	51	61
34	IVS-C3	47	61
35	NELC-C1	51	61
36	NEC-8127	43	62
37	NEC-8016	49	63
38	SC1-8038	52	63
39	MC-8162	43	64
40	NELC-8221	50	67
41	MBH-110	43	67
42	WC-8018	47	68
43	WC-A 78	47	69
44	IVS-8038	43	69
45	SC1-8014	47	69
46	WC-8129	47	70
47	SC1-8003	47	70
48	NEC-8187	49	72
49	WC-C 75	45	72
50	NEC-A 78	49	73
51	MC-A 78	47	73
52	MC-8165	43	73
53	MC-8151	43	75
54	MC-8196	49	75
55	IVS-A 75	47	75
56	WC-8220	47	77
57	NEC-8178	41	80
58	WC-C3	47	81
59	SC1-8082	47	81
60	SC1-8129	47	87
61	BJ-104	45	84
	ICH-105 (Check)	43	87

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)
VIII. ELITE VARIETIES TRIAL (ELVT)			
1	MBH-110	41	28
2	IVS-7029	51	30
3	WC-C 75	47	37
4	SC1-7052	51	37
5	WC-7262	51	40
6	MC-7044	45	48
7	SSC-H 76	47	51
8	LC-7053	49	52
9	SC1-7034	51	54
10	ICMS-5454	49	57
11	MC-P 76	46	58
12	ICMS-7703	45	60
13	WC-7227	45	61
14	NEC-7121	41	61
15	ICMS-7817	45	64
16	PSB-8	41	65
17	IVS-A 75	45	66
18	MC-K 77	44	66
19	ICMS-7803	48	67
20	MC-C 75	43	68
21	LC-7043	49	68
22	ICMS-7818	46	70
23	IVS-7190	47	73
24	ICH-241	44	76
25	IVS-P 77	46	77
26	WC-B 77	45	77
27	ICH-154	47	78
28	PHB-14	46	81
29	ICH-165	46	84
30	SC3-5048	49	87
31	ICH-226	46	91
32	BJ-104	44	95
	ICH-105 (Check)	43	87
	5141A (Check)	45	85

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)	Smut ^{b/} sev. (%)
<u>IX. PEARL MILLET HYBRID TRIAL-1 (PMHT-1)</u>				
1	MEDH NO. 1/79	41	39	24
2	ICH 245	43	52	41
3	ICH 381	41	50	49
4	ICH 241	43	66	29
5	ICH 243	39	70	22
6	ICH 218	45	71	23
7	ICH 378	41	75	26
8	ICH 267	45	78	14
9	ICH 206	45	79	45
10	ICH 162	41	79	13
11	ICH 154	43	80	45
12	BJ 104	39	81	48
13	ICH 105	43	82	27
14	ICH 277	45	83	31
15	ICH 165	45	85	45
16	MEDH NO. 2/79	47	85	34
17	ICH 383	45	86	31
18	ICH 232	43	87	14
19	BK 560-230	41	88	49
20	ICH 220	43	88	44
21	ICH 382	43	89	49
22	ICH 226	43	89	43
23	ICH 304	45	92	23
24	ICH 118	45	93	16
25	ICH 282	45	93	32
26	ICH 274	45	94	18
27	ICH 323	45	95	27
	5141 A Check	47	99	57
<u>X. PEARL MILLET HYBRID TRIAL-1-PARENTS (PMHT-1-P)</u>				
1	ICP 383	47	42	7
2	ICP 118	45	54	5
3	ICP 381	41	55	4
4	ICP 267	50	59	5
5	ICP 226	50	62	6

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)	Smut ^{b/} sev. (%)
6	MEBH 1/79	41	66	-
7	ICP 274	45	66	12
8	ICP 378	45	67	8
9	ICF 206	45	68	11
10	ICP 304	45	68	2
11	ICMS 7703	41	69	18
12	ICP 241	45	71	23
13	ICP 282	41	71	13
14	ICP 154	50	72	<1
15	ICP 382	50	73	10
16	ICP 277	52	74	27
17	ICP 232	52	74	6
18	ICP 323	50	75	21
19	ICP 105	52	81	9
20	ICP 218	45	81	8
21	ICP 220	45	85	24
22	J 104	45	85	29
23	ICP 165	45	91	3
24	MEBH 2/79	50	91	-
25	ICP 245	47	91	14
26	K-560	50	93	27
	ICP 243	45	98	8
	ICH 105 Check	43	87	23
	BJ 104 Check	42	83	23

XI. PEARL MILLET INITIAL HYBRID TRIAL-II (PMHT-II)

1	IH 7909	42	69
2	ICH 406	42	73
3	ICH 403	46	74
4	ICH 411	40	77
5	ICH 385	41	78
6	ICH 405	44	82
7	ICH 390	46	83
8	ICH 398	47	84
9	IH 7913	45	85
10	BK-560-230	41	85

Contd...

Entry No.	Pedigree	DTF	Ergot sev. (%)
11	IH 7905	42	86
12	ICH 407	44	87
13	ICH 410	44	87
14	ICH 388	43	87
15	ICH 220	44	87
16	ICH 408	46	89
17	ICH 118	50	89
18	ICH 165	48	89
19	ICH 394	45	90
20	ICH 393	43	90
21	ICH 386	44	90
22	IH 7914	51	90
23	IH 7910	45	90
24	ICH 401	44	91
25	IH 7904	41	91
26	ICH 384	46	91
27	IH 7915	47	92
28	ICH 400	48	94
29	IH 7901	44	94
30	ICH 399	44	95
31	ICH 387	39	95
32	ICH 409	47	96
33	IH 7903	43	96
34	IH 7916	46	96
35	ICH 105	44	97
36	BJ-104	39	97
	5141 A. (Check)	47	99
XII. <u>PEARL MILLET INIT</u>		<u>-II-P)</u>	
1	ICP 406	39	29
2	ICP 403	50	55
3	ICP 405	39	58
4	ICP 411	39	64
5	ICP 394	43	68

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)
6	ICP 390	47	69
7	ICP 410	43	71
8	ICP 398	45	71
9	ICP 118	50	76
10	ICP 403	39	78
11	ICP 105	52	79
12	ICP 387	39	81
13	ICP 406	45	83
14	IHP 79003	50	85
15	ICP 407	43	86
16	IHP 79014	47	86
17	IHP 79015	43	86
18	K-560	43	87
19	ICP 409	43	87
20	ICP 401	45	88
21	J-104	39	89
22	IHP 79004	39	91
23	ICP 220	43	92
24	IHP 79005	43	92
25	ICP 388	43	93
26	IHP 79013	39	93
27	IHP 79016	52	94
28	ICP 165	52	95
29	ICP 384	41	96
30	ICP 386	47	99
31	IHP 79009	43	99
32	ICP 385	43	99
33	ICP 400	43	100
34	IHP 79001	45	100
35	IHP 79010	50	100
	BJ-104 (Check)	43	88

XIII. PEARL MILLET SYNTHETIC TRIAL-I (PMST-1)

1	ICMS 7815	44	39
2	ICMS 7845	42	48
3	IVS-A 75	47	58
4	ICMS 7835	47	60
5	ICMS 7819	50	60

Contd.....

Entry No.	Inbred No.	Pedigree	DTF	Ergot sev. (%)
6		IVS-P 77	44	71
7		ICMS 7806	47	72
8		ICMS 7838	50	75
9		ICMS 7860	44	78
10		ICMS 7705	48	79
11		ICMS 7818	47	79
12		ICMS 7704	46	80
13		ICMS 7861	51	80
14		WC-C 75	46	80
15		ICMS 7816	45	81
16		ICMS 7857	46	82
17		ICMS 7825	50	86
18		ICMS 7817	47	86
19		ICMS 7803	43	87
20		ICMS 7703	44	87
21		WC-B 77	46	88
22		PSE-8	44	88
23		ICMS 7805	46	89
24		ICMS 7812	50	91
25		BJ 104	43	94
		ICH-105 (Check)	43	87

XIV. INBRED LINES

1	442	A-836 x Serere 39-15-2-1-1	55	45
2	595	A-836 x J 1798-32-2-1-1-2-1	51	46
3	318	J 1623 x 700490-2-4-3-2-3-1	45	66
4	451	T-128-3 x 700404-1-5-1-1-1	41	70
5	484	23 D2B x 700467-9-4-1-1	57	73
6	502	700250 x ExB-6-2-2-2-1	51	73
7	643	B282 x J 1244-1-1-11-2-1	47	73
8	313	J 1798 x 700594-7-1-1-2-2-1	55	73
9	305	J 1623 x 700544-13-4-3-2-3-1	50	75
10	418	A-836 x 700250-34-1-2-1	47	75
11	214	B-282 x J 888-27-2-1-1	55	79
12	309	J 1623 x 700544-13-4-3-2-4-1	50	81
13	630	B 282 x J 1244-1-1-7-4-1	55	81
14	506	SD2 x ExB (161-4)-1-1	45	83
15	563	B 282 x J 804-1-5-6-3-1	47	86

Contd....

Entry Inbred				Ergot
No.	No.	Pedigree	TF	sev. (%)
16	627	B282 x J 1244-1-1-7-2-1	51	87
17	509	SD2 x ExB (161-4)-2-1	45	37
18	380	WC-6086-2-1	45	90
19	620	B 280 x J 1244-1-1-3-2-1	47	91
20	415	Λ 836 x 700250-34-1-1-1	45	92
21	607	B 282 x J 888-27-17-2-1	47	96
22	436	Serere 41 x J-1-2-17-1-3-1	51	100
23	314	J 1623 x 700490-2-4-3-2-2-1	50	100
24	453	T-128-3 x 700404-1-5-1-2-1	47	100
25	478	23 D2B x 700467-1-2-2-1	43	100
		ICH-105 Check	43	87

XV. UNIFORM PROGENY NURSERY (UPN)

1	(B-Senegal-9-5 x B-816)-5	39	20
2	(J-173-1 x Ghana via Nig.-5)-4	43	28
3	(B-Senegal-9-5 x B-816)-2	45	30
4	(A-836 x Serere-2A-3)-2	43	30
5	EBP No.2	57	35
6	(SD2 x ExB-2(D-1074-15 x Ec-298)-2-13-4	55	43
7	(J-173 x Ghana via Nig.)-4-11	52	48
8	(Ghana via Nig. x KG-22)-4-1	43	48
9	F5 (J-1623 x 3/4 EB-96)	52	48
10	F5 (SC1(S)4-18 x Saria Syn.-40-5)	55	54
11	F5(PIB-228 x 3/4 HK-119-17)	52	56
12	(B-Senegal-9-2 x SN 449)-2	39	56
13	WC-7262	50	58
14	(B-282 x J-888)-27-9-3	45	58
15	(B-282 x J-1244-1-1)-1-7	59	59
16	(J-104 x 3/4 HK)-11-70-1	47	59
17	IVS-7190	41	61
18	(P-24 x IP-230)-1	43	62
19	(B-282 x J-1244-1-1-1)-6	55	64
20	(G73 x WC): BC1(F3)-54	43	64
	(700112-5 x J1623) x (700490-1)-2-1-1	43	65
22	(J-595-1 x NEP-18-5638-1-17)-1	43	66
23	F5(MC-125 x Serere-33-4)	57	66
24	(J 823) x (P-7)-5-2	43	66
25	(Cam-73 x GNS)-1-3	52	68

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)
26	(J-1188 x Cassady-20-1)-3	45	68
27	(Gam-73 x ICI-7533-2)-1	52	70
28	SC3 - 5048	41	72
29	WC-7227	47	73
30	(Dr. Cassady x 700490)-1-1-1	57	74
31	F5 (MC-103 x Serere-17B-11)	45	76
32	F5 (MC-125 x Serere-33-1)	59	76
33	(B-282 x J-888)-27-9-2	45	77
34	(700250 x J-2155-8-1)-1	52	77
35	(G 75 x ExB): BC1(F3)-23	41	78
36	MC-7111	45	79
37	(J-823) x (P-7-5-2)-1	45	80
38	(J-173-1 x Ghana via Nig.)-5-14-1	55	80
39	(Serere-39 x B-816)-2-4-2	45	81
40	SC1-7178	47	82
41	(J1623 x 700797-22) x (EC-298)-2-5	43	82
42	(Gam-73 x Serere-2A-4)-1-1	55	83
43	(700250 x J-2155-8)-1-13	43	86
44	(J 1623 x 700796)-2-4-1	45	88
45	(J 1644 x 3/4 Souna)-6-65-1	52	88
46	(KG-22 x 700651)-4-1	43	91
47	(G 73 x MC): BC1(F3)-22	50	91
48	(B-Senegal-9-5) x B-816)-5	45	92
49	(B-Senegal-9-5 x B-816)-1	45	92
50	(B-282 x J-888)-27-14-1	52	93
51	EBP No. 12	50	93
52	(G 75 x EC): BC1(F3)-19	45	93
53	IVS-5454	47	95
54	(J 25-1 x J 1623-1-1)-1-3-1	43	95
55	(B-Senegal-9-5 x B-816)-2-2	47	95
56	E 398-2-1-8	50	95
57	(SD2 x ExB-2) x (700760 x K560-10)-1-1	45	96
58	(B-282 x J-888)-27-2-1	50	96
59	(G73 x MC): BC1(F3)-2	50	96
60	(G75 x ExB): BC1(F3)-11	55	97

Contd.....

Entry No.	Pedigree	DTF	Ergot sev. (%)
61	F5(B-282 x 3/4 EB-100-9)	55	97
62	(G 75 x MC): BC1(F3)-29	43	98
63	(700260 x 3/4 EB-8-16)	47	98
64	(G 75 x ExB): BC1(F3)-13	50	98
65	(J 1244 x MC): BC1(F3)-10	47	99
66	(Dr. Cassady x 700490)-1-1	50	99
67	(G 73 x MC): BC1(F3)-66	50	100
68	(Gam-73 x Serere-2A-4)-4-2	52	100
69	(Gam-73 x GNS-4)-2-2	39	100
70	(B-282 x J 888)-27-9-4	47	100
71	G 73-K77 (Trial check)	45	85
72	ICH-105 (Check)	43	91

	<u>DTF</u>	<u>Ergot sev. (%)</u>	<u>Smut sev. (%)</u>
XVI. MALE STERILE LINES			
111 A	54	93	56
5054 A	45	97	47
5141 A	47	99	57
ICH-105 Check	43	87	23

a/ Mean of 10 to 30 bagged-inoculated heads

b/ Mean of 10 to 20 inoculated-bagged heads in smut nursery at Hissar

Appendix V

Ergot reactions and days to 75% flowering (DTF) of 149 entries in five All India Coordinated Millet Improvement Project - at ICRISAT Center during the 1979 rainy season

Sl. No.	Entry	DTF	Mean \bar{a} ergot (%)
I. INITIAL PEARL MILLET HYBRID TRIAL-1 (IPMHT-1)			
1	HHB - 38	41	50
2	HHB - 37	41	55
3	ICH - 241	45	61
4	GHB - 32	48	61
5	Hyb - 1001	38	66
6	UCH - 7	43	69
7	CD - 24	39	70
8	MH - 29	45	70
9	GHB - 61	41	73
10	KCH - 417	41	77
11	ICH - 226	47	78
12	AHB - 30	50	78
13	Ilyd - 1021	43	78
14	MBH - 126	47	78
15	PH - 1	41	78
16	GHB - 45	39	78
17	AHB - 31	45	79
18	BD - 24	41	80
19	HHB - 36	47	83
20	HD - 382	47	87
21	PHB - 65	45	88
22	UCH - 8	43	88
23	RHB - 9	45	91
24	BJ - 104	39	92
25	PHB - 68	43	92
26	MBH - 121	47	93
27	MBH - 125	47	94
28	GHB - 71	39	95
29	PHB - 67	50	95
30	ICH-105 Local Check	45	86

S1. No.	Entry	DTF	Mean ^a / ergot (%)
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II. ADVANCED PEARL MILLET HYBRID TRIAL-II (APMHT-II)

1	MBH - 118	39	41
2	MBH - 110	39	45
3	MBH - 117	43	65
4	BD - 763	51	73
5	PHB - 14	45	78
6	GHB - 27	43	78
7	RHB - 1	41	79
8	DD - 8356	47	79
9	CM - 46	43	81
10	RHB - 6	47	81
11	BJ - 104	41	84
12	MBH - 116	45	84
13	Hyb - 1011	47	85
14	5141 x L-6-2	47	88
15	ICH - 154	43	89
16	UCH - 6	47	91
17	PHB - 63	47	92
18	KCH - 388	47	92
19	BD - 56 - 40	43	93
20	COH - 2	50	93
21	UCH - 5	47	95
22	PHB - 24	45	96
23	GHB - 18	45	97
24	ICH 105 Local Check	45	71

III. INITIAL PEARL MILLET POPULATION TRIAL-IV (IPMPT-IV)

1	WCC 75	47	51
2	IVS P77	46	53
3	15 P Synthetic	54	56
4	COP 1	54	56
5	PSB - 15	47	58
6	PSB - 8	45	63
7	DC - 4	43	66
8	AMP - 4	51	66
9	GPB - 2	48	66
10	GPB - 1	43	70

Sl. No.	Entry	DTF	Mean ^a / ergot (%)
11	VBS - 3	41	70
12	KB - 370	47	73
13	ICMS - 7817	46	74
14	RIB - 216	43	74
15	PSB - 14	46	75
16	LCB - 1	41	77
17	HC - 5	47	77
18	AMP - 3	45	78
19	V No. 2	43	78
20	PSB 16	43	80
21	GPB - 3	47	81
22	RBS - 2	47	81
23	RCB - 2	43	83
24	BJ - 104	41	85
25	DT No.2	41	87
26	79-5	47	88
27	PHB 14	47	88
28	WCB - 77	46	89
29	KMB - 1008	50	90
30	RHR	45	91
31	79 - 1	45	92
32	ICH-105 Local Check	45	91

IV. ADVANCED PEARL MILLET POPULATION TRIAL-V (APMPT-V)

1	MC C-75	45	46
2	MC P-76	48	49
3	IVS-A-75	45	51
4	PSB-1378	46	53
5	SSCH-76	48	56
6	PSB - 11	48	58
7	WC-C75	43	65
8	ICMS-7703	45	66
9	PSB - 8	41	66
10	HC - 4	45	67

Sl. No.	Entry	DTF	Mean $\frac{a}{\text{ergot}}$ (%)
11	DC - 3	45	67
12	PSB - 1078	43	68
13	AMP - 2	48	73
14	PSB - 3	39	79
15	AMP - 1	48	82
16	BJ - 104	43	88
17	PHB - 14	41	91
18	ICH-105 Local Check	42	77

V. MALE STERILES AND POLLINATORS

1	5509 A	52	2
2	3972 A	48	13
3	6104 A	48	18
4	4002 A	48	28
5	3794 A	48	29
6	3768 A	43	31
7	5747 A	44	33
8	5508 A	48	34
9	TF 23B	48	36
10	5540 A-2	40	37
11	3776 A	43	50
12	4085 A	42	50
13	5122 A	48	53
14	3784 A	45	55
15	K-560-230	43	56
16	D-83-56	48	56
17	5644 A	42	56
18	5451 A	44	56
19	6030 A	43	58
20	5783 A	40	58
21	4173 A	40	59
22	5539 A	48	60
23	D 382	42	61
24	3891 A	45	62
25	3758 A	45	62

Sl. No.	Entry	DTF	Mean ^{a/} ergot (%)
26	D - 111	39	63
27	M 46	42	65
28	5518 A - 1	40	66
29	5148 A	39	68
30	5094 A	42	68
31	3879 A	43	69
32	3263 A	40	69
33	3762 A	43	71
34	4099 A	45	72
35	4030 A	48	72
36	Serere 36-142	43	73
37	3853 A	40	74
38	5711 A-1	39	75
39	5518A - 2	40	78
40	5928 A	40	78
41	3383 A	43	78
42	3891 A	45	79
43	D 763	48	80
44	5645 A	39	81
45	5054 A	39	83
46	5711 A	48	84
47	5540 A-1	45	84
48	4072 A	43	89
49	5141 A	40	91
50	ICH-105 Check	43	87
51	BJ-104 Check	42	83

^{a/} Mean of 10 to 20 bagged - inoculated heads

Appendix VI

Ergot, downy mildew (DM) and rust reactions, and days to 75 percent flowering (DTF) of 250 entry Advanced Ergot Screening-A during the 1979 rainy season at ICRISAT Center

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^b / (%)	Rust ^c / Sev.
			Mean ^a	Range		
1	700517-E-3-DM-1	53	3	0-15	0	5
2	Ex Bouchi 700638-3-2-E-3-2-DM-1	53	5	0-40	9.7	5
3	700688-E-1-DM-1	56	8	0-40	0	5
4	EB 63-1-2-E-1-DM-1	53	9	0-40	0	5
5	IP No.1926-E-3-DM-1	53	11	0-50	0	3
6	700790-E-3-DM-1	56	12	1-25	19	3
7	700434-I-E-1-DM-1	56	13	0-60	0	4
8	J 1553-E-3-3-DM-1	53	13	0-50	0	5
9	700487-II-E-1-DM-1	53	14	0-80	0	5
10	Ex Bouchi 700638-3-2-E-3-4-DM-1	53	14	0-98	1.7	5
11	700612-E-1-DM-1	56	14	0-80	0	4
12	700448-II-E-2-1-DM-1	53	18	0-70	1.6	5
13	IP No.1926-E-4-DM-1	53	18	0-60	0	3
14	700438-E-1-DM-1	50	18	0-60	0	5
15	700437-E-1-DM-1	53	19	1-80	1.7	5
16	3/4 HK 71-2-E-2-DM-1	50	19	0-60	0	5
17	SC-1(S4)27-3-E-4-DM-1	53	19	0-60	0	5
18	700483-I-E-1-DM-1	53	21	0-80	0	5
19	700569-I-E-1-DM-1	46	21	0-95	0	5
20	700790-E-2-DM-1	50	21	1-75	1.5	5
21	700507-E-5-DM-1	53	21	0-90	0	5
22	700043-E-1-DM-1	56	22	10-30	0	5
23	700790-E-1-DM-1	53	22	1-90	1.4	5
24	Ex Bouchi 700638-3-2-E-3-3-DM-1	50	23	0-75	23.8	5
25	700491-I-E-1-DM-1	44	24	5-50	0	5
26	700355-E-1-DM-1	46	25	0-75	0	5
27	700711-E-1-DM-1	50	25	1-75	0	5
28	3/4S 208-2-1-E-2-2-DM-1	50	25	1-70	0	4
29	J 797-1-E-2-1-DM-1	53	25	0-75	0	5
30	700158-I-E-1-DM-1	53	26	0-80	0	5
31	700599-E-9-DM-1	46	26	0-98	3.3	4
32	700583-E-5-DM-1	56	27	0-80	1.5	5
33	700572-E-1-1-DM-1	53	28	1-75	0	5
34	SC-2(M)5-4-E-1-2-DM-1	42	29	0-65	7.7	5
35	J 1553-E-3-2-DM-1	50	29	1-95	1.4	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
36	3/4 S 81-1-1-E-3-DM-1	53	30	1-75	1.6	4
37	700492-I-E-1-DM-1	50	30	0-80	0	5
38	3/4 HK 31-1-E-1-3-DM-1	53	30	1-75	0	3
39	IP No. 1926-E-1-DM-1	50	32	0-80	0	3
40	700446-II-E-2-3-DM-1	53	32	1-75	0	5
41	MPP 7135-3-1-E-2-DM-1	46	33	1-75	0	5
42	700546-I-E-1-DM-1	53	33	1-75	0	5
43	3/4 HK 133-3-E-1-2-DM-1	56	33	2-98	0	5
44	3/4 HK 133-3-E-1-4-DM-1	50	34	1-75	0	4
45	700583-E-3-DM-1	53	34	1-70	4	5
46	700448-II-E-2-2-DM-1	50	34	0-90	0	5
47	700568-E-1-DM-1	56	34	1-80	7	5
48	J 2210-2-E-2-2-DM-1	50	34	1-75	0	5
49	700490-E-1-DM-1	53	34	0-80	2	4
50	3/4 S 67-3-3-E-1-DM-1	50	34	1-80	0	5
51	IP No. 1926-E-2-DM-1	50	34	0-85	0	4
52	J 2210-2-E-3-4-DM-1	50	35	0-90	0	5
53	700607-E-3-DM-1	50	35	1-80	0	4
54	700599-E-2-DM-1	53	36	1-90	0	5
55	J 2210-2-E-3-1-DM-1	50	36	0-80	0	4
56	700489-II-E-2-2-DM-1	53	36	1-65	0	5
57	700489-II-E-2-1-DM-1	53	36	1-80	0	5
58	3/4 S 248-2-1-E-1-DM-1	50	36	0-95	4.9	5
59	700489-I-E-1-DM-1	50	37	1-90	0	4
60	700566-E-1-DM-1	53	37	1-80	0	5
61	700601-E-1-DM-1	56	38	1-80	11.6	5
62	MPP 7135-3-1-E-3-DM-1	45	38	10-80	0	5
63	SC-2(M)5-4-E-1-24-DM-1	42	38	1-85	12.5	5
64	700647-E-1-DM-1	50	39	1-95	0	5
65	3/4 ExB 70-1-1-E-3-DM-1	45	41	0-90	1.7	3
66	J 1553-E-2-2-DM-1	50	42	2-80	0	5
67	700572-E-1-2-DM-1	50	42	0-80	0	5
68	700448-I-E-2-3-DM-1	50	42	1-90	1.6	4
69	700507-E-3-DM-1	53	43	1-95	0	4
70	700619-E-3-DM-1	53	43	5-95	1.3	3

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
71	700037-I-E-3-DM-1	50	43	1-95	1.7	3
72	700537-E-1-2-DM-1	56	43	1-95	0	4
73	3/4 ExB 162-2-E-1-DM-1	53	44	1-90	0	3
74	700517-E-2-DM-1	46	44	1-98	0	5
75	700507-E-4-DM-1	50	45	0-90	0	4
76	700601-E-4-DM-1	46	45	1-80	1.4	5
77	3/4 S 138-2-1-E-1-DM-1	50	45	5-80	0.94	5
78	3/4 ExB 221-1-1-E-1-DM-1	45	45	2-80	0	4
79	J 797-1-E-3-3-DM-1	43	46	1-90	11	5
80	700599-E-10-DM-1	46	46	0-85	4.3	5
81	SC-2-(M) 13-4-E-1-DM-1	45	47	5-90	0	2
82	J797-1-E-3-5-DM-1	50	47	1-98	1.7	5
83	700622-E 3-DM-1	46	47	5-90	0	5
84	700489-II-E-1-2-DM-1	42	47	1-90	0	5
85	700479-E-1-DM-1	53	48	5-80	0	4
86	700489-II-E-1-1-DM-1	53	48	1-90	1.4	4
87	700492-I-E-3-DM-1	46	48	0-95	6	5
88	J797-1-E-3-2-DM-1	42	49	1-90	17	5
89	700438-E-2-DM-1	53	49	1-90	0	5
90	700599-E-5-DM-1	42	49	0-90	0	5
91	J 2238-E-4-3-DM-1	43	49	5-90	0	5
92	J 2238-E-4-1-DM-1	44	49	1-90	0	5
93	J 2210-2-E-2-1-DM-1	50	49	1-90	0	5
94	700507-E-2-DM-1	53	50	1-85	0	5
95	J 606-2-E-2-DM-1	50	50	0-98	1.6	3
96	SC-2(M)-5-4-E-1-3-DM-1	42	50	20-80	8.3	5
97	J 2210-2-E-3-2-DM-1	50	51	0-95	2.5	4
98	J 2210-2-E-1-1-DM-1	50	51	1-95	2.3	5
99	MPP 7135-3-1-E-1-DM-1	46	51	20-80	4.8	5
100	3/4 ExB 35-1-2-E-2-1-DM-1	45	51	5-98	0	5
101	700448-I-E-1-1-DM-1	50	51	1-95	7.8	4
102	3/4 ExB 35-1-2-E-1-1-DM-1	50	51	2-100	0	4
103	3/4 ExB 96-2-E-2-DM-1	50	51	10-80	5.3	5
104	J 703-1-E-3-1-DM-1	41	52	1-95	0	5
105	700546-I-E-2-DM-1	53	52	1-85	2	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^b / (%)	Rust ^c / Sev.
			Mean ^a	Range		
106	J 2210-2-E-3-3-DM-1	50	52	5-98	1.3	4
107	3/4 S 114-2-1-E-1-1-DM-1	50	53	5-90	0	5
108	700599-E-11-DM-1	46	54	0-90	3.3	5
109	3/4 S 81-1-1-F-1-DM-1	42	54	5-90	0	3
110	700130-E-1-DM-1	50	54	2-90	20.5	5
111	3/4 S 104-3-2-E-1-DM-1	45	54	2-98	0	5
112	700599-E-8-DM-1	42	55	5-90	0	5
113	3/4 ExB 70-1-1-E-1-DM-1	50	55	1-95	0	3
114	3/4 ExB 172-4-E-2-1-DM-1	56	55	10-85	0	5
115	J 1553-E-2-1-DM-1	42	55	5-90	0	5
116	700142-E-5-DM-1	53	55	5-80	1.2	4
117	3/4 ExB 172-4-E-1-1-DM-1	56	56	35-80	0	5
118	SC-1(S4) 27-3-E-3-DM-1	41	56	0-98	18	5
119	700490-E-2-DM-1	42	56	5-95	0	5
120	700491-I-E-2-DM-1	44	57	25-95	0	5
121	700438-E-3-DM-1	45	57	1-98	0	5
122	J 1553-E-3-1-DM-1	45	57	1-98	5.2	5
123	700599-E-7-DM-1	42	57	10-90	0	5
124	700037-I-E-1-DM-1	46	57	25-98	0	4
125	3/4 S 60-1-1-E-1-DM-1	46	58	5-98	0	5
126	700601-E-2-DM-1	46	58	1-90	4.8	5
127	SC-2 (M) 13-4-E-2-DM-1	45	58	0-90	0	2
128	700219-E-1-DM-1	50	58	10-85	2	5
129	3/4 ExB 48-1-2-E-1-DM-1	50	58	5-98	0	5
130	700448-I-E-2-2-DM-1	53	58	5-95	0	4
131	J 2238-F-4-4-DM-1	50	58	1-95	0	5
132	700619-E-5-DM-1	50	58	20-98	0	4
133	700599-E-3-DM-1	46	58	10-90	0	5
134	700355-E-2-DM-1	43	59	1-95	0	5
135	3/4 S 49-2-1-E-2-DM-1	50	59	25-90	0	5
136	SC-1(S4) 27-2-E-3-DM-1	42	59	20-98	5.1	5
137	3/4 S 114-2-1-E-2-2-DM-1	45	59	1-95	2.5	5
138	700537-E-1-1-DM-1	56	60	1-95	0	4
139	700569-I-F-2-DM-1	50	60	1-90	0	5
140	700599-E-6-DM-1	42	60	20-90	2.2	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
141	700599-E-4-DM-1	46	61	5-95	0	5
142	700489-II-E-1-3-DM-1	43	61	1-98	0	4
143	700507-E-1-DM-1	44	61	20-90	0	5
144	700112-E-1-DM-1	46	61	1-98	6.1	5
145	J 1553-E-3-4-DM-1	53	61	5-90	0	5
146	J 2210-2-E-2-3-DM-1	45	61	5-95	0	5
147	700583-E-4-DM-1	50	62	1-90	0	5
148	3/4 ExB 70-1-1-E-2-DM-1	50	62	10-95	0	4
149	700467-I-E-1-DM-1	46	62	5-98	3.5	5
150	700437-E-2-DM-1	43	62	0-95	0	5
151	J 2238-E-1-3-DM-1	42	62	1-95	0	5
152	3/4 S 104-3-2-E-2-DM-1	53	62	20-98	0	5
153	MPP 7135-3-1-E-4-DM-1	50	62	5-95	6.2	5
154	700537-E-2-1-DM-1	46	63	1-98	0	5
155	3/4 ExB 172-4-E-2-2-DM-1	50	63	35-95	0	4
156	700622-E-2-DM-1	44	63	10-90	0	5
157	J 606-2-E-1-DM-1	45	64	1-98	5.4	5
158	700278-E-1-DM-1	53	64	10-95	0	5
159	700619-E-6-DM-1	50	64	5-98	0	5
160	700042-E-2-DM-1	41	65	1-98	0	5
161	700142-E-8-DM-1	46	65	10-98	0	3
162	J 2210-2-E-3-5-DM-1	45	65	1-98	0	5
163	700438-E-4-DM-1	45	65	1-99	0	4
164	700326-I-E-I-DM-1	53	65	1-90	22.2	5
165	700549-E-1-DM-1	50	66	1-98	0	5
166	700142-E-4-DM-1	46	66	10-95	5.5	4
167	700583-E-1-DM-1	46	66	10-95	20	5
168	SC-2(M) 13-4-E-7-DM-1	43	66	45-90	0	3
169	3/4 S 97-2-1-E-1-DM-1	45	66	10-90	0	5
170	700619-E-7-DM-1	46	66	10-90	0	4
171	3/4 ExB 35-1-2-E-2-3-DM-1	42	66	5-90	1.4	5
172	3/4 S 60-1-1-E-2-DM-1	45	66	5-98	0	5
173	700619-E-4-DM-1	42	66	0-100	2.6	4
174	700517-E-1-DM-1	41	67	25-98	0	5
175	ExBouchi 700638-3-2-E-3-1-DM-1	45	67	35-98	1.7	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^b / (%)	Rust ^c / Sev.
			Mean ^a	Range		
176	J 797-1-E-3-1-DM-1	43	67	5-90	4.5	5
177	700599-E-1-DM-1	46	67	10-98	0	5
178	700142-E-1-DM-1	50	67	35-90	0	4
179	3/4 S 248-2-1-E-2-DM-1	45	68	10-100	0	5
180	SC-2(M)13-4-E-4-DM-1	41	68	10-98	0.8	2
181	700622-E-1-DM-1	41	68	15-95	0	4
182	SC-1(S4)27-3-E-6-DM-1	45	68	35-90	7	3
183	ExBouchi 700638-3-2-E-2-1-DM-1	57	68	40-95	3.4	5
184	700037-I-E-2-DM-1	50	69	1-98	0	4
185	3/4 HK 133-3-E-1-5-DM-1	53	69	25-95	3	4
186	700448-I-E-2-1-DM-1	46	69	2-95	0	4
187	3/4 S 157-2-2-E-1-DM-1	43	69	2-100	0	5
188	3/4 S 98-1-4-E-1-DM-1	50	69	10-95	0	5
189	3/4 HK 71-2-E-1-DM-1	41	70	1-95	0	5
190	3/4 S 97-2-1-E-2-DM-1	53	70	45-98	0	3
191	700439-I-E-1-DM-1	41	70	35-95	0	5
192	SC-2(M)13-4-E-6-DM-1	41	71	10-100	0	3
193	700448-I-E-1-2-DM-1	41	71	1-98	0	4
194	700619-E-1-DM-1	42	71	20-95	0	5
195	3/4 E: 35-1-2-E-2-2-DM-1	43	71	1-98	0	5
196	SC-1(S4)27-3-E-5-DM-1	46	71	1-100	0	3
197	J 2238-E-4-2-DM-1	41	72	25-98	0	5
198	700622-E-4-DM-1	46	72	40-95	2.8	5
199	SC-1(S4)27-3-E-2-DM-1	41	72	35-90	4.6	5
200	700797-E-2-DM-1	53	72	40-95	0	5
201	3/4 ExB 35-1-3-E-1-DM-1	42	73	10-98	1.5	5
202	700142-E-2-DM-1	46	73	35-90	3.3	4
203	J 703-1-E-3-3-DM-1	43	73	5-98	0	5
204	3/4 ExB 221-1-1-E-2-DM-1	41	73	1-95	0	5
205	3/4 S 67-3-1-E-1-1-DM-1	41	74	10-100	0	5
206	SC-2(M)-5-4-E-1-1-DM-1	44	74	1-95	14.5	3
207	700142-E-7-DM-1	46	75	35-98	3.6	3
208	J 2238-E-1-2-DM-1	41	75	10-98	4.4	5
209	3/4 HK 31-1-E-1-1-DM-1	43	75	1-100	1	5
210	3/4 HK 133-3-E-1-1-DM-1	43	75	35-98	0	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
211	700142-E-6-DM-1	41	76	5-98	3.3	3
212	700492-I-E-2-DM-1	42	76	2-100	3.3	5
213	3/4 S 67-3-1-E-1-2-DM-1	42	76	50-98	0	5
214	700142-E-3-DM-1	46	76	50-95	1.7	5
215	700622-E-5-DM-1	42	77	40-100	0	5
216	3/4 S 114-2-1-E-1-2-DM-1	42	77	50-98	0	4
217	700583-E-2-DM-1	46	77	25-98	0	5
218	3/4 HK 133-3-E-1-6-DM-1	53	77	35-95	0	5
219	700441-E-2-DM-1	44	78	50-98	0	5
220	3/4S114-2-1-E-2-1-DM-1	45	78	35-98	1.5	5
221	700549-E-2-DM-1	50	78	35-98	0	5
222	3/4S 81-1-E-2-DM-1	42	79	40-98	0	5
223	3/4 ExB 35-1-2-E-1-2-DM-1	43	79	25-98	0	5
224	700441-E-1-DM-1	41	79	50-98	0	5
225	ExBouchi 700638-3-2-E-2-3-DM-1	43	80	40-98	12.2	5
226	3/4 HK 82-E-2-1-DM-1	41	80	10-100	5	5
227	3/4S 157-2-3-E-DM-1	44	81	40-98	0	5
228	J 703-1-E-3-4-DM-1	41	81	40-98	0	5
229	J 2210-2-E-3-6-DM-1	45	81	40-100	0	5
230	J 606-2-E-4-DM-1	41	81	25-100	13.6	5
231	700042-E-1-DM-1	42	81	40-100	1.5	5
232	SC-1(S4)27-2-E-1-DM-1	42	81	50-98	1.5	4
233	J 797-1-E-3-4-DM-1	45	81	50-99	1.7	5
234	700439-I-E-2-DM-1	50	81	35-98	0	4
235	3/4S 24-1-E-1-1-DM-1	44	82	50-98	0	4
236	3/4S 47-1-E-1-DM-1	42	82	50-99	0	5
237	3/4S 208-2-1-E-2-1-DM-1	44	82	50-100	4.3	5
238	J 2238-E-1-1-DM-1	44	82	50-98	28.4	5
239	700583-E-6-DM-1	46	83	60-100	1.4	5
240	ExBouchi 700638-3-2-E-2-2-DM-1	44	83	35-98	0	5
241	700619-E-2-DM-1	46	83	50-98	2.8	4
242	SC-1(S4)27-3-E-1-DM-1	42	83	50-100	0	5
243	3/4S 98-2-3-E-1-DM-1	45	84	40-98	0	3
244	SC-1(S4)27-2-E-2-DM-1	41	84	10-100	18.2	5
245	3/4 ExB 96-2-E-1-DM-1	43	84	35-98	0	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
246	3/4S 152-1-1-E-1-DM-1	42	84	50-99	0	5
247	SC-2(M) 13-4-E-3-DM-1	43	86	50-100	0	3
248	SC-2(M) 13-4-E-5-DM-1	41	86	50-100	0	3
249	3/4S 152-2-1-E-1-DM-1	42	86	60-100	0	5
250	J 703-1-E-3-2-DM-1	41	87	50-100	0	4
251	700797-E-1-DM-1	46	89	40-100	0	5
252	3/4 ExB 136-3-1-E-1-DM-1	45	89	50-100	0	5
253	3/4S 49-2-1-E-1-DM-1	44	89	75-98	0	5
254	J 606-2-E-3-DM-1	45	89	75-98	6.5	4
255	SC-1(S4)27-2-E-4-DM-1	41	90	60-100	23.7	5
256	3/4 HK 133-3-E-1-3-DM-1	42	91	70-100	0	4
	5141A Check	40	78	25-98	-	5
	ICH 105 "	39	83	50-98	-	5
	BJ 104 "	39	83	50-98	50.7	5

^{a/} Mean of 20 bagged-inoculated heads.

^{b/} Recorded in downy mildew nursery during the post rainy season 1978-79.

^{c/} On 1-5 scale during the rainy season 1978-79.

Appendix VII. Ergot, downy mildew (DM) and rust reactions, and days to 75 percent flowering (DTF) of 98 entry Advanced Ergot screening - B during the rainy season 1979 at ICRISAT Center

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
1	E-41-E-1-DM-1	51	<1	0-5	2.2	4
2	SDN 347-1-E-1-DM-1	54	5	0-40	0	4
3	D-45-359-E-1-DM-1	51	6	0-35	0.4	5
4	SDN 496-E-1-DM-1	54	6	0-20	0	5
5	D-235C-E-1-DM-1	56	8	0-60	0	4
6	D-45-416-E-1-DM-1	56	8	0-50	0	5
7	700377-E-1-DM-1	51	9	0-30	0	3
8	E-69-E-1-DM-1	56	9	1-40	0	5
9	SDN 720-1-E-1-DM-1	54	9	0-35	0	4
10	P-121-E-1-DM-1	51	11	0-50	0	5
11	MP-17-E-1-DM-1	54	14	1-50	1.5	5
12	D-821-E-1-DM-1	56	14	0-65	0	4
13	D-256-E-1-DM-1	50	16	1-60	0	3
14	J 2174-E-6-DM-1	50	16	0-80	0	5
15	D-1731-2-E-1-DM-1	51	17	0-80	0	5
16	Nigerian Comp(C1)-E-1-DM-1	54	18	0-50	0	5
17	E-31-E-2-DM-1	51	21	1-65	0	4
18	D-209-E-1-DM-1	50	21	0-65	0.5	3
19	E-75-E-1-DM-1	56	22	1-50	0	3
20	P-96-E-1-DM-1	45	22	0-75	0	5
21	D-No. 3-E-1-DM-1	54	23	1-75	1.7	2
22	D-14-E-3-DM-1	46	24	0-80	5.3	2
23	E-64-E-1-DM-1	51	24	0-75	2.1	5
24	700396-E-1-DM-1	51	25	0-90	0	5
25	D-102C-3-E-1-DM-1	51	26	0-80	3.7	5
26	MP-27-E-1-DM-1	50	28	0-60	11.5	5
27	700726-E-3-DM-1	50	28	1-80	0	5
28	E-127-E-1-DM-1	54	31	2-90	0	4
29	P-151-E-1-DM-1	50	32	0-75	1.4	5
30	P-20-E-1-DM-1	45	32	1-80	0	5
31	E-145-E-1-DM-1	50	33	0-90	1.8	5
32	SAR 183-E-1-DM-1	53	34	1-90	14.8	5
33	J 2000-I-E-1-DM-1	50	37	1-85	0	5
34	P-77-E-1-DM-1	47	38	0-90	0	4
35	700430-E-1	50	39	1-90	0	4

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
36	D-128C-1-E-1-DM-1	51	39	10-65	0	5
37	D-173-1-E-3-DM-1	56	40	0-85	1.7	3
38	D-75C-1-E-1-DM-1	51	41	0-85	1.9	3
39	D-45-414-E-1-DM-1	51	42	0-90	0.5	5
40	SAR 441-E-1-DM-1	53	43	1-90	0	2
41	P-23-E-1-DM-1	45	45	2-80	0	4
42	D-45-329-E-1-DM-1	42	45	40-50	0	4
43	SAR 443-E-1-DM-1	42	49	10-80	0	4
44	D-267-E-1-DM-1	45	49	1-85	10.9	5
45	P-89-E-1-DM-1	51	49	2-98	0	5
46	D-45-411-E-1-DM-1	51	50	1-85	1.6	5
47	D-102C-2-E-1-DM-1	53	50	10-80	1.2	5
48	D-45-442-E-1-DM-1	56	50	50-50	0	3
49	D-145C-E-1-DM-1	43	50	0-80	0	2
50	D-No.2-E-1-DM-1	45	50	1-90	4.7	5
51	E-10-E-1-DM-1	45	53	0-95	0	5
52	SAR 446-E-1-DM-1	45	54	1-98	1.5	5
53	P-13-E-1-DM-1	38	55	20-90	1.7	4
54	SAR 143-E-1-DM-1	40	55	5-90	1.6	5
55	D-No.9-E-1-DM-1	37	56	5-90	1.4	4
56	D-145C-1-E-1-DM-1	45	59	1-90	1.5	4
57	MP-30-E-1-DM-1	45	63	35-85	2.8	5
58	D-45-382-E-1-DM-1	54	63	2-90	0	3
59	SAR 394-E-1-DM-1	45	63	10-98	4.8	5
60	D.No.15-E-1-DM-1	43	65	20-98	0	5
61	D-234C-1-E-1-DM-1	37	66	0-98	0	5
62	D-106-E-1-DM-1	45	66	10-90	0	4
63	SAR 299-E-1-DM-1	45	67	25-98	1.5	4
64	SAR 139-E-1-DM-1	41	67	25-95	4.5	5
65	S1.No.14(114-12)-E-1-DM-1	43	67	20-98	17.2	4
66	MPP 7132-7-1-E-1-DM-1	41	68	1-90	0	5
67	SAR 507(E-1-DM-1	41	68	10-98	0	5
68	SAR 100-E-1-DM-1	37	68	10-90	1.4	5
69	SAR 300-E-1-DM-1	39	68	40-95	15.1	5
70	E-23-E-1-DM-1	42	69	20-98	3.0	5

Entry No.	Pedigree	DTF	Ergot severity (%)		DM ^{b/} (%)	Rust ^{c/} Sev.
			Mean ^{a/}	Range		
71	SAR 210-E-1-DM-1	38	70	1-98	6.0	5
72	D-128C-2-E-1-DM-1	41	70	10-100	12.3	4
73	23 D ₂ B-30-522-P2-E-1-DM-1	37	72	35-98	1.0	5
74	MC-7022-E-1-DM-1	50	72	35-98	0	5
75	MC-7044-E-1-DM-1	50	72	50-90	0	4
76	SAR 247-E-1-DM-1	45	73	5-98	4.7	5
77	SAR 432-E-1-DM-1	41	75	0-98	1.7	3
78	T.Series-4-E-1-DM-1	43	76	5-100	0	5
79	SAR 208-E-1-DM-1	37	76	50-98	12	5
80	SAR 109-E-1-DM-1	39	77	40-98	2	5
81	SAR 437-E-1-DM-1	45	78	0-100	2.9	5
82	SAR 301-E-1-DM-1	38	78	40-98	3.2	5
83	D-138C-1-E-1-DM-1	51	78	35-98	0	5
84	SAR 402-E-1-DM-1	37	79	25-100	2.9	5
85	SAR 99-E-1-DM-1	41	79	20-98	2.1	5
86	SAR 156-E-1-DM-1	39	79	25-100	0	4
87	PSB-3-E-1-DM-1	41	80	50-100	1.7	5
88	SAR 225-E-1-DM-1	45	81	40-98	19.4	5
89	MP-10-E-1-DM-1	42	82	50-100	0.5	5
90	E-137-E-1-DM-1	43	83	50-100	4.8	5
91	SAR 342-E-1-DM-1	39	83	40-98	4.2	5
92	SAR 153-E-1-DM-1	39	84	5-100	10.5	3
93	SAR 366-E-1-DM-1	39	86	60-98	0	5
94	IP No.1982-E-4-DM-1	50	86	50-100	0	5
95	SAR 399-E-1-DM-1	42	88	50-100	7.2	5
96	SAR 404-E-1-DM-1	42	88	70-100	0	5
97	SAR 439-E-1-DM-1	37	88	65-100	0	5
98	SAR 433-E-1-DM-1	45	90	75-100	3.6	5
	5141A Check	43	68	20-90		
	BJ 104 Check	42	83	50-100		
	ICH 105 Check	43	87	50-100		

^{a/} Mean of 20 bagged - inoculated heads

^{b/} Recorded in downy mildew nursery in the post rainy season 1978-79

^{c/} Scored on 1-5 scale

Appendix VIII. Ergot, Downy mildew (DM) and rust reactions, and days to 75 percent flowering (DTF) of 37 entry Advanced Ergot Screening C during Kharif 1979 at ICRISAT Center.

Sl. No.	Pedigree	DTF	Ergot severity (%)	DM ^{b/} (%)	Rust ^{c/}
1	J 797-1-E-1-5-DM-1	51	3	0	5
2	J 1999-E-2-4-DM-1	45	7	0	5
3	3/4 ExB 77-2-1-E-1-DM-1	56	7	0	2
4	700708-I-E-2-DM-1	59	8	9.6	5
5	700708-I-E-1-DM-1	56	9	12.5	5
6	3/4 S 143-3-2-E-1-1	54	10	0	5
7	700190-E-4-DM-1	56	14	3.1	5
8	700577-E-3-DM-1	54	15	0	5
9	700708-I-E-4-DM-1	56	20	0	5
10	700190-E-2-DM-1	50	22	2	5
11	ND 2282-79-1-E-2-2-DM-1	50	23	1.7	2
12	700190-E-5-DM-1	54	24	0	5
13	700190-E-3-DM-1	56	25	0	5
14	J 703-1-E-1-DM-1	54	28	2	5
15	ND 2282-79-1-E-2-6-DM-1	53	28	0	4
16	700457-E-4-DM-1	56	29	0	4
17	SC-1(S4)27-2-E-1-DM-1	45	30	0	5
18	J 1999-E-2-3-DM-1	56	32	0	5
19	J 797-1-E-1-2-DM-1	56	33	0	5
20	Ex Bouchi 700638-3-2-E-1-1-DM-1	53	33	0	5
21	J 797-1-E-1-4-DM-1	46	36	0	5
22	ND 2282-79-1-E-2-7-DM-1	56	37	7.5	4
23	ND 2282-79-1-E-2-8-DM-1	50	38	4.7	4
24	700741-E-1-DM-1	54	38	13.8	5
25	J 797-1-E-1-6-DM-1	50	39	0	5
26	J 2238-E-2-1-DM-1	53	41	0	5
27	J 797-1-E-1-1-DM-1	51	42	8	5
28	700457-E-1-DM-1	50	42	0	5
29	700164-E-1-1	46	44	0	5
30	700626-E-1-DM-1	50	46	0	5
31	J 797-1-E-1-3-DM-1	45	47	0	5
32	ND 2282-79-1-E-2-1-DM-1	53	50	0	2
33	700577-E-2-DM-1	56	50	0	5
34	J 797-1-E-2-1-DM-1	51	56	9.8	5
35	J 1999-E-2-2-DM-1	56	71	0	5

S1 No.	Pedigree	DTF	Ergot severity (%)	DM ^{b/} (%)	Rust ^{c/}
36	3/4 ExB 77-2-1-E-2-DM-1	56	74	0	2
37	ND 2282-79-1-E-2-4-DM-1	56	74	0	5
	BJ 104	46	72	-	-
	5141 A	47	78	-	-
	ICH 105	46	80	-	-

a/ Mean of 20 bagged-inoculated heads

b/ Scored in downy mildew nursery in Rabi 1978-79

c/ Recorded on 1-5 scale in R 1978-79

Appendix I. Ergot reactions and days to 75 percent flowering (DTF) of 204 entry Advanced Ergot Screening-D during the rainy season 1979 at ICRISAT Center

Entry No.	Pedigree	TF	Ergot infection (%)	
			Mean	Range
1	45-367-E-1	59	1	1-1
2	45-343-E-1	59	1	1-5
3	SDN 347-1-E-2	56	2	1-5
4	45 - 387-E-1	59	5	5-5
5	45-378-E-3	56	8	1-35
6	700377-E-2	51	8	1-50
7	SC-2(M)5-4-E-2	43	9	1-50
8	45-372-E-1	55	10	1-50
9	700404-E-2	43	11	1-80
10	SDN 617-E-1	56	11	1-25
11	SDN 347-1-E-3	56	11	2-30
12	45-393-E-1	55	12	1-50
13	P-77-E-2	54	12	1-60
14	J 2174-E-2	54	15	1-60
15	45-424-E-1	57	15	1-40
16	E-68-E-1	56	15	2-50
17	J 2000-I-E-2	43	16	1-60
18	700505-E-1	50	18	1-60
19	SC-2(M)5-4-E-1	43	18	1-80
20	D-194C-1-E-1	51	19	1-80
21	IP No.1982-E-3	51	19	2-50
22	P-19-E-2	51	19	1-60
23	P-121-E-2	45	19	1-50
24	D-29-E-2	55	19	1-50
25	MPP 7135-3-1-E-1	51	19	1-60
26	D-235C-E-2	51	20	5-40
27	D-22-E-1	51	20	1-60
28	D-1351-3-E-1	54	22	1-75
29	45-403-E-1	51	23	1-90
30	D-185-E-2	55	23	1-50
31	45-328-E-1	56	24	1-90
32	45-421-E-1	47	24	1-60
33	IP No.1926-E-1	45	24	1-80
34	D-161C-E-1-2	56	24	5-50
35	E-145-E-3	51	24	1-65

Entry No.	Pedigree	DTF	Ergot infection (%)	
			Mean*	Range
36	D-No. 13-E-1	51	24	1-90
37	D-14-E-2	51	24	1-60
38	E-145-E-2	54	25	1-60
39	45-378-E-1	55	25	1-80
40	700726-E-1	41	25	1-50
41	700599-E-2	45	26	1-80
42	E-55-E-2	47	26	1-70
43	45-343-E-2	59	28	1-60
44	E-270-E-1	51	28	1-80
45	D-No. 10-E-1	54	28	2-80
46	45-416-E-3	51	29	1-80
47	700583-E-1	54	29	2-90
48	J 2238-E-4-3	45	29	1-80
49	J 606-2-E-5	46	29	2-90
50	D-185-E-1	55	29	1-65
51	D-267-E-2	51	29	1-75
52	45-416-E-2	51	30	1-80
53	D-194C-3-E-1	51	30	1-98
54	D-No. 3-E-2	54	30	2-80
55	700619-E-2	45	30	5-75
56	D-1935-3-E-1	54	30	1-80
57	J 703-1-E-1	50	30	1-80
58	J 1553-E-1	51	30	1-75
59	Somerset-757-E-1	51	31	5-60
60	700583-E-2	54	31	1-80
61	D-14-E-1	47	32	1-80
62	45-378-E-4	55	32	1-80
63	P-19-E-1	54	32	1-80
64	D-29-E-1	51	32	1-80
65	SC-2(M)5-4-E-4	42	33	1-80
66	D-241-E-1	51	33	2-60
67	45-324-E-2	54	33	1-80
68	D-37-E-1	51	33	1-70
69	D-1351-2-E-1	54	34	1-90
70	D-147-E-1	55	34	1-60
71	700009-E-2	47	35	1-60
72	D-1731-1-E-2	54	35	1-95
73	J 797-1-E-2	51	36	1-80
74	D-256-E-3	51	36	1-75
75	E-33-E-1	54	36	1-80

Entry No.	Pedigree	DTF	Ergot infection (%)	
			Mean *	Range
76	J 606-2-E-1	50	36	1-90
77	E-131 S1 1976 D-E-1	51	37	1-90
78	Ex Bouchi 700638-3-2-E-3	42	37	1-90
79	45-418-E-1	51	37	1-98
80	P-23-E-2	54	37	1-90
81	ND 2282-79-1-E-2	45	38	2-80
82	SDN 496-E-3	56	38	1-80
83	D-246-E-1	55	38	1-80
84	700599-E-1	45	38	1-95
85	D-1731-1-E-1	56	39	1-90
86	45-418-E-2	51	39	1-80
87	D-121C-2-E-2	45	39	1-80
88	700009-E-1	55	39	2-80
89	IP No. 1926-E-2	51	40	1-80
90	P-22-E-2	54	41	1-80
91	Ex Bouchi 700638-3-2-E-2	41	41	1-80
92	Samaru-769-E-1	51	41	5-80
93	45-440-E-1	51	42	1-80
94	D-288-E-1	47	42	1-80
95	E-68-E-2	56	42	1-90
96	45-332-E-1	54	42	1-98
97	J 2174-E-4	43	43	1-80
98	D-No. E13-E-2	54	43	1-90
99	D-281-E-1	51	43	1-80
100	D-No. 10-E-2	45	44	5-95
101	700556-E-1	47	44	5-80
102	SC-1(S4)27-2-E-5	50	44	1-90
103	J 2210-2-E-2	45	45	5-80
104	D-157-E-1	55	45	1-70
105	E-17-E-1	54	45	1-90
106	SC-1(S4)27-2-E-2	46	46	5-98
107	ND 2282-79-1-E-2	50	46	1-80
108	D-121C-3-E-2	54	47	10-90
109	700792-E-1	42	47	2-85
110	E-31-E-4	51	47	5-90

Entry No.	Pedigree	DTF	Ergot infection (%)	
			Mean*	Range
111	SAR 507-E-2	45	48	5-98
112	P-19-E-3	51	48	1-95
113	P-121-E-4	54	48	5-95
114	D-No.13-E-3	51	48	1-98
115	D-248C-2-E-1	51	49	2-95
116	E-17-E-2	54	49	1-90
117	J 1999-E-1	51	49	5-80
118	D-200-E-2	51	51	10-80
119	700142-E-2	51	51	1-98
120	SAR 143-E-2	43	51	1-98
121	E-63-E-1	51	51	1-80
122	D-200-E-1	54	52	1-85
123	J 2174-E-5	42	52	2-85
124	K-560(K)-E-1	45	52	20-90
125	E-64-E-2	51	53	1-85
126	SAR 143-E-4	45	53	5-98
127	E-10-E-2	47	53	5-85
128	45-421-E-2	51	53	1-90
129	J 797-1-E-1	50	54	1-90
130	E-55-E-1	47	54	1-80
131	J 2174-E-1	46	54	5-80
132	J 1553-E-2	54	54	1-90
133	J 797-1-E-4-2	50	55	1-90
134	P-20-E-4	40	55	10-80
135	D-128C-1-E-2	45	55	1-90
136	IP No.1982-E-2	42	56	10-90
137	J 1553-E-3-5	45	56	1-90
138	700619-E-1	41	57	1-98
139	D-24-2-E-1	54	57	1-90
140	SC-1(S4)27-3-E-2	51	57	5-95
141	700434-1-E-1	42	57	10-85
142	D-194C-1-E-2	42	58	10-95
143	45-441-E-1	57	58	50-65
144	J 2174-E-3	44	58	1-90
145	P-22-E-1	42	59	2-98
146	J 2210-2-E-1	50	59	1-85
147	SAR 143-E-2	47	59	10-98
148	D-106-E-2	47	59	1-90
149	D-121C-3-E-1	47	60	2-90
150	J 797-1-E-4-1	50	60	2-90

Entry No.	Pedigree	DTF	Ergot infection (%)	
			Mean*	Range
151	700396-E-2	45	60	35-85
152	MPP 7135-3-1-E-6	43	61	290
153	SDN-496-E-2	54	62	35-98
154	SDN 720-1-E-2	51	62	35-90
155	45-413-E-1	47	62	1-95
156	E-31 - E-1	54	63	10-90
157	J 2238-E-2	45	64	30-90
158	45-324-E-1	54	65	10-90
159	SDN 720-1-E-3	51	65	35-90
160	700142-E-1	51	65	40-90
161	D-121C-1-E-1	41	66	10-100
162	SAR 399-E-2	43	66	20-95
163	D.No.14-E-1	51	66	5-95
164	SAR 432-E-2	47	67	10-98
165	P-23-E-5	46	67	10-95
166	700619-E-1	42	67	1-100
167	ND 2282-79-1-E-1	54	68	10-98
168	700726-E-2	41	68	20-90
169	P-20-E-2	51	68	10-100
170	SAR 156-E-3	43	68	25-98
171	700142-E-1-1	41	68	15-95
172	J 2238-E-1	41	69	10-95
173	700404-E-1	47	69	10-98
174	E-31-E-3	51	69	1-98
175	SAR 143-E-5	46	69	25-100
176	SAR 300-E-2	42	70	5-98
177	SAR 394-E-2	47	71	25-100
178	J 703-1-E-3-5	50	72	2-98
179	MP 10-E-2	41	73	10-98
180	SAR 301-E-2	40	73	45-90
181	J 606-2-E-2	41	74	35-98
182	SC-1(S4)27-3-E-1	42	74	1-100
183	IP No.1926-E-2	42	74	25-100
184	45-326-E-1	54	75	50-90
185	P-23-E-3	56	75	50-90
186	SC-1(S4)27-2-E-1	41	76	20-98
187	MPP 7135-3-1-E-2	42	77	40-98
188	P-121-E-3	42	77	1-98
189	D-106-E-3	47	78	35-98
190	S1.No.14 (114-12)E-2	45	78	35-100

Entry No.	Pedigree	DTF	Ergot infection (%)	
			Mean*	Range
191	MP 30-E-2	45	79	35-98
192	SAR 426-E-1	45	79	50-98
193	SC-2(M)13-4-E-2	42	79	20-100
194	700599-E-1	42	79	50-100
195	SC-2(M)13-4-E-1	47	81	50-100
196	P-23-E-4	54	81	50-100
197	IP No.1982-E-1	41	81	50-98
198	P-20-E-3	45	82	35-100
199	MP 30-E-3	47	82	50-98
200	SAR 156-E-2	41	82	25-100
201	ND 2282-79-1-E-1	44	82	25-100
202	P-151-E-2	42	85	50-100
203	SC-1(S4)27-3-E-3	42	90	70-100
204	SC-2(M)13-4-E-1	42	93	80-100
	ICH 105 Check	40	75	35-100
	5141A Check	40	82	50-100
	BJ 104	40	82	50-100

*Mean of 20 bagged-inoculated heads

Appendix . Ergot reaction and days to 75 percent flowering (DTF)
of 113 entry Adv. Ergot screening-E during 1979 rainy
season at ICRISAT Center

Sl. No.	Pedigree	DTF	Ergot severity (%)	
			Mean ^{a/}	Range
1	700448-II-E-2-3-DM-1	57	<1	0-2
2	ND 2282-79-1-E-2-3-DM-1	59	1	0-5
3	700434-I-E-1-DM-1	57	1	0-2
4	700448-I-E-2-DM-3	57	1	0-10
5	700599-E-8-DM-1	41	1	0-10
6	P-86-E-1-DM-1	57	5	0-20
7	700490-E-2-DM-4	57	6	0-20
8	D-235C-E-1-DM-1	59	6	0-50
9	ND-2282-79-1-E-2-7-DM-1	59	7	0-60
10	700448-I-E-2-1-DM-4	59	8	0-20
11	ND 2282-79-1-E-2-1-DM-1	57	8	0-45
12	700443-II-E-2-3-DM-2	57	11	0-90
13	700490-E-2-DM-3	57	11	0-75
14	700489-II-E-2-2-DM-1	57	12	1-75
15	E-69-E-1-DM-3	55	13	0-20
16	700612-E-1-DM-1	54	14	0-50
17	D-45-329-E-1-DM-1	57	14	0-75
18	700608-E-1-DM-1	52	15	1-60
19	E-69-E-1-DM-2	55	15	0-50
20	700479-E-1-DM-1	57	17	0-80
21	700489-I-E-1-DM-2	57	18	1-75
22	700490-E-2-DM-2	57	18	0-60
23	3/4 ExB 162-2-E-1-DM-1	57	18	1-80
24	J 2174-E-6-DM-2	57	18	2-45
25	700489-I-E-1-DM-1	48	19	1-80
26	700601-E-3-DM-1	52	20	2-50
27	P-121-E-1-DM-1	54	21	1-75
28	700443-I-E-2-1-DM-5	48	21	0-80
29	E-69-E-1-DM-1	52	23	2-65
30	E-145-E-1-DM-1	57	23	0-60
31	MPP 7135-3-1-E-2-DM-1	61	24	0-75
32	700797-E-2-DM-1	54	24	2-70
33	3/4 ExB 70-1-1-E-1-DM-1	57	25	0-70
34	700601-E-3-DM-2	52	25	0-75
35	P-96-E-1-DM-2	57	26	1-80

Sl. No.	Pedigree	DTF	Ergot severity (%)	
			Mean ^a	Range
36	700437-E-2-DM-1	52	26	2-60
37	700489-II-E-1-2-DM-1	57	26	2-80
38	700572-E-1-2-DM-1	52	27	1-65
39	SC-2(M)13-4-E-3-DM-2	55	28	0-100
40	3/4 HK 133-3-E-1-2-DM-1	54	29	1-90
41	3/4 ExB 35-1-2-E-2-2-DM-1	48	29	1-80
42	700489-II-E-1-3-DM-1	57	29	0-70
43	J 2238-E-4-4-DM-1	57	29	0-95
44	3/4 S 98-2-3-E-1-DM-2	47	30	0-90
45	3/4 HK 133-3-E-1-3-DM-1	52	31	1-80
46	700549-E-2-DM-1	57	31	0-95
47	E-127-E-1-DM-2	52	31	0-90
48	3/4S 24-1-E-1-1-DM-2	48	31	0-75
49	700278-E-1-DM-1	57	32	2-80
50	700583-E-6-DM-1	52	32	2-60
51	D-267-E-1-DM-1	48	33	1-98
52	700583-E-5-DM-2	44	34	0-90
53	700112-E-1-DM-1	52	34	2-80
54	MPP 7135-7-1-E-1	47	34	0-75
55	700448-I-E-2-1-DM-1	59	35	0-70
56	700442-E-1-DM-1	59	35	0-75
57	3/4 ExB 221-1-1-E-1-DM-1	52	35	1-90
58	SC-1(S4)27-2-E-1-DM-1	55	36	5-75
59	D-45-414-E-1-DM-1	52	36	5-90
60	J 2174-E-6-DM-1	52	36	5-85
61	J 703-1-E-3-3-DM-1	44	38	10-80
62	3/4S 24-1-E-1-1-DM-1(D)	62	39	0-90
63	MC-7044-E-1-DM-2	47	39	0-95
64	700619-E-2-DM-1	47	41	1-95
65	3/4 ExB 96-2-E-1-DM-1(T)	54	41	5-95
66	23 D ₂ B-30-522-P2-E-1-DM-2	47	42	2-100
67	700489-II-E-1-2-DM-2	54	43	0-80
68	700490-E-2-DM-1	52	43	2-80
69	SC-2(M)13-4-E-3-DM-1	47	46	0-100
70	3/4 S 60-1-1-E-2-DM-2	46	46	2-90

S1 No.	Pedigree	DTF	Ergot severity (%)	
			Mean ^a	Range
71	700790-E-2-DM-1	57	47	2-75
72	700583-E-5-DM-1	46	48	5-90
73	700448-I-E-2-1-DM-2	57	50	10-80
74	E-127-E-1-DM-1	47	50	1-98
75	23 D ₂ B-30-522-P2-E-1-DM-1	47	50	10-90
76	3/4 HK 133-3-E-1-3-DM-2	48	50	10-95
77	SC-2(M)13-4-E-7-DM-1	57	51	0-90
78	SC-2(M)13-4-E-4-DM-1	57	51	0-90
79	700537-E-1-2-DM-1	52	52	2-90
80	700537-E-1-1-DM-1	57	52	5-90
81	D-102C-2-E-1-DM-2	52	53	0-90
82	E-137-E-1-DM-2	57	53	2-90
83	3/4S 67-3-1-E-1-2-DM-1(T)	52	54	2-98
84	700622-E-5-DM-1	48	55	0-90
85	3/4S 60-1-1-E-2-DM-1	52	55	10-80
86	D.No.9-E-1-DM-1	44	56	5-90
87	D.No.9-E-1-DM-2	47	57	20-95
88	D-45-416-E-1-DM-1	55	58	5-95
89	Ex Bouchi 700638-3-2-E-2-1-DM-1	49	58	1-95
90	J 2238-E-2-1-DM-1	52	58	5-95
91	3/4 HK 133-3-E-1-1-DM-1	46	60	35-90
92	3/4S 98-2-3-E-1-DM-1	48	61	1-90
93	700507-E-3-DM-1*	52	62	20-90
94	E-64-E-1-DM-1	47	62	5-90
95	I.P. No.1982-E-4-DM-1	57	62	2-98
96	3/4 ExB 35-1-2-E-2-2-DM-2	48	64	35-95
97	D-45-414-E-1-DM-2	52	65	25-90
98	E-137-E-1-DM-1	52	65	40-90
99	I.P. No.1982-E-4-DM-2	57	66	1-100
100	D-102C-2-E-1-DM-1	47	69	20-90
101	J 2238-E-1-1-DM-1	46	76	35-100
102	SC-2(M)13-4-E-4-DM-2	47	77	35-100
103	D.No.9-E-1-DM-3	47	78	10-98
104	3/4 HK 133-3-E-1-1-DM-2	48	78	35-100
105	MP 27-E-1-DM-1	47	78	5-100

Sl. No.	Pedigree	DTF	Ergot severity (%)	
			Mean ^{a/}	Range
106	T. Series-4-E-1-DM-1	47	81	1-100
107	T. Series-4-E-1-DM-2	44	83	10-100
108	MC-7044-E-1-DM-1	47	83	50-98
109	3/4S 60-1-1-E-1-DM-1	46	84	50-100
110	SC-2(M)13-4-E-6-DM-1	47	85	25-100
111	I.P. No.1926-E-2-DM-1	47	87	40-100
112	J 2000-I-E-1-DM-1	47	90	50-100
113	SC-2(M)13-4-E-6-DM-2	47	95	75-100
	BJ 104 (Check)	43	88	50-100

^{a/} Mean of 10 bagged - inoculated heads

Appendix XI

Ergot reactions of 71 F₁ progenies (among low susceptibles) during the 1979 rainy season at ICRISAT Center.

Sl. No.	Plot # K 1979	Pedigree	Ergot severity(%)	
			Mean ^{a/}	Range
1	2	(700708-I-E-2 x 700626-E-1)-2	1	0-1
2	17	(700708-I-E-1 x J 797-1-E-1-2)-1	1	0-2
3	21	(700708-I-E-3 x J 797-1-E-1-1)-1	1	0-2
4	22	(700708-I-E-3 x J 797-1-E-1-1-2	1	0-2
5	23	(700708-I-E-3 x J 797-1-E-1-1)-3	3	0-10
6	34	(700626-E-1-DM-1 x J 2238-E-4-1)-3	3	1-10
7	41	(700708-I-E-1-DM-1 x J 2238-E-4-1)-4	4	1-15
8	43	(J 2238-E-4-1 x 700708-I-E-1-DM-1)-2	5	0-35
9	26	(J 2238-E-4-1 x J 797-1-E-1-2)-2	6	0-35
10	30	(J 797-1-E-3-4 x J 2238-E-4-1)-1	6	0-35
11	25	(J 2238-E-4-1 x J 797-1-E-1-2)-1	6	1-25
12	19	(700708-I-E-1 x J 797-1-E-1-2)-3	7	0-50
13	69	(J 2238-E-4-1 x Ex Bouchi 700638-3-2-E-1-DM-2)-1	7	0-50
14	42	(J 2238-E-4-1 x 700708-I-E-1-DM-1)-1	7	1-35
15	12	(700626-E-1 x J 797-1-E-1-2)-3	8	0-50
16	71	(J 2238-E-4-1 x ExBouchi 700638-3-2-E-1-DM-2)-3	8	1-50
17	67	(ExBouchi 700638-3-2-E-1-DM-2xJ 2238-E-4-1)-2	8	0-25
18	1	(700708-I-E-2 x 700626-E-1)-1	8	0-25
19	20	(700708-I-E-1 x J 797-1-E-1-1)-1	9	1-25
20	35	(700626-E-1-DM-1 x J 2238-E-4-1)-4	9	0-50
21	32	(700626-E-1-DM-1 x J 2238-E-4-1)-1	10	0-50
22	11	(700626-E-1 x J 797-1-E-1-2)-2	11	0-50
23	50	(J 2238-E-4-1 x 700526-E-1)-4	11	1-50
24	24	(700708-I-E-3 x J 797-1-E-1-1)-4	11	1-35
25	36	(J 2238-E-4-1 x 700626-E-1)-1	13	1-65
26	37	(J 2238-E-4-1 x 700626-E-1)-2	13	0-50
27	18	(700708-I-E-1 x J 797-1-E-1-2)-2	13	1-50
28	33	(700626-E-1-DM-1 x J 2238-E-4-1)-2	14	1-50
29	13	(700626-E-1-DM-1 x J 797-1-E-3-4)-1	14	0-60
30	31	(J 797-1-E-3-4 x J 2238-E-4-1)-2	14	1-50
31	14	(J 797-1-E-3-4 x 700708-I-E-1-DM-1)-1	15	1-50
32	15	(J 797-1-E-1-2 x 700708-I-E-1)-1	15	1-50
33	70	(J 2238-E-4-1 x Ex Bouchi 700638-3-2-E-1-DM-2)-2	15	1-50
34	4	(700626-E-1 x 700708-I-E-2)-1	15	0-55
35	54	(700526-E-1 x J 2238-E-4-1)-4	16	0-50

Contd.....

Sl. No.	Plot # K 1979	Pedigree	Ergot severity(%)	
			Mean ^{a/}	Range
36	45	(J 2238-E-4-1 x 700708-I-E-1-DM-1)-4	16	1-50
37	52	(700526-E-1 x J 2238-E-4-1)-2	17	1-65
38	16	(J 797-1-E-1-2 x 700708-I-E-1)-2	17	1-50
39	29	(J 797-1-E-1-2 x J 2238-E-2-1)-2	19	0-50
40	68	(ExB 700638-3-2-E-1-DM-2 x J 2238-E-4-1)-3	19	1-60
41	48	(J 2238-E-4-1 x 700526-E-1)-2	19	1-50
42	10	(700626-E-1 x J 797-1-E-1-2)-1	20	1-50
43	51	(700526-E-1 x J 2238-E-4-1)-1	20	0-65
44	49	(J 2238-E-4-1 x 700526-E-1)-3	21	5-50
45	47	(J 2238-E-4-1 x 700526-E-1)-1	22	1-50
46	53	(700526-E-1 x J 2238-E-4-1)-3	23	1-50
47	7	(J 797-1-E-1-2 x 700626-E-1)-1	24	1-75
48	66	(ExB 700638-3-2-E-1-DM-2 x J 2238-E-4-1)-1	26	1-60
49	40	(700708-I-E-1-DM-1 x J 2238-E-4-1)-3	27	0-80
50	5	(700626-E-1-DM-1 x 700708-I-E-1)-1	28	1-65
51	6	(700626-E-1-DM-1 x 700708-I-E-1)-2	29	2-50
52	63	(J 797-1-E-4 x ExB 700638-3-2-E-1-DM-2)-1	30	1-80
53	44	(J 2238-E-4-1 x 700708-I-E-1-DM-1)-3	30	10-75
54	39	(700708-I-E-1-DM-1 x J 2238-E-4-1)-2	31	1-75
55	38	(700708-I-E-1-DM-1 x J2238-E-4-1)-1	32	1-80
56	60	(ExB 700638-3-2-E-1-1 x J 797-1-E-1-3)-1	32	1-75
57	8	(J 797-1-E-1-2 x 700626-E-1)-2	34	1-80
58	46	(J 2238-E-4-1 x 700708-I-E-1-DM-1)-5	34	10-75
59	65	(J 797-1-E-3-4 x ExB 700638-3-2-E-1-DM-2)-3	37	1-80
60	9	(J 797-1-E-1-2 x 700626-E-1)-3	38	1-75
61	55	(J 797-1-E-3-4 x 700526-E-1)-1	40	1-65
62	62	(ExB 700638-3-2-E-1-1 x J797-1-E-1-3)-3	41	2-80
63	3	(700708-I-E-2 x 700626-E-1)-3	42	2-75
64	61	(ExB 700638-3-2-E-1-1 x J 797-1-E-1-3)-2	44	2-90
65	59	(700526-E-1 x J 797-1-E-3-4)-3	45	1-80
66	58	(700526-E-1 x J 797-1-E-3-4)-2	47	1-90
67	64	(J 797-1-E-3-4 x ExB 700638-3-2-E-1-DM-2)-2	47	5-90
68	27	(J 2238-E-2-1 x J 797-1-E-1-2)-3	57	0-90
69	28	(J 797-1-E-1-2 x J 2238-E-2-1)-1	57	1-90
70	57	(700526-E-1 x J 797-1-E-3-4)-1	50	1-98
71	56	(J 797-1-E-3-4 x 700526-E-1)-2	62	10-95

^{a/} Mean of 10 bagged-inoculated heads

Appendix XII

Ergot reactions and days to 75 percent bloom (DTB) of 92 F2 progenies
(among low susceptible) during the rainy season 1979 at ICRISAT Center

Sl. No.	Plot # K 1979	Pedigree	DTB	Ergot severity(%)	
				Mean ^{a/}	Range
1	29	(J 2238-1 x 3/4 ExB 74-2-1)-1	55	1	0-1
2	10	(SC-2(M)5-4-1 x 700251)-2	51	2	0-25
3	53	(J 797-1-1 x 700158-I)-2	55	3	0-35
4	55	(700158-I x J 797-1-1)-2	55	8	0-60
5	18	(J 2238-1 x 700490)-2	55	9	0-35
6	61	(J 797-1-1 x 3/4 ExB 74-2-1)-2	55	11	0-50
7	25	(J 2238-1 x 700251)-1	51	12	0-50
8	57	(J 797-1-1 x 700251)-2	51	13	0-50
9	56	(J 797-1-1 x 700251)-1	51	13	0-60
10	81	(J 1999-1 x 700590)-2	55	14	0-75
11	60	(J 797-1-1 x 3/4 ExB 74-2-1)-1	46	14	0-60
12	4	(700590 x SC-2(M)5-4-1)-2	54	14	0-50
13	31	(3/4 ExB 74-2-1 x J 2238-1)-2	55	15	0-50
14	68	(Ex Bouchi 700638-3-2 x 700158-I)-1	56	15	0-50
15	30	(3/4 ExB 74-2-1 x J 2238-1)-1	55	16	0-60
16	62	(3/4 ExB 74-2-1 x J 797-1-1)-1	42	16	0-60
17	39	(700251 x J 1999-1)-1	51	16	0-60
18	92	(J 1999-1 x 3/4 ExB 74-2-1)-2	55	16	1-60
19	54	(700158-I x J 797-1-1)-1	55	16	0-75
20	51	(700590 x J 797-1-1)-2	55	17	1-85
21	38	(700158-I x SC-1(S4)27-2)-1	55	18	0-60
22	69	(Ex Bouchi 700638-3-2 x 700158-I)-2	56	19	0-80
23	43	(700251 x SC-1(S4)27-2)-2	55	19	0-60
24	93	(3/4 ExB 74-2-1 x J 1999-1)-1	55	19	0-70
25	32	(700590 x J 1999-1)-1	55	20	0-50
26	16	(3/4 ExB 74-2-1 x SC-2(M)5-4-1)-2	47	20	0-60
27	19	(700590 x J 2238-1)-1	55	20	0-70
28	50	(700590 x J 797-1-1)-1	55	21	0-50
29	8	(700158-I x SC-2(M)5-4-1)-2	47	21	0-80
30	36	(SC-1(S4)27-2 x 700158-I)-1	55	22	0-90
31	6	(SC-2(M)5-4-1 x 700158-I)-2	55	22	1-60
32	28	(700251 x J 2238-1)-2	55	23	1-80
33	26	(J 2238-1 x 700251)-2	55	24	0-80
34	15	(3/4 ExB 74-2-1 x SC-2(M)5-4-1)-1	47	24	1-80
35	34	(700590 x SC-1(S4)27-2)-1	55	24	0-80

Contd.....

Sl. No.	Plot # K 1979	Pedigree	DTF	Ergot severity(%)	
				Mean ^a /	Range
36	12	(700251 x SC-2(M)5-4-1)-2	51	25	1-60
37	36	(700158-I x J 1999-1)-1	51	26	0-80
38	2	(SC-2(M)5-4-1 x 700590)-2	47	27	0-80
39	17	(J 2238-1 x 700590)-1	51	27	1-60
40	13	(SE-2(M)5-4- x 3/4 ExB 74-2-1)-1	53	28	0-80
41	75	(700251 x ExBouchi 700638-3-2)-2	51	28	0-65
42	78	(3/4 ExB 74-2-1 x ExBouchi 700638-3-2)-1	51	28	0-70
43	9	(SC-2(M)5-4-1 x 700251)-1	43	29	0-80
44	49	(J 797-1-1 x 700590)-2	55	30	1-60
45	48	(J 797-1-1 x 700590)-1	55	30	1-75
46	52	(J 797-1-1 x 700158-I)-1	47	30	0-80
47	79	(3/4 ExB 74-2-1 x ExB 700638-3-2)-2	44	30	0-80
48	20	(700590 x J 2238-1)-2	51	31	0-80
49	39	(700158-I x SC-1(S4)27-2)-2	55	32	0-70
50	45	(SC-1(S4)27-2 x 700251)-2	47	33	0-95
51	74	(700251 x Ex Bouchi 700638-3-2)-1	56	34	0-80
52	66	(700590 x ExBouchi 700638-3-2)-1	56	34	1-80
53	35	(700590 x SC-1(S4)27-2)-2	47	35	0-90
54	64	(ExBouchi 700638-3-2 x 700590)-1	56	35	0-90
55	65	(ExBouchi 700638-3-2 x 700590)-2	56	35	1-98
56	3	(700590 x SC-2(M)5-4-1)-1	46	36	1-80
57	7	(700158-I x SC-2(M)5-4-1)-1	46	37	1-80
58	77	(ExB 700638-3-2 x 3/4 ExB 74-2-1)-2	46	38	0-80
59	21	(J 2238-1 x 700158-I)-1	51	39	0-80
60	46	(3/4 ExB 74-2-1 x SC-1(S4)27-2)-1	47	39	1-90
61	14	(SC-2(M)5-4-1 x 3/4 ExB 74-2-1)-2	47	39	0-85
62	87	(700158-I x J 1999-1)-2	51	39	1-80
63	80	(J 1999-1 x 700590)-1	46	40	0-90
64	42	(700251 x SC-1(S4)27-2)-1	47	41	0-90
65	37	(SC-1(S4)27-2 x 700158-I)-2	51	41	0-98
66	58	(700251 x J 797-1-1)-1	55	42	0-90
67	5	(SC-2(M)5-4-1 x 700158-I)-1	47	42	2-80
68	94	(3/4 ExB 74-2-1 x J 1990-1)-2	51	42	0-90
69	40	(SC-1(S4)27-2 x 700251)-1	47	43	0-90
70	90	(700251 x J 1999-1)-2	55	43	0-90

Contd.....

Sl. No.	Plot # K 1979	Pedigree	DTF	Ergot severity(%)	
				Mean ^{a/}	Range
71	63	(3/4 ExB 74-2-1 x J 797-1-1)-2	42	44	1-80
72	24	(700158-I x J 2238-1)-2	55	45	10-60
73	44	(SC-1(S4)27-2 x 700251)-1	47	46	1-90
74	59	(700251 x J 797-1-1)-2	47	47	0-90
75	41	(SC-1(S4)27-2 x 700251)-2	47	48	1-90
76	27	(700251 x J 2238-1)-1	47	43	0-90
77	47	(3/4 ExB 74-2-1 x SC-1(S4)27-2)-2	46	43	0-90
78	83	(700590 x J 1999-1)-2	44	49	0-90
79	70	(700158-I x ExBouchi 700638-3-2)-1	42	49	1-80
80	71	(700158-I x ExBouchi 700638-3-2)-2	42	49	1-90
81	23	(700158-I x J2238-1)-1	55	50	1-85
82	76	(ExBouchi 700638-3-2 x 3/4 ExB 74-2-1)-1	44	51	1-85
83	11	(700251 x SC-2(M)5-4-1)-1	47	53	10-90
84	85	(J 1999-1 x 700158-I)-2	46	55	1-90
85	22	(J 2238-1 x 700158-I)-2	47	58	0-100
86	1	(SC-2(M)5-4-1 x 700590)-1	46	59	0-90
87	91	(J 1999-1 x 3/4 ExB 74-2-1)-1	42	59	0-98
88	73	(ExBouchi 700638-3-2 x 700251)-2	46	63	1-98
89	88	(J 1999-1 x 700251)-1	42	63	1-90
90	67	(700590 x ExBouchi 700638-3-2)-2	56	72	50-90
91	84	(J 1999-1 x 700158-I)-1	42	75	50-90
92	72	(ExBouchi 700638-3-2 x 700251)-1	44	79	10-98
		BJ 104 - Check	43	72	35-98
		5141 A - Check	43	78	50-98
		ICH-105 - Check	43	80	35-98

^{a/} Mean of 20 bagged-inoculated heads

Appendix XIII

Ergot reactions of 95 F₃-I progenies (between low susceptible and agronomic elite entries) during the 1979 rainy season at ICRISAT Center.

Entry No.	Pedigree	Ergot sev. (%)	
		Mean ^a	Range
1	EC 298-2 x SC-2(M)5-4]-14	<1	0-2
2	EC 298-2 x SC-2(M)5-4]-18	4	0-30
3	EC 298-2 x SC-2(M)5-4]-12	5	0-45
4	EC 298-2 x SC-2(M)5-4]-10	6	0-50
5	[SC-1(S4)27-2 x (SD ₂ x ExB-2) (SD 914-2-1)]-6	8	0-40
6	[EC-298-2 x SC-2(M)5-4]-19	8	0-45
7	[SC-1(S4)27-2 x (SD ₂ x ExB-2) (SD 914-2-1)]-14	11	0-90
8	[EC 298-2 x SC-2(M)5-4]-9	12	0-75
9	SC-1(S4)27-2 x (700626-21 x B 282-2-1)-4	13	0-75
10	[EC 298-2 x SC-2(M)5-4]-13	14	0-98
11	[EC 298-2 x SC-2(M)5-4]-15	14	0-90
12	EC 298-2 x SC-2(M)5-4]-4	15	0-80
13	[EC 298-2 x SC-2(M)5-4]-17	16	0-90
14	[(J 104 x 700441-6-1) x SC-2(M)5-4]-1	16	0-60
15	[(J 104 x 700441-6-1) x SC-2(M)5-4]-3	16	0-80
16	[EC 298-2 x SC-2(M)5-4]-11	16	0-70
17	[SC-2(M)5-4 x (J 1623 x 700049-2-6 (P-2))]-3	17	0-98
18	[SC-2(M)5-4 x (J 1623 x 700049-2-6 (P-2))]-1	17	0-75
19	[EC 298-2 x SC-2(M)5-4]-3	17	0-90
20	[EC 298-2 x SC-2(M)5-4]-2	17	0-90
21	[EC 298-2 x SC-2(M)5-4]-16	18	0-75
22	[SC-1(S4)27-2 x SD ₂ x ExB-2 (SD 914-2-1)]-12	18	0-75
23	[EC 298-2 x SC-2(M)5-4]-7	19	0-80
24	[EC 298-2 x SC-2(M)5-4]-6	19	0-98
25	[SC-1(S4)27-2 x SD ₂ x ExB-2 (SD 914-2-1)]-11	19	0-90
26	[SC-1(S4)27-2 x (700626-21 x B 282-2-1)]-8	19	0-75
27	[(J 104 x 700441-6-1) x SC-2(M)5-4]-6	20	0-90
28	[B 282 x SC-2(M)5-4]-1	21	0-95
29	[SC-1(S4)27-2 x SD ₂ x ExB-2 (SD 914-2-1)]-10	22	0-75
30	[EC 298-2 x SC-1(S4)27-2]-11	23	0-100
31	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-7	23	0-80
32	[SC-1(S4)27-2 x (700626-21 x B282-2-1)]-7	23	0-85
33	[(J 104 x 700441-6-1) x SC-2(M)5-4]-2	23	0-75
34	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-8	24	0-90
35	[EC 298-2 x SC-2(M)5-4]-1	25	0-98

Contd.....

Entry No.	Pedigree	Ergot sev. (%)	
		Mean ^{a/}	Range
36	[J 104 x 700441-6-1] x SC-2(M)5-4]-12	25	0-65
37	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-4	26	0-75
38	[(J 104 x 700441-6-1) x SC-2(M)5-4]-14	26	0-90
39	[EC 298-2 x SC-2(M)5-4]-5	27	0-90
40	[(J 104 x 700441-6-1) x SC-2(M)5-4]-4	27	0-90
41	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-9	27	0-75
42	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-5	28	0-75
43	(B 282 x SC-2(M)5-4)-3	28	0-95
44	[EC 298-2 x SC-1(S4)27-2]-10	28	0-75
45	[SC-2(M)5-4 x J 1623 x 700049-2-6 (P-2)]-7	28	0-98
46	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-13	29	0-80
47	[SC-1(S4)27-2 x (700626-21 x B282-2-1)]-6	29	1-90
48	[EC 298-2 x SC-1(S4)27-2]-4	29	0-90
49	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-3	29	0-90
50	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-1	30	1-90
51	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-15	31	0-95
52	(EC 298-2 x SC-1(S4)27-2)-8	31	0-98
53	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-2	31	1-90
54	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-3	31	1-80
55	(EC 298-2 x SC-2(M)5-4)-3	32	0-90
56	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-3	32	0-95
57	[(J 104 x 700441-6-1) x SC-2(M)5-4]-5	33	0-100
58	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-2	34	0-85
59	[SC-2(M)5-4 x (J 1623 x 700049-2-6 (P-2)]-4	34	0-90
60	(EC 298-2 x SC-1(S4)27-2)-3	35	0-90
61	[(J 104 x 700441-6-1) x SC-2(M)5-4]-9	36	0-90
62	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-1	36	1-90
63	[SC-1(S4)27-2 x (700626-21 x B 282-2-1)]-2	38	0-80
64	(EC 298-2 x SC-1(S4)27-2)-9	39	0-90
65	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-4	39	0-95
66	[(J 104 x 700441-6-1) x SC-2(M)5-4]-10	39	0-98
67	EC 298-2 x SC-1(S4)27-2)-13	41	5-98
68	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-6	41	1-80
69	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-9	42	0-90
70	[B 282 x SC-2(M)5-4]-2	42	0-95

Contd.....

Entry No.	Pedigree	Ergot sev. (%)	
		Mean ^{a/}	Range
71	[SC-1(S4)27-2 x (700626-21 x B282-2-1)]-5	42	0-100
72	(EC 298-2 x SC-1(S4)27-2)-2	43	0-95
73	(EC 298-2 x SC-1(S4)27-2)-5	43	0-90
74	[SC-2(M)5-4 x (J 1623 x 700049-2-6 (P-2))]-6	44	0-98
75	(EC 298-2 x SC-1(S4)27-2)-7	44	0-100
76	[SC-2(M)5-4 x (J 1623 x 700049-2-6(P-2))]-5	46	0-100
77	SC-1(S4)27-2 x (J-25-1 x 700797-1-5-2)-11	47	0-100
78	[SC-1(S4)27-2 x SD2 x ExB-2 (SD 914-2-1)]-7	47	0-90
79	(EC 298-2 x SC-1(S4)27-2)-14	49	2-100
80	SC-1(S4)27-2 x (700626-21 x B 282-2-1)-3	49	0-100
81	(EC 298-2 x SC-1(S4)27-2)-15	49	1-100
82	(EC 298-2 x SC-1(S4)27-2)-1	50	0-98
83	SC-2(M)5-4 x [(J 1623 x 700049-2-6 (P-2))]-2	52	1-95
84	(EC 298-2 x SC-1(S4)27-2)-6	52	2-98
85	(B 282 x SC-2(M)5-4)-4	52	0-98
86	[(J 104 x 700441-6-1) x SC-2(M)5-4]-7	54	0-100
87	(B 282 x SC-2(M)5-4)-5	57	2-90
88	(EC 298-2 x SC-1(S4)27-2)-12	57	1-98
89	SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)-5	57	0-98
90	[SC-1(S4)27-2 x (J 25-1 x 700797-1-5-2)]-10	66	5-95
91	[SC-1(S4)27-2 x (700626-21 x B 282-2-1)]-1	66	0-100
92	[(J 104 x 700441-6-1) x SC-2(M)5-4]-13	66	1-98
93	[(J 104 x 700441-6-1) x SC-2(M)5-4]-11	69	1-100
94	[(J 104 x 700441-6-1) x SC-2(M)5-4]-8	70	2-100
95	(B 282 x SC-2(M)5-4)-6	71	25-98
	BJ 104 Check	81	40-100
	5141 A Check	83	50-100
	ICH 105 Check	91	50-100

^{a/} Mean of 20 bagged-inoculated-bagged heads

Appendix XIV

Ergot reactions of 160 F₃-II progenies (low susc x good agro. entries) during the rainy season 1979 at ICRISAT Center

Entry No.	F ₃ Plot # K 1979	Pedigree	Ergot sev. (%)	
			Mean ^{a/}	Range
1	46	J2238 x (700626-21 x B282-2-1)-1	10	0-50
2	44	J2238 x (B282 x J1244-1-1-1-1)-5	15	0-95
3	92	J2238 x (J934-7 x 700797-19-1-5)-10	20	0-75
4	26	(J260-1 x 700557-1-4-10-5) x SC-2(M)5-4-3	21	0-95
5	47	(J1798 x 700594-7-1-1) x J2238-1	21	0-100
6	84	J2238 x (J934-7 x 700797-19-1-5)-2	22	0-90
7	137	SC-1(S4)27-2 x SD2xExB-2(SD914-2-1 -3	22	1-70
8	67	J2238 x J25-1 x J1623-21 (P-1) -4	23	0-90
9	1	(700250 x KG-22-10-2) x SC-2(M)5-4-1	23	0-75
10	45	(J2238 x (B282xJ1244-1-1-1-1)-6	24	0-30
11				
11	71	J2238 x [SD2 x ExB-2 (SD 914-2)]-4	25	0-75
12	68	J2238 x [Souma D2 x ExB-2(SD 914-2-1)]-1	25	0-75
13	3	(700250 x KG-22-10-2) x SC-2(M)5-4-3	27	0-90
14	50	J2238 x (J934-7 x 700544-3-1)-2	28	0-75
15	112	SC-1(S4)27-2 x J1623 x 700049-2-6(P-2) -1	28	1-85
16	70	J2238 x [SD2 x ExB-2 (SD914-2-1)]-3	28	0-75
17	73	J2238 x (B282 x J804-1-21-2)-2	29	0-100
18	125	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-3	31	0-90
19	32	(J1188 x 700638-3-6) x SC-2(M)5-4-3	31	0-90
20	94	(700250 x ExB 6-3) x J2238-2	32	1-80
21	55	J2238 x (J934-7 x 700544-3-1)-7	33	0-100
22	69	J2238 x [Souma D2xExB-2 (SD 914-2-1)]-2	34	0-80
23	56	J2238 x (J934-7 x 700544-3-1)-8	34	0-90
24	40	J2238 x (B282 x J1244-1-1-1-1)-1	34	0-100
25	87	J2238 x (J934-7 x 700797-19-1-5)-5	35	0-90
26	102	(700112 x J343-5-4) x SC-1(S4)27-2-1	35	0-80
27	120	SC-1(S4)27-2 x [J1623 x 700544-7 (P-1)]-4	35	1-90
28	101	(700250 x ExB 6-3) x J2238-9	36	1-100
29	20	SC-2(M)5-4 x (J25-1 x 700515-13-7)-5	36	0-95
30	18	SC-2(M)5-4 x(J25-1 x 700515-13-7)-3	36	1-90
31	121	SC-1(S4)27-2 x [J1623 x 700544-7 (P-1)]-5	36	1-90
32	159	SC-1(S4)27-2 x [SD2 x ExB-2 (SD 914-2-1)]-2	36	0-98
33	158	SC-1(S4)27-2 x [SD2 x ExB-2 (SD 914-2-1)]-1	36	0-90
34	105	(700112 x J343-5-4) x SC-1(S4)27-2-4	37	1-95
35	123	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-1	37	0-90

Contd.....

Entry No.	F ₃ Plot # K 1979	Pedigree	Ergot sev. (%)	
			Mean ^{a/}	Range
36	42	J2238 x (B282 x J1244-1-1-1)-3	37	2-90
37	54	J2238 x (J934-7 x 700544-3-1)-6	37	1-95
38	85	J2238 x (J934-7 x 700797-19-1-6)-3	37	0-95
39	118	SC-1(S4)27-2 x [J1623 x 700544-7(P-1)]-2	37	0-90
40	79	J2238 x (J25-1 x 700515-13-7)-1	37	1-75
41	13	SC-2(M)5-4 x (J25-1 x 700797-4-1-4)-3	38	0-98
42	53	J2238 x (J934-7 x 700544-3-1)-5	39	1-90
43	62	J2238 x [J1623 x 700544-7(P-1)]-1	39	2-95
44	21	SC-2(M)5-4 x (J25-1 x 700515-13-7)-6	40	0-90
45	119	SC-1(S4)27-2 x [J1623 x 700544-7(P-1)]-3	40	5-90
46	100	(700250 x ExB 6-3) x J2238-8	41	1-100
47	22	SC-2(M)5-4 x (J25-1 x 700515-13-7)-7	41	1-90
48	134	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-12	41	1-80
49	156	SC-1(S4)27-2 x (700250 x ExB6-3)-4	41	1-95
50	141	SC-1(S4)27-2 x [SD2 x ExB-2 (SD 914-2-1)] -7	41	0-90
51	146	SC-1(S4)27-2 x (B282 x J804-1-21-2)-3	41	0-100
52	114	SC-1(S4)27-2 x [J1623 x 700049-2-6(P-2)]-3	42	1-98
53	78	J2238 x (J25-1 x 700515-4-2-3-2)-5	42	0-90
54	59	J2238 x (J1623 x 700049-2-6)-2	43	1-95
55	90	J2238 x (J934-7 x 700797-19-1-5)-8	43	1-98
56	82	J2238 x (J260-1 x 700577-1-4-10-4)-2	44	1-100
57	66	J2238 x [J25-1 x J1623-21 (P-1)]-3	44	0-90
58	145	SC-1(S4)27-2 x (B282 x J804-1-21-2)-2	44	1-98
59	104	(700112 x J343-5-4) x SC-1(S4)27-2-3	45	0-95
60	106	(B282 x J1244-1-1-1-1) x SC-1(S4)27-2-1	45	0-98
61	86	J2238 x (J934-7 x 700797-19-1-5)-4	45	1-95
62	129	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-7	46	1-98
63	48	(J1798 x 700594-7-1-1) x J2238-2	46	1-100
64	131	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-9	46	1-98
65	103	(700112 x J343-5-4) x SC-1(S4)27-2-2	46	2-90
66	6	(J25-1 x 700797-1-5-2) x SC-2(M)5-4-1	47	0-100
67	19	SC-2(M)5-4 x (J25-1 x 700515-13-7)-4	47	0-95
68	4	(700250 x KG-22-10-2) x SC-2(M)5-4-4	47	0-100
69	133	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-11	47	0-99
70	74	J2238 x (J25-1 x 700515-4-2-3-2)-1	47	0-95

Contd.....

Entry No.	F3 Plot # K 1979	Pedigree	Ergot sev. (%)	
			Mean ^{a/}	Range
71	27	(J934-7 x 700797-19-1-5) x SC-2(M)5-4-1	48	1-100
72	83	J2233 x (J934-7 x 700797-19-1-5)-C	48	1-100
73	31	J2233 x (J260-1 x 700577-1-4-10-4)-1	49	0-95
74	151	(J260-1 x 700577-1-4-10-5) x SC-1(S4)27-2-2	50	1-98
75	126	SC-1(S4)27-2 x [J25-1 x J1623-21(P-1)]-4	50	1-98
76	64	J2233 x [J25-1 x J1623-21 (P-1)]-1	50	1-100
77	116	SC-1(S4)27-2 x [J1623 x 700049-2-6 (P-2)]-5	50	1-90
78	51	J2233 x (J934-7 x 700544-3-1)-3	51	1-100
79	43	J2233 x (B282 x J1244-1-1-1-1)-4	51	0-100
80	61	J2233 x (J1623 x 700049-2-6)-4	52	0-100
81	34	(J1133 x 700638-3-6) x SC-2(M)5-4-5	52	1-100
82	65	J2233 x [J25-1 x J1623-21(P-1)]-2	52	5-95
83	15	SC-2(M)5-4 x (J25-1 x 700515-4-2-3-2)-2	53	5-98
84	53	J2233 x (J1623 x 700049-2-6)-1	53	0-98
85	117	SC-1(S4)27-2 x [J1623 x 700544-7(P-1)]-1	54	1-98
86	41	J2233 x (B282 x J1244-1-1-1-1)-2	54	2-100
87	30	J2233 x (J25-1 x 700515-13-7)-2	54	1-90
88	122	SC-1(S4)27-2 x [J1623 x 700544-7(P-1)]-6	54	1-95
89	60	J2233 x (J1623 x 700049-2-6)-3	54	0-95
90	124	SC-1(S4)27-2 x [J25-1 x J1623-21(P-1)]-2	55	0-90
91	25	(J260-1 x 700557-1-4-10-5) x SC-2(M)5-4-2	55	1-100
92	113	SC-1(S4)27-2 x [J1623 x 700049-2-6(P-2)]-2	56	0-100
93	57	J2233 x (J934-7 x 700544-3-1)-9	56	0-95
94	160	EC 293-2 x SC-1(S4)27-2-1	57	0-90
95	24	(J260-1 x 700557-1-4-10-5) x SC-2(M)5-4-1	58	0-100
96	135	SC-1(S4)27-2 x [SD2 x ExB-2(SD914-2-1)]-1	58	1-99
97	143	SC-1(S4)27-2 x [SD2 x ExB-2(SD914-2-1)]-9	59	0-100
98	30	(J1133 x 700638-3-6) x SC-2(M)5-4-1	59	1-100
99	35	(700250 x KG-22-10-2) x J2233-1	59	2-100
100	16	SC-2(M)5-4 x (J25-1 x 700515-13-7)-1	60	5-90
101	5	(700626-21 x B282-2-1) x SC-2(M)5-4-1	60	2-100
102	29	(J934-7 x 700797 19-1-5) x SC-2(M)5-4-3	60	1-100
103	39	(700250 x KG-22-10-2) x J2233-5	61	0-100
104	8	(J25-1 x 700797-1-5-2) x SC-2(M)5-4-3	61	0-100
105	108	SC-1(S4)27-2 x B282-1	61	5-100

Contd.....

Entry No.	Plot # K 1979	r3	Ergot sev. (%)	
			Mean ^{a/}	Range
106	14	SC-2(M)5-4 x (J25-1 x 700515-4-2-3-2)-1	61	0-100
107	17	SC-2(M)5-4 x (J25-1 x 700515-13-7)-2	62	5-100
108	72	J2238 x (B282 x J934-1-21-2)-1	62	0-100
109	144	SC-1(S4)27-2 x (B282 x J934-1-21-2)-1	62	1-100
110	7	(J25-1 x 700797-1-5-2) x SC-2(M)5-4-2	62	0-100
111	52	J2238 x (J934-7 x 700544-3-1)-4	62	20-100
112	93	(700250 x ExB6-3) x J2238-1	62	20-100
113	111	SC-1(S4)27-2 x B282-4	62	1-100
114	49	J2238 x (J934-7 x 700544-3-1)-1	62	2-100
115	31	(J1188 x 700638-3-6) x SC-2(M)5-4-2	62	0-100
116	142	SC-1(S4)27-2 x [SD2 x ExB-2 (SD914-2-1)]-8	63	1-100
117	10	(B282 x J934-1-21-2) x SC-2(M)5-4-1	63	0-98
118	115	SC-1(S4)27-2 x J1623 x 700449-2-6(P-2) -4	63	2-98
119	155	SC-1(S4)27-2 x (700250 x ExB 6-3)-3	64	0-100
120	136	SC-1(S4)27-2 x [SD2 x ExB-2(SD914-2-1)]-2	64	1-99
121	97	(700250 x ExB 6-3) x J2238-5	64	10-100
122	127	SC-1(S4)27-2 x [J25-1 x J1623-21(P-1)]-5	64	1-99
123	139	SC-1(S4)27-2 x [SD2 x ExB-2 (SD914-2-1)]-5	64	1-98
124	83	J2238 x (J934-7 x 700797-19-1-5)-1	65	10-100
125	98	(700250 x ExB 6-3) x J2238-6	65	10-100
126	2	(700250 x KG-22-10-2) x SC-2(M)5-4-2	66	1-100
127	9	(J104 x 700490-4-3-3) x SC-2(M)5-4-1	66	0-100
128	89	J2238 x (J934-7 x 700797-19-1-5)-7	66	1-100
129	76	J2238 x (J25-1 x 700515-4-2-3-2)-3	66	0-100
130	107	SC-1(S4)27-2 x (J25-1 x 700797-1-5-2)-1	66	5-100
131	23	SC-2(M)5-4 x (J25-1 x 700515-13-7)-8	67	5-100
132	140	SC-1(S4)27-2 x SD2 x ExB-2 (SD914-2-1) -6	68	1-99
133	37	(700250 x KG-22-10-2) x J2238-3	70	2-100
134	95	(700250 x ExB 6-3) x J2238-3	71	2-100
135	110	SC-1(S4)27-2 x B282-3	71	10-98
136	33	(J1188 x 700638-3-6) x SC-2(M)5-4-4	71	1-100
137	38	(700250 x KG-22-10-2) x J2238-4	71	20-100
138	138	SC-1(S4)27-2 [SD2 x ExB-2 (SD914-2-1)]-4	71	35-98
139	77	J2238 x (J25-1 x 700515-4-2-3-2)-4	72	0-100
140	157	SC-1(S4)27-2 x (700250 x ExB 6-3)-5	72	1-100

Contd.....

F ₃			Ergot sev. (%)	
Entry No.	Plot # K 1979	Pedigree	Mean ^{a/}	Range
141	28	(J934-7 x 700797-19-1-5) x SC-2(M)5-4-2	72	0-100
142	12	SC-2(M)5-4 x (J25-1 x 700797-4-1-4)-2	72	10-100
143	99	(700250 x ExB 6-3) x J2238-7	73	40-100
144	96	(700250 x ExB 693) x J2238-4	73	25-100
145	123	SC-1(S4)27-2 x [J25-1 x J1623-21(P-1)]-6	74	10-100
146	109	SC-1(S4)27-2 x B232-2	74	1-100
147	36	(700250 x KG-22-10-2) x J2238-2	74	1-100
148	91	J2238 x (J934-7 x 700797-19-1-5)-9	74	10-100
149	63	J2238 x [J1623 x 700544-7 (P-1)]-2	75	40-100
150	132	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-10	75	35-99
151	130	SC-1(S4)27-2 x [J25-1 x J1623-21 (P-1)]-8	78	1-100
152	152	(J260-1 x 700577-1-4-10-5) x SC-1(S4)27-2-3	80	1-100
153	148	(J104 x 700441-6-1) x SC-1(S4)27-2-2	81	50-100
154	153	SC-1(S4)27-2 x (700250 x ExB 6-3)-1	81	35-100
155	150	(J260-1 x 700577-1-4-10-5) x SC-1(S4)27-2-1	82	10-99
156	147	(J104 x 700441-6-1) x SC-1(A4)27-2-1	83	50-100
157	11	SC-2(M)5-4 x (J25-1 x 700797-4-1-4)-1	84	5-100
158	154	SC-1(S4)27-2 x (700250 x ExB 6-3)-2	85	1-100
159	149	(J104 x 700441-6-1) x SC-1(S4)27-2-3	85	20-100
160	75	J2238 x (J25-1 x 700515-4-2-3-2)-2	95	75-100
		ICH 105 Check	74	50-100
		BJ 104 Check	81	50-100
		5141 A Check	85	50-100

^{a/} Mean of 20 bagged-inoculated-bagged heads

Appendix XV

Ergot reactions of 136 F3-III progenies during the 1979 rainy season at ICRISAT Center.

Sl. No.	Pedigree	Ergot severity(%)	
		Mean ^{a/}	Range
1	(700590 x 3/4 ExB 77-2-1)-2-7-1	1	0-2
2	(700526 x 3/4 ExB 74-2-1)-2-5-1	9	0-40
3	(700490 x 3/4 HK 31-1)-2-3	12	0-30
4	(700490 x 3/4 HK 31-1)-2-4-	13	0-50
5	(700687 x 3/4 ExB 77-2-1)-1-4	17	0-75
6	(3/4 HK 31-1 x 700490)-1-2	18	1-80
7	(700687 x 3/4 ExB 77-2-1)-3-13-2	18	1-30
8	(700526 x 3/4 ExB 165-2-2)-1-1	19	0-80
9	(700687 x 3/4 ExB 77-2-1)-1-5	19	1-50
10	(700741 x 700590)-4-12-3	20	1-65
11	(700490 x 3/4 HK 31-1)-1-13-3	20	0-90
12	(700684 x 3/4 ExB 77-2-1)-1-3	20	1-55
13	(700687 x 3/4 ExB 77-2-1)-2-8-2	21	1-80
14	(700590 x 3/4 ExB 77-2-1)-1-1	22	1-60
15	(700741 x 3/4 S 217-2-3)-2-4	22	1-80
16	(700687 x 3/4 ExB 77-2-1)-3-13-3	23	1-98
17	(3/4 ExB 165-2-2 x 700479)-2-3	23	0-75
18	(700490 x 3/4 HK 31-1)-2-2	24	0-90
19	(3/4 ExB 165-2-2 x 700479)-2-5	24	0-90
20	(700687 x 3/4 ExB 77-2-1)-1-2	24	0-95
21	(700142 x 3/4 ExB 74-2-1)-1-3-1	25	1-70
22	(3/4 HK 31-1 x 700490)-1-4	25	0-90
23	(700490 x 3/4 HK 31-1)-1-13-1	25	5-85
24	(700687 x 3/4 ExB 77-2-1)-4-1	26	1-90
25	(700490 x 3/4 HK 31-1)-1-13-2	27	1-70
26	(700687 x 3/4 ExB 77-2-1)-2-3-1	27	1-65
27	(700479 x 3/4 ExB 165-2-2)-2-1	27	1-90
28	(700708-I x 3/4 ExB 165-2-2)-2-3	29	1-90
29	(700741 x 3/4 S 217-2-3)-2-2	29	1-90
30	(3/4 S 217-2-3 x 700158-I)-2-2	29	1-80
31	(700687 x 3/4 ExB 165-2-2)-1-4-1	29	1-75
32	(3/4 HK 31-1 x 700490)-1-1	29	0-70
33	(700741 x 700590)-4-12-2	30	1-99
34	(700479 x 3/4 HK 31-1)-6-2	31	1-80
35	(700526 x 3/4 HK 31-1)-2-5-1	31	1-90

Contd.....

Sl. No.	Pedigree	Ergot severity(%)	
		Mean ^{a/}	Range
36	(700590 x 3/4 S 217-2-3)-1-11-2	32	1-80
37	(700741 x 3/4 S 217-2-3)-2-3	32	1-90
38	(3/4 ExB 165-2-2 x 700526)-2-1	32	1-90
39	(700490 x 3/4 HK 31-1)-2-1	32	1-90
40	(3/4 HK 31-1 x 700590)-2-8-1	33	1-60
41	(3/4 ExB 165-2-2 x 700526)-2-3	33	0-90
42	(700490 x 3/4 HK 31-1)-1-13-4	34	1-98
43	(700708-I x 3/4 S 217-2-3)-1-1	34	1-90
44	(3/4 ExB 165-2-2 x 700158-I)-1-6-1	34	1-90
45	(3/4 HK 31-1 x 700590)-2-8-3	35	1-90
46	(3/4 S 217-2-3 x 700741)-3-1	35	1-90
47	(700741 x 700590)-4-12-1	35	1-80
48	(3/4 ExB 165-2-2 x 700708-I)-2-1	35	1-98
49	(700590 x 3/4 S 217-2-3)-1-11-4	36	1-80
50	(700687 x 3/4 ExB 77-2-1)-1-1	36	1-80
51	(700708-I x 3/4 ExB 165-2-2)-2-2	36	1-80
52	(700158-I x 3/4 S 217-2-3)-2-2	37	1-80
53	(3/4 HK 31-1 x 700526)-1-1	37	0-95
54	(3/4 HK 31-1 x 700490)-2-10-8	37	1-98
55	(3/4 S 217-2-3 x 700741)-2-1	38	1-90
56	(700687 x 3/4 ExB 77-2-1)-3-13-1	38	1-80
57	(3/4 HK 31-1 x 700490)-2-10-1	38	1-90
58	(700526 x 3/4 ExB 165-2-2)-1-3	38	1-90
59	(700158-I x 3/4 S 217-2-3)-1-2	38	1-80
60	(3/4 S 217-2-3 x 700158-I)-2-1	39	1-80
61	(700526 x 3/4 HK 31-1)-2-5-2	39	1-80
62	(3/4 S 217-2-3 x 700590)-1-7-1	40	1-95
63	(3/4 ExB 165-2-2 x 700158-I)-1-6-2	40	1-80
64	(3/4 ExB 165-2-2 x 700687)-3-1	40	1-95
65	(700706 x 3/4 HK 31-1)-3-5-1	41	1-90
66	(700590 x 3/4 S 217-2-3)-1-11-1	41	0-90
67	(700526 x 3/4 ExB 74-2-1)-3-1	41	10-95
68	(3/4 ExB 165-2-2 x 700479)-2-1	41	5-80
69	(700741 x 3/4 ExB 77-2-1)-3-1	42	1-95
70	(3/4 HK 31-1 x 700490)-2-10-4	42	1-98

Contd.....

Sl. No.	Pedigree	Ergot severity(%)	
		Mean ^a	Range
71	(700700-I x 3/4 ExB 165-2-2)-2-1	42	1-85
72	(3/4 HK 31-1 x 700490)-2-10-9	42	1-90
73	(3/4 HK 31-1 x 700590)-2-8-2	43	1-90
74	(3/4 S 217-2-3 x 700590)-4-10-1	43	1-90
75	(3/4 HK 31-1 x 700490)-2-10-6	43	1-95
76	(700526 x 3/4 ExB 74-2-1)-3-2	43	1-90
77	(3/4 S 217-2-3 x 700590)-4-10-2	43	1-90
78	(700706 x 3/4 HK 31-1)-3-5-2	43	0-95
79	(3/4 ExB 165-2-2 x 700526)-2-2	44	1-90
80	(3/4 ExB 165-2-2 x 700687)-3-2	44	1-98
81	(700479 x 3/4 HK 31-1)-2-1	44	1-90
82	(700687 x 3/4 ExB 74-2-1)-2-12-2	44	1-90
83	(3/4 ExB 74-2-1 x 700687)-1-1	44	1-80
84	(3/4 ExB 165-2-2 x 700479)-2-2	44	1-90
85	(3/4 HK 31-1 x 700490)-2-10-5	45	1-98
86	(3/4 S 217-2-3 x 700490)-1-3	45	1-95
87	(3/4 S 217-2-3 x 700490)-2-10-2	45	0-95
88	(3/4 HK 31-1 x 700490)-1-3	45	1-90
89	(3/4 HK 31-1 x 700479)-1-11-4	45	1-90
90	(3/4 HK 31-1 x 700706)-1-11-2	46	0-90
91	(3/4 S 217-2-3 x 700490)-1-4	46	0-80
92	(3/4 HK 31-1 x 700490)-2-10-2	46	1-98
93	(3/4 ExB 165-2-2 x 700158-I)-2-1	47	1-90
94	(700158-I x 3/4 S 217-2-3)-1-1	48	1-90
95	(3/4 HK 31-1 x 700706)-1-11-1	48	0-90
96	(3/4 HK 31-1 x 700479)-3-2	49	1-95
97	(700158-I x 3/4 S 217-2-3)-2-3	49	1-80
98	(3/4 ExB 77-2-1 x 700590)-6-1	49	1-80
99	(3/4 S 217-2-3 x 700490)-1-5	50	1-90
100	(3/4 S 217-2-3 x 700490)-2-10-3	51	1-98
101	(3/4 HK 31-1 x 700590)-3-3	52	1-90
102	(3/4 S 217-2-3 x 700490)-1-1	52	10-90
103	(700479 x 3/4 HK 31-1)-6-1	52	0-98
104	(3/4 ExB 165-2-2 x 700479)-2-4	53	5-100
105	(3/4 HK 31-1 x 700590)-3-2	53	1-98

Contd....

S1. No.	Pedigree	Ergot severity(%)	
		Mean ^{a/}	Range
106	(3/4 HK 31-1 x 700490)-2-10-3	53	1-98
107	(3/4 HK 31-1 x 700590)-4-1	54	2-90
108	(700158-1 x 3/4 S 217-2-3)-2-1	54	1-95
109	(3/4 S 217-2-3 x 700490)-1-2	55	1-95
110	(3/4 HK 31-1 x 700590)-4-3	55	1-95
111	(3/4 HK 31-1 x 700479)-1-11-2	55	1-90
112	(700158-1 x 3/4 ExB 165-2-2)-2-1	56	1-98
113	(3/4 HK 31-1 x 700490)-2-10-7	56	10-98
114	(700158-1 x 3/4 S 217-2-3)-2-4	56	1-90
115	(700687 x 3/4 ExB 74-2-1)-2-12-1	56	10-90
116	(3/4 HK 31-1 x 700479)-3-4	57	1-98
117	(3/4 ExB 165-2-2 x 700479)-2-6	57	25-90
118	(700590 x 3/4 ExB 77-2-1)-2-7-2	58	1-95
119	(700741 x 3/4 S 217-2-3)-2-1	59	1-98
120	(700479 x 3/4 HK 31-1)-2-2	61	2-95
121	(700741 x 3/4 ExB 77-2-1)-3-2	63	1-98
122	(3/4 HK 31-1 x 700590)-4-2	63	26-98
123	(3/4 HK 31-1 x 700479)-3-1	64	0-98
124	(700741 x 3/4 ExB 77-2-1)-1-2	65	1-98
125	(3/4 HK 31-1 x 700706)-1-11-3	65	2-95
126	(700490 x 3/4 S 217-2-3)-1-1	66	1-98
127	(700741 x 3/4 ExB 77-2-1)-1-1	66	1-98
128	(3/4 HK 31-1 x 700590)-3-1	66	35-99
129	(3/4 HK 31-1 x 700479)-1-11-3	67	10-99
130	(700526 x 3/4 ExB 165-2-2)-1-2	67	35-95
131	(700590 x 3/4 S 217-2-3)-1-11-3	67	1-98
132	(3/4 HK 31-1 x 700479)-3-3	68	1-90
133	(3/4 HK 31-1 x 700479)-3-6	69	1-95
134	(3/4 HK 31-1 x 700479)-1-11-1	72	1-99
135	(3/4 S 217-2-3 x 700490)-2-10-1	72	50-98
136	(3/4 HK 31-1 x 700479)-3-5	73	1-99
	ICH 105 Check	74	50-98

^{a/} Mean of 20 bagged-inoculated-bagged heads

Ergot reactors of 74 F3-IV lines (double way crosses) during the 1979 rainy season at ICRISAT Center.

Entry No.	Plot # K 1979	Pedigree	Ergot sev. (%)	
			Mean ^a	Range
1	46	[Ex Bouchi 700638-3-2 x SC-1(S4)27-3]x(700599xJ2238)-11-3	1	0-10
2	19	[SC-1(S4)27-2xSC-1(S4)27-3]x(J2238xJ797-1)-5-7	3	0-50
3	17	[SC-1(S4)27-2xSC-1(S4)27-3]x(J2238xJ797-1)-5-5	4	0-45
4	70	[Ex Bouchi 700638-3-2xSC-1(S4)27-3]x(Ex Bouchi 700638-3-2 x ND 2282-79-1)-1-7	6	0-50
5	69	[Ex Bouchi 700638-3-2 x SC-1(S4)27-3]x(Ex Bouchi 700638-3-2 x ND 2282-79-1)-1-6	7	0-50
6	54	(J 2238 x J 2210-2)x(J 1999xJ 2210-2)-8-1	8	0-50
7	21	[SC-1(S4)27-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xSC-1(S4)27-3)-6-1	9	0-90
8	16	[SC-1(S4)27-2xSC-1(S4)27-3]x(J 2238xJ797-1)-5-4	10	0-75
9	63	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND2282-79-1)-1-5	11	0-50
10	5	(700599 x J2238) x (IP No.1926 x J2238)-11-1	13	0-75
11	20	(J2238 x J797-1) x[SC-1(S4)27-2 x[SC-1(S4)27-3]-7-1	13	0-90
12	27	[SC-1(S4)27-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xSC-1(S4)27-3)6-2	13	0-90
13	60	[SC-2(M)13-4xExBouchi 700638-3-2]x(J2238xJ797-1)-1-1	19	0-90
14	23	(700583 x J797-1) x (IP No.1926 x J797-1)-1-1	20	0-80
15	25	[SC-1(S4)27-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND2282-79-1)-1-1	21	0-80
16	4	(J2238 x J797-1) x (J1999 x J2210-2)-9-1	22	1-65
17	6	(J2238 x J797-1)x(J1999 x J2210-2)-9-3	24	0-50
18	65	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2x ND2282-79-1)-1-2	25	0-85
19	15	[SC-1(S4)27-2xSC-1(S4)27-3]x(J2238xJ797-1)-5-3	25	0-98
20	25	(ExBouchi 700638-3-2 x ND2282-79-1)x[SC-1(S4)27-2 xSC-1(S4)27-3]-1-2	26	0-75

Entry No.	Flot # K 1979	Pedigree	Ergot sev. (%)	
			Mean ^a	Range
21	64	(ExBouchi 700638-3-2xSC-1(S4)27-3)x(ExBouchi 700638-3-2xND2282-79-1)-1-1	27	0-90
22	26	(700583 x J797-1) x (700599xJ2238)-12-1	27	0-100
23	8	(J797-1 x J703-1) x [SC-1(S4)27-2 x J797-1]-8-1	28	0-90
24	24	(ExBouchi 700638-3-2xND2282-79-1)x[SC-1(S4)27-2xSC-1(S4)27-3]-1-1	28	0-90
25	18	[SC-1(S4)27-2xSC-1(S4)27-3]x(J2238xJ797-1)-5-6	29	0-95
26	45	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(700599xJ2238)-11-2	29	0-90
27	52	[ExBouchi 700638-3-2xSC-1(S4)27-3]x[SC-1(S4)27-2xSC-1(S4)27-3]-1-2	29	0-98
28	14	[SC-1(S4)27-2xSC-1(S4)27-3]x(J2238xJ797-1)-5-2	29	0-90
29	10	(700599xJ2238)x(IP No.1926 x J2238)-11-2	29	0-90
30	66	[f xBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND2282-79-1)-1-3	30	1-80
31	50	(J2238 x J2210-2)x[SC-1(S4)27-2xJ797-1]1-2	30	0-100
32	5	(J2238xJ797-1)x(J1999xJ2210-2)-9-2	31	1-100
33	53	(J2238xJ797-1)x(IP No.1926 x J797-1)-1-2	32	0-100
34	51	(IP No.1926 x J2238)x(700583xJ797-1)-1-1	33	0-90
35	11	(700599xJ2238)x(IP No.1926 x J2238)-11-3	33	0-90
36	72	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND2282-79-1)-1-9	33	1-90
37	34	(IP No.1926xJ797-1)x(IP No.1926 x J2238)-1-2	34	0-98
38	12	(IP No.1926xJ2238)x(700599xJ2238)-16-1	35	1-95
39	39	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(J2238xJ797-1)-1-2	36	0-90
40	29	(700583xJ797-1)x(IP No.1926xJ797-1)-1-2	36	0-85
41	40	[ExBouchi 700638-3-2xSC-1(S4)27-3 xJ2238xJ797-1]-1-3	36	0-90
42	37	(J2238xJ797-1)x(SC-1(S4)27-2xJ797-1)-1-2	36	1-95
43	74	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND2282-79-1)-1-11	37	1-95
44	7	(J2238xJ2210-2)x(700142xJ2238)-1-1	37	0-90
45	30	(700583xJ797-1)x(IP No.1926 x J2238)-10-1	38	0-98

Entry No.	Plot # K 1979	Iedigree	Ergot sev. (%)	
			Mean ^a	Range
46	36	(J 2238 x J 797-1) x [SC-1(S4)27-2 x J797-1]-1-1	40	0-100
47	41	(J 2238 x J 797-1) x [ExBouchi 700638-3-2 x SC-1(S4)27-3]-9-1	41	1-9
48	71	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND282-79-1)-1-8	41	1-98
49	38	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(J2238 x J797-1)-1-1	41	0-100
50	55	(J 2238 x J2210-2) x (J1999 x J2210-2)-8-2	41	0-90
51	27	(700583 x J797-1) x (700599 x J2238)-12-2	41	0-90
52	35	(IP No.1926 x J2238) x (IP No.1926xJ797-1)-10-1	42	1-80
53	67	[ExBouchi 700638-3-2 x SC-1(S4)27-3]x(ExBouchi 700638-3-2xND282-79-1)-1-4	42	0-85
54	57	(J2238 x J2210-2) x [SC-1(S4)27-2 x J797-1]-1-1	42	0-100
55	33	(IP No.1926 x J797-1) x (IP No.1926 x J2238)-1-1	43	1-90
56	48	(700599 x J2238) x [ExBouchi 700638-3-2xSC-1(S4)27-3]-1-1	43	0-95
57	42	(J2238 x J797-1) x [ExBouchi 700638-3-2 x SC-1(S4)27-3]-9-2	44	1-90
58	52	(J2238 x J797-1) x (IP No.1926 x J797-1)-1-1	44	0-100
59	45	(J1999 x J1553) x (J1999 x J2210-2)-4-1	46	0-90
60	73	[ExBouchi 700638-3-2xSC-1(S4)27-3]x(ExBouchi 700638-3-2xND282-79-1)-1-10	46	1-95
61	32	(IP No.1926 x J2238) x (700583 x J797-1)-1-2	48	0-90
62	1	(J1999 x J1553) x (J797-1 x J703-1)-6-1	51	2-95
63	45	(J2238 x J797-1) x [ExBouchi 700638-3-2xSC-1(S4)27-3]-9-3	51	0-58
64	56	(J2238 x J2210-2) x (J1999 x J2210-2)-8-3	53	0-100
65	47	[ExBouchi 700638-3-2 x SC-1(S4)27-3]x (700599 x J2238)-11-4	55	5-100
66	61	[ExBouchi 700638-3-2xSC-1(S4)27-3]x SC-1(S4)27-2xSC-1(S4)27-3]-1-1	57	0-100
67	58	(MPP 7135-3-1 x IP No.1926) x (700583 x J797-1)-12-1	59	0-100
68	63	[ExBouchi 700638-3-2xSC-1(S4)27-3]x SC-1(S4)27-2xSC-1(S4)27-3]-1-3	63	5-100
69	51	(J1999 x J1553) x (J1999 x J2210-2)-4-3	64	2-100
70	44	[ExBouchi 700638-3-2 x SC-1(S4)27-3] x (700599 x J2238)-11-1	65	0-100

Contd.....

Entry No.	Plot #	Pedigree	Ergot sev. (%)	
			Mean ^{a/}	Range
71	2	(J1999 x J1553) x (J797-1 x J703-1)-6-2	73	40-100
72	50	(J1999 x J1553) x (J1999 x J2210-2)-4-2	77	45-100
73	3	(J1999 x J1553) x (J797-1 x J703-1)-6-3	78	5-100
74	13	[SC-1(S4)27-2 x SC-1(S4)27-3] x (J2238 x J797-1)-5-1	78	20-100
		DJ 104 Check	75	20-100

^{a/} Mean of 20 bagged-inoculated-bagged heads

258 7-1 (1979) mildew (DM) reactions, days to 75 percent flowering (DTF), and agronomic score of 258 7-1 (1979) lines during 1979 rainy season at ICRISAT Center.

Sl. No. (K-1979)	Plot No.	Pedigree	DTF	Ergot Percent	Days to 75% Flowering Range	Smart	DM (%)	Ag. score (1-9)
1	250*	(Ex Bouchi 700638-3-2 x SC-1(S4)27(2)-1-10-17	58	<1	0-1	19	6	3
2	244*	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-11	58	<1	0-2	2	3	3
3	13*	(Ex 606-2 x J 703-1)-4-4-5	62	1	0-5	<1	0	3
4	22*	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-7	58	1	0-5	1	11	3
5	234	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-1	63	2	0-10	2	-	3
6	31*	(Ex 606-2 x J 703-1)-4-8-8	59	2	0-15	1	5	4
7	59	(Ex 606-2 x J 703-1)-6-2-10	63	4	0-30	1	3	7
8	254	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-21	63	4	0-25	2	12	4
9	235	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-2	52	4	0-25	7	48	2
10	37	(Ex 606-2 x J 703-1)-5-3-4	63	5	0-25	0	0	5
11	22*	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-18	58	5	0-40	6	56	4
12	72*	(Ex 703-1 x J 797-1)-3-3-1	59	5	0-25	3	0	3
13	42	(Ex 606-2 x J 703-1)-6-1-1	60	6	0-50	8	0	3
14	137	(Ex 2210-2 x J 2238)-1-2-4	63	6	0-50	1	0	4
15	253*	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-20	58	6	0-50	3	13	4
16	241	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-8	53	7	0-75	2	12	4
17	258	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-25	60	7	0-50	4	66	3
18	16	(Ex 606-2 x J 703-1)-4-7-3	63	7	0-40	6	0	4
19	256	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-23	63	7	0-35	<1	8	4
20	26	(Ex 606-2 x J 703-1)-4-8-3	59	7	0-30	3	3	8
21	22	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-6	58	8	0-30	14	5	3
22	198*	(Ex 2238 x J 1953)-1-5-19	50	8	0-40	2	0	3
23	157	(Ex 2210-2 x J 2238)-1-5-7	56	8	0-25	4	3	3
24	237	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-4	60	8	0-50	2	3	2
25	252*	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-19	63	8	0-55	4	11	3
26	16	(Ex 606-2 x J 703-1)-4-7-5	63	9	1-50	12	3	4
27	248	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-10-15	58	9	0-50	5	72	4
28	151	(Ex 2210-2 x J 2238)-1-5-1	66	9	1-40	2	3	6
29	231*	(Ex 2238 x J 703-1)-2-2-6	63	9	0-60	1	8	4
30	170*	(Ex 2238 x J 2038)-1-8-8	66	9	0-45	3	0	3

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See page

IMP Ergot ~~percentage~~ (%) Smit^{b/} Ag. score (1-9)
 Mean^{a/} Range (%) (%)

31	9	(. 606-2 x J 703-1)-4-4-1	63	9	0-50	2	0	4
32	104	(. 1553 x J 797-1)-2-3-5	66	10	0-50	<1	0	8
33	245	(x Bouchi 70638-3-2 x SC-1(S4)27-2)-1-10-12	58	10	0-40	<1	15	3
34	139	(. 2210-2 x J 2238)-1-2-6	59	10	1-35	<1	0	3
35	247	(x Bouchi 70638-3-2 x SC-1(S4)27-2)-1-10-14	58	10	0-65	2	18	3
36	244	(x Bouchi 70638-3-2 x SC-1(S4)27-2)-1-10-16	58	10	0-80	11	8	4
37	196	(. 2238 x J 1553)-1-5-17	57	10	0-40	<1	3	2
38	257	(Ex Bouchi 70638-3-2 x SC-1(S4)27-2)-1-10-24	58	111	0-95	6	5	3
39	76	(. 703-1 x J 797-1)-3-3-5	63	12	1-40	2	0	3
40	67	(J 703-1 x J 797-1)-3-1-7	63	12	0-70	2	0	7
41	33	(. 606-2 x J 703-1)-4-8-10	54	12	0-35	3	3	6
42	246	(x Bouchi 70638-3-2 x SC-1(S4)27-2)-1-10-13	63	12	0-60	<1	3	5
43	20	(. 606-2 x J 703-1)-4-7-7	56	13	0-60	<1	17	7
44	1	(. 2238 x J 1553)-1-5-18	50	13	0-70	4	0	3
45	183	(. 2238 x J 1553)-1-5-4	54	13	0-75	10	3	3
46	96	(. 797-1 x J 703-1)-8-2-1	59	13	0-90	8	3	7
47	211	(. 2238 x J 1553)-1-5-32	52	13	0-70	5	0	4
48	100*	(J 1553 x J 797-1)-2-3-1	63	14	0-70	1	6	5
49	61	(. 703-1 x J 797-1)-3-1-1	59	14	0-50	5	0	6
50	188	(. 2238 x J 1553)-1-5-9	50	14	0-75	3	0	2
51	217	(. 2238 x J 1553)-1-5-38	54	14 ⁴	0-65	<1	0	3
52	12	(. 506-2 x J 703-1)-4-4-4	59	14	1-80	2	0	5
53	14	(J 506-2 x J 703-1)-4-7-1	63	14	0-50	9	0	7
54	1	(J 2210-2 x J 2238)-1-1-2	63	5	1-45	1	0	4
55	199	(J 2238 x J 1553)-1-5-20	57	15	0-50	10	0	5
56	138	(J 210-2 x J 2238)-1-2-5	63	15	0-75	3	0	4
57	191	(J 2238 x J 1553)-1-5-12	54	16	0-70	9	3	2
58	177	(J 2210-2 x J 2238)-2-9-5	54	16	0-80	3	0	2
59	236	(Ex Bouchi 70638-3-2 x SC-1(S4)27-2)-1-10-3	52	16	0-70	12	10	4
60	220	(J 2238 x J 1553)-1-5-41	63	16	0-70	3	0	5

Sl. No.	Plot No. (K-1979)	Pedigree	JWP	Ergot severity (%)	Mean	Range	Smut	DM (%)	Ag. score (1-9)
61	74	(J 703-1 x J 797-1)-3-3-2	56	16	0-65	2	0	0	4
62	215	(J 2238 x J 1553)-1-5-36	52	16	0-65	<1	0	0	5
63	158	(J 2210-2 x J 2238)-1-5-2	59	17	0-75	19-	0	0	3
64	214	(J 2238 x J 1553)-1-5-35	63	17	0-80	1	0	0	4
65	114	(J 1999 x J 1553)-2-2-8	59	17	0-75	3	0	0	6
66	218	(J 2238 x J 1553)-1-5-39	63	17	0-50	0	0	0	5
67	10	(J 606-2 x J 703-1)-4-4-2	56	17	0-50	2	0	0	6
68	1148	(J 2210-2 x J 2238)-1-4-7	63	17	1-65	5	8	8	4
69	242	(Ex Bouchi 700638-3-2 x S. S. 84)27-2)-1-10-9	52	18	0-70	4	0	0	5
70	129	(J 2210-2 x J 2238)-1-1-9	53	18	0-50	5	0	0	6
71	176	(J 2210-2 x J 2238)-2-9-4	63	18	1-80	6	0	0	2
72	161	(J 2210-2 x J 2238)-1-5-1	54	18	0-70	6	0	0	2
73	123	(J 2210-2 x J 2238)-1-1-3	59	18	1-70	8	0	0	3
74	200	(J 2238 x J 1553)-1-5-21	52	18	0-75	4	0	0	6
75	75	(J 703-1 x J 797-1)-3-3-4	63	18	0-50	3	0	0	3
76	238	(Ex Bouchi 700638-3-2 x S. S. 84)27-2)-1-10-5	63	18	0-70	5	28	28	4
77	118	(J 1999 x J 1553)-2-2-12	54	18	0-50	3	0	0	6
78	40	(J 606-2 x J 703-1)-5-3-7	63	18	0-75	2	0	0	4
79	186	(J 2238 x J 1553)-1-5-7	50	18	0-60	2	0	0	3
80	25	(J 606-2 x J 703-1)-4-8-2	63	19	0-90	2	7	7	7
81	206	(J 2238 x J 1553)-1-5-27	52	19	0-60	5	0	0	6
82	219	(J 2238 x J 1553)-1-5-40	52	19	0-60	2	0	0	4
83	233	(J 2238 x J 797-1)-2-2-8	52	19	0-70	7	2	2	6
84	162	(J 2210-2 x J 2238)-1-5-12	63	19	0-70	<1	0	0	2
85	175	(J 2210-2 x J 2238)-2-9-3	63	20	1-60	3	11	11	2
86	152	(J 2210-2 x J 2238)-1-5-2	66	20	0-80	1	0	0	7
87	192	(J 2230 x J 1553)-1-5-13	63	20	1-75	4	0	0	2
88	146	(J 2210-2 x J 2238)-1-4-5	59	20	0-50	16	0	0	7
89	168	(J 2210-2 x J 2238)-1-8-6	50	20	1-80	12	0	0	6
90	210	(J 2238 x J 1553)-1-5-31	52	21	0-70	<1	0	0	4

91	27	(J 606-2 x J 703-1)-4-8-1	59	21	0-75	9	3	8
92	150	(J 2210-2 x J 2238)-1-1-4-f	52	21	0-75	4	0	6
93	230	(J 2238 x J 797-1)-2-2-5	66	21	0-95	<1	5	8
94	73	(J 703-1 x J 797-1)-3-3-2	56	22	0-75	2	6	4
95	209	(J 2238 x J 1553)-1-5-30	57	22	0-85	2	0	4
96	35	(J 606-2 x J 703-1)-5-3-2	54	22	0-60	2	0	5
97	22	(J 606-2 x J 703-1)-4-7-9	59	22	0-90	3	3	6
98	201	(J 2238 x J 1553)-1-5-22	52	22	0-90	2	3	6
99	212	(J 2238 x J 1553)-1-5-33	52	22	0-75	<1	0	5
100	229	(J 2238 x J 797-1)-2-84	63	22	0-80	2	3	7
101	132	(J 2210-2 x J 2238)-1-1-1	63	22	1-50	5	3	6
102	190	(J 2238 x J 1553)-1-5-11	52	22	0-75	0	0	4
103	104	(J 2210-2 x J 2238)-1-8-2	54	23	0-90	4	0	5
104	63	(J 703-1 x J 797-1)-3-1-3	63	23	0-75	7	0	5
105	71	(J 703-1 x J 797-1)-3-1-1	60	23	0-90	<1	0	5
106	216	(J 2238 x J 1553)-1-5-34	57	23	0-50	1	0	7
107	255	(Ex Bouché 700638-3-2 x SC-1(S4)27-2)-1-10-22	58	23	0-75	0	5	4
108	185	(J 2238 x J 1553)-1-5-6	59	23	0-75	5	0	2
109	224	(J 2238 x J 1553)-1-5-45	54	23	0-90	1	0	3
110	187	(J 2238 x J 1553)-1-5-8	50	23	0-80	1	0	5
111	39	(J 606-2 x J 703-1)-5-3-6	63	23	0-90	3	0	6
112	182	(J 2238 x J 1553)-1-5-3	52	23	0-80	2	0	4
113	106	(J 1553 x J 797-1)-2-3-7	66	23	0-70	1	0	8
114	38	(J 606-2 x J 703-1)-5-3-5	59	23	0-90	9	0	6
115	145	(J 2210-2 x J 2238)-1-4-4	59	24	0-70	2	0	7
116	144	(J 2210-2 x J 2238)-1-4-3	63	24	1-95	3	0	7
117	112	(J 1999 x J 1553)-2-2-6	59	24	0-75	14	0	9
118	29	(J 606-2 x J 703-1)-4-8-6	59	24	0-60	2	3	8
119	124	(J 2210-2 x J 2238)-1-1-4	66	24	0-75	<1	0	3
120	160	(J 2210-2 x J 2238)-1-5-10	50	24	0-50	4	3	3

SL. No.	Plot No. (K-1979)	Pedigree	YFP	Ergot percentage (%) Mean/Range	Survt (%)	Diff/Ag. score (1-9)
121	181	(J 2238 x J 1553)-1-5-2	54	24	6	0
122	205	(J 2238 x J 1553)-1-5-26	52	24	2	0
123	166	(J 2210-2 x J 2238)-1-8	59	24	7	6
124	156	(J 2210-2 x J 2238)-1-5-	59	24	8	5
125	1	(J 606-2 x J 703-1)-2-2 1	50	24	2	4
126	45	(J 606-2 x J 703-1)-6-1-	60	24	1	8
127	202	(J 2238 x J 1553)-1-5-23	52	24	2	6
128	23	(J 606-2 x J 703-1)-4-7-0	63	24	8	4
129	178	(J 2210-2 x J 2238)-2-9-6	63	24	1	3
130	184	(J 2238 x J 1553)-1-5-5	54	24	6	2
131	208	(J 2238 x J 1553)-1-5-29	60	24	1	4
132	169	(J 2210-2 x J 2238)-1-8-	50	24	2	8
133	30	(J 606-2 x J 703-1)-4-8-	50	24	2	8
134	195	(J 2238 x J 1553)-1-5-16	52	24	7	3
135	203	(J 2238 x J 1553)-1-5-24	50	25	7	4
136	243	(Ex Bouchi 700638-3-2 x 80-1(SL)27-2)-1-10-10	58	25	2	4
137	32	(J 606-2 x J 703-1)-4-8-9	59	25	1	7
138	8	(J 606-2 x J 703-1)-2-3-3	59	25	2	5
139	189	(J 2238 x J 1553)-1-5-10	52	25	7	2
140	154	(J 2210-2 x J 2238)-1-5-4	63	26	1	6
141	121	(J 2210-2 x J 2238)-1-1-1	50	26	8	5
142	223	(J 2238 x J 1553)-1-5-14	63	27	2	4
143	136	(J 2210-2 x J 2238)-1-2-5	52	27	3	7
144	193	(J 2238 x J 1553)-1-5-14	54	27	4	3
145	174	(J 2210-2 x J 2238)-2-9-2	59	27	3	4
146	24	(J 606-2 x J 703-1)-4-8-1	56	27	1	7
147	140	(J 2210-2 x J 2238)-1-2-7	63	27	9	4
148	44	(J 606-2 x J 703-1)-6-1-3	63	27	11	5
149	227	(J 2238 x J 797-1)-2-2-2	63	27	1	6
150	126	(J 2210-2 x J 2238)-1-1-6	56	27	6	3

Sl. No.	Block No.	Pedigree	Age	Height	Weight	Heart	Temp	Ag score
151	123	(J 2210-2 x J 2238)-1-1-8	66	27	1-75	3	5	3
152	111	(J 1999 x J 1553)-2-2-5	63	28	1-90	4	8	6
153	47	(J 606-2 x J 703-1)-6-1-6	66	28	0-80	2	0	7
154	11	(J 606-2 x J 703-1)-4-4-3	63	28	0-80	3	0	6
155	120	(J 1999 x J 1553)-2-2-14	59	28	0-85	9	0	5
156	90	(J 797-1 x J 703-1)-6-8-5	47	28	0-70	3	0	8
157	115	(J 1999 x J 1553)-2-2-9	59	28	0-80	6	3	6
158	64	(J 703-1 x J 797-1)-3-1-4	59	29	1-75	3	0	5
159	222	(J 2238 x J 1553)-1-5-35	63	29	0-90	<1	0	2
160	180	(J 2238 x J 1553)-1-5-1	50	29	0-75	1	0	4
161	213	(J 2238 x J 1553)-1-5-34	57	29	0-75	1	0	5
162	53	(J 606-2 x J 703-1)-6-2-4	59	29	0-96	4	0	8
163	167	(J 2210-2 x J 2238)-1-8-5	59	29	1-85	7	0	7
164	3	(J 606-2 x J 703-1)-2-2-3	63	30	0-85	8	3	6
165	225	(J 2238 x J 1553)-1-5-46	50	30	0-90	6	0	4
166	125	(J 2210-2 x J 2238)-1-1-5	63	30	1-75	4	0	3
167	226	(J 2238 x J 797-1)-2-2-1	63	30	0-95	2	2	5
168	56	(J 606-2 x J 703-1)-6-2-7	66	30	5-90	2	0	7
169	70	(J 703-1 x J 797-1)-3-1-10	53	31	0-75	3	0	4
170	172	(J 2210-2 x J 2238)-1-8-10	52	31	0-80	12	0	5
171	135	(J 2210-2 x J 2238)-1-2-2	63	31	0-65	5	0	8
172	130	(J 2210-2 x J 2238)-1-1-10	60	31	1-80	6	5	6
173	34	(J 606-2 x J 703-1)-5-3-1	63	31	0-90	2	0	7
174	36	(J 606-2 x J 703-1)-5-3-3	60	31	0-90	2	0	6
175	57	(J 606-2 x J 703-1)-6-2-8	59	31	1-85	13	0	6
176	15	(J 606-2 x J 703-1)-4-7-2	68	32	1-90	4	4	8
177	143	(J 2210-2 x J 2238)-1-4-2	59	32	0-75	11	0	5
178	221	(J 2238 x J 1553)-1-5-42	57	32	0-85	2	0	2
179	147	(J 2210-2 x J 2238)-1-4-6	63	32	1-75	<1	3	6
180	108	(J 1999 x J 1553)-2-2-2	56	32	0-80	15	3	7

SI. No.	Flot No. (K-197)	Pedigree	DFP	Ergot Benefits (g)	Mean	Range	Stand.	DMC/Ag. (1-1)
181	171	(J 2210-2 x J 2238)-1-8-9	56	32	1-80	9	0	5
182	87	(J 797-1 x J 703-1)-6-8-2	60	32	0-90	8	2	7
183	141	(J 2210-2 x J 2238)-1-2-8	63	32	0-75	4	0	7
184	131	(J 2210-2 x J 2238)-4-1-1	63	33	1-90	5	2	5
185	49	(J 606-2 x J 703-1)-6-1-8	60	34	0-85	<1	5	6
186	127	(J 2210-2 x J 2238)-1-1-7	72	34	10-75	<1	0	7
187	133	(J 2210-2 x J 2238)-1-1-13	50	34	1-75	12	5	7
188	68	(J 703-1 x J 797-1)-2-1-8	59	34	1-90	2	0	2
189	19	(J 606-2 x J 703-1)-4-7-6	59	34	2-95	7	0	5
190	159	(J 2210-2 x J 2238)-1-5-9	54	34	0-95	12	0	3
191	113	(J 1999 x J 1553)-2-2-7	52	34	1-70	2	0	8
192	66	(J 703-1 x J 797-1)-3-1-6	63	35	0-80	5	0	7
193	142	(J 2210-2 x J 2238)-1-4-1	50	35	1-90	11	0	6
194	163	(J 2210-2 x J 2238)-1-8-1	63	35	0-75	6	0	5
195	51	(J 606-2 x J 703-1)-6-2-2	56	35	0-90	2	0	6
196	228	(J 2238 x J 797-1)-2-2-3	66	35	2-70	<1	0	7
197	58	(J 606-2 x J 703-1)-6-2-9	63	35	0-85	3	3	7
198	134	(J 2210-2 x J 2238)-1-2-1	50	35	1-80	4	0	7
199	207	(J 2238 x J 1553)-1-5-28	63	35	0-75	<1	0	5
200	82	(J 797-1 x J 703-1)-6-7-6	56	36	1-90	12	0	6
201	41	(J 606-2 x J 703-1)-5-3-8	60	36	0-75	4	0	5
202	52	(J 606-2 x J 703-1)-6-2-3	66	36	2-80	2	0	8
203	117	(J 1999 x J 1553)-2-2-11	59	36	1-75	8	0	5
204	91	(J 797-1 x J 703-1)-6-8-6	60	36	0-70	2	0	8
205	55	(J 606-2 x J 703-1)-6-2-6	60	37	5-80	11	3	8
206	17	(J 606-2 x J 703-1)-4-7-4	59	37	1-98	3	0	6
207	54	(J 606-2 x J 703-1)-6-2-5	66	37	0-90	3	9	6
208	97	(J 797-1 x J 703-1)-8-2-2	63	37	0-95	3	3	6
209	2	(J 606-2 x J 703-1)-2-2-2	51	37	1-90	1	0	6
210	204	(J 2238 x J 1553)-1-5-25	52	37	1-75	1	0	6

Sl. No.	Plot No. (K-1979)	Red/Green	Plot Area (sq ft)	Scrub (%)	DM (%)	Ag. Core (1-9)
211	7	(J 606-2 x J 703-1)-2-3-2	38	1-80	1-80	
212	150	(J 606-2 x J 703-1)-2-3-2	38	0-95	1-80	
213	153	(J 2210-2 x J 703-1)-2-3-2	38	10-90	1-80	
214	69	(J 703-1 x J 2238)-1-2-1	38	1-80	1-80	
215	104	(J 2238 x J 707-1)-3-1-3	38	1-80	1-80	
216	119	(J 1999 x J 1553)-1-5-15	38	1-80	1-80	
217	21	(J 606-2 x J 1553)-2-2-13	38	1-80	1-80	
218	21	(J 707-1 x J 703-1)-4-7-8	38	1-80	1-80	
219	93	(J 2238 x J 707-1)-2-2-8	38	1-80	1-80	
220	222	(J 2210-2 x J 2238)-1-4-8	38	1-80	1-80	
221	149	(J 703-1 x J 707-1)-3-1-2	38	1-80	1-80	
222	62	(J 2210-2 x J 2238)-2-9-1	38	1-80	1-80	
223	173	(J 707-1 x J 2238)-1-5-1	38	1-80	1-80	
224	99	(J 703-1 x J 703-1)-1-5-1	38	1-80	1-80	
225	179	(J 2210-2 x J 2238)-2-9-7	38	1-80	1-80	
226	110	(J 1999 x J 1553)-2-2-4	38	1-80	1-80	
227	60	(J 606-2 x J 703-1)-2-2-11	38	1-80	1-80	
228	28	(J 707-1 x J 703-1)-4-8-5	38	1-80	1-80	
229	15	(J 606-2 x J 703-1)-6-1-5	38	1-80	1-80	
230	65	(J 703-1 x J 707-1)-3-1-5	38	1-80	1-80	
231	84	(J 707-1 x J 703-1)-8-3-1	38	1-80	1-80	
232	81	(J 1553 x J 703-1)-6-7-1	38	1-80	1-80	
233	101	(J 1553 x J 707-1)-2-3-5	38	1-80	1-80	
234	103	(J 707-1 x J 7-3-1)-6-3-4	38	1-80	1-80	
235	95	(J 707-1 x J 703-1)-6-8-10	38	1-80	1-80	
236	84	(J 1999 x J 1553)-6-7-8	38	1-80	1-80	
237	107	(J 707-1 x J 703-1)-2-1-9	38	1-80	1-80	
238	85	(J 707-1 x J 703-1)-6-7-9	38	1-80	1-80	
239	83	(J 2210-2 x J 2238)-1-8-7	38	1-80	1-80	
240	165		38	1-80	1-80	

TOTAL 50000
 MEAN 50000
 ST. DEV. 10000
 RANGE 1-80
 SCRB (%) 38
 DM (%) 1-80
 AG. CORE (1-9) 1-80

Plot No. (K-1979)	Replicate	DTF	Ergot severity (%)		Smut ^{b/}	DM ^{c/} (%)	Ag. score (1-9)
			Mean ^{a/}	Range			
5	(J 606-2 x J 703-1)-2-2-5	63	49	2-95	7	2	5
43	(J 606-2 x J 703-1)-6-1-2	60	49	10-95	6	0	6
116	(J 1999 x J 1553)-2-2-10	59	49	2-90	9	0	5
4	(J 606-2 x J 703-1)-2-2-4	50	51	0-95	4	0	4
79	(J 797-1 x J 703-1)-6-7-3	52	51	0-98	8	2	6
38	(J 797-1 x J 703-1)-6-8-3	50	51	10-100	8	0	8
92	(J 797-1 x J 703-1)-6-8-7	80	53	1-95	2	0	6
94	(J 797-1 x J 703-1)-6-8-9	50	55	1-100	5	0	6
89	(J 797-1 x J 703-1)-6-8-4	47	55	0-100	2	0	8
80	(J 797-1 x J 703-1)-6-7-4	50	57	2-100	6	4	6
86	(J 797-1 x J 703-1)-6-8-1	50	58	0-95	2	3	8
109	(J 1999 x J 1553)-2-2-3	50	58	0-100	18	0	6
48	(J 606-2 x J 703-1)-6-1-7	63	59	1-95	2	0	6
42	(J 1553 x J 797-1)-2-3-3	51	59	5-95	2	3	7
78	(J 797-1 x J 703-1)-6-7-2	56	63	1-98	9	0	6
105	(J 1553 x J 797-1)-2-3-6	54	63	1-100	<1	3	6
5	(J 606-2 x J 703-1)-2-3-1	53	74	20-100	4	3	4
77	(J 797-1 x J 703-1)-6-7-1	56	76	40-98	9	0	2
	50-100 (each)	45	75	20-100	33	52	

a/ : mean of 20 bagged inoculated heads

b/ : mean of 10 inoculated-bagged heads at Hissar

c/ : recorded in downy mildew nursery at ICRISAT Center

* 84 ergot free heads were selected for further evaluation at the F₄ stage

Ergot and smut reactions, and agronomic score and days to 75 percent flowering (DTF) of 214 F₁-II lines during 1979 rainy season at ICRISAT Center.

Sl.No. No.	Plot No. (1979K)	Pedigree	DTF	Ergot severity (%)		Smut ^b / (%)	Ag-score (1-9)
				Mean ^a	Range		
1	140*	(J 2238 x J2210-2)-3-3-10	63	1	0-1	<1	3
2	193*	(700619 x 700599)-3-2-14	54	1	0-2		4
3	134*	(J2238 x J2210-2)-3-3-4	63	1	0-5	<1	3
4	133*	(J2238 x J2210-2)-3-3-3	63	1	0-5	0	3
5	192*	(700619 x 700599)-3-2-10	63	1	0-5	1	3
6	191*	(700619 x 700599)-3-2-9	58	1	0-10	4	5
7	138	(J2238 x J2210-2)-3-3-8	58	2	0-20	0	3
8	57*	(J797-1 x J703-1)-10-1-1	55	2	0-5	4	2
9	132	(J2238 x J2210-2)-3-3-2	60	3	0-25	0	3
10	167*	(700619 x 700599)-2-4-2	63	3	0-25	2	5
11	135	(J2238 x J2210-2)-3-3-5	63	3	0-20	1	3
12	185	(700619 x 700599)-3-2-3	70	3	0-15	2	5
13	171*	(700619 x 700599)-2-4-6	63	3	0-25	2	6
14	143*	(J2238 x J2210-2)-3-12-2	60	4	0-25	<1	4
15	60	(J797-1 x J703-1)-10-1-4	55	4	0-15	1	2
16	18*	(J703-1 x J606-2)-3-2-7	59	5	0-35	1	3
17	213	(BxBouchi 700638-3-2 x SC-1(S4)27-2)-7-4-4	52	5	0-32	2	3
18	128*	(J2238 x J2210-2)-3-1-3	50	6	0-40	3	6
19	166	(700619 x 700599)-2-4-1	57	6	0-50	3	4
20	214	(BxBouchi 700638-3-2 x SC-1(S4)27-2)-7-4-5	50	6	0-25	2	3
21	129	(J2238 x J2210-2)-3-1-4	50	6	0-70	2	4
22	205	(BxBouchi 700638-3-2 x SC-1(S4)27-2)-1-3-1	50	6	0-50	2	3
23	142	(J2238 x J2210-2)-3-12-1	63	7	0-40	1	5
24	169	(700619 x 700599)-2-4-4	60	7	0-65	<1	7
25	173	(700619 x 700599)-2-4-8	60	8	0-50	2	3

Sl. No.	Plot No. (1979K)	Pedigree	DTF	Ergot severity (%) Mean	Range	Smut (%) b/	Ag-score (1-9)
26	186	(700619 x 700599)-3-2-4	66	8	0-60	2	5
27	131	(J2238 x J2210-2)-3-3-1	54	8	0-50	<1	3
28	183	(700619 x 700599)-3-2-1	66	8	0-35	2	6
29	184	(700619 x 700599)-3-2-2	66	8	0-50	2	7
30	175	(700619 x 700599)-2-4-10	58	9	0-65	8	3
31	199	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-2-2-4	54	10	0-40	7	4
32	72	(J1553 x J606-2)-2-1-1	55	10	0-50	3	7
33	139	(J2238 x J2210-2)-3-3-9	60	10	0-65	1	3
34	203	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-6-5-1	58	10	0-65	2	5
35	188	(700619 x 700599)-3-2-6	63	11	0-60	8	4
36							
36	209	(ExBouchi 700638-3-2 x SC-1(S4)27-2)-1-3-5	50	11	0-50	<1	6
37	121	(J2210-2 x J2238)-2-11-6	64	11	0-75	4	7
38	130	(J2238 x J2210-2)-3-2-5	50	11	0-50	<1	5
39	206	(ExBouchi 700638-3-2 x SC-1(S4)27-2)-1-3-2	50	11	0-50	3	5
40	16	(J703-1 x J606-2)-3-2-5	64	11	0-50	1	5
41	69	(J1553 x J606-2)-1-4-1	55	12	0-50	2	4
42	180	(700619 x 700599)-3-1-5	64	12	0-45	0	5
43	147	(J2238 x J1553)-1-7-3	60	12	0-75	22	7
44	208	(ExBouchi 700638-3-2 x SC-1(S4)27-2)-1-3-4	53	12	0-40	2	5
45	196	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-2-2-1	54	13	0-80	13	5
46	14	(J703-1 x J606-2)-3-2-3	59	14	0-50	<1	4
47	1	(J606-2 x J703-1)-4-5-1	55	14	0-55	5	6
48	88	(J2210-2 x J1553)-1-1-5	53	14	0-50	1	4
49	149	(J2238 x J1553)-1-7-5	67	14	0-65	2	6
50	91	(J2210-2 x J2238)-1-7-1	71	14	0-60	4	4

Sl. No. No.	Plot No. (1979K)	Pedigree	DIF	Ergot severity (%)		Smut ^b (1-9)	Ag-sco. ^c (1-9)
				Mean ^a	Range		
51	34	(J703-1 x J797-1)-5-2-2	64	14	0-55	3	4
52	210	(ExBouchi 700638-3-2 x SC-1(S4)27-2)-7-4-1	52	15	1-90	4	3
53	211	(ExBouchi 700638-3-2 x SC-1(S4)27-2)-7-4-2	50	15	0-70	4	3
54	7	(J606-2 x J703-1)-5-1-1	59	15	0-90	1	5
55	136	(J2238 x J2210-2)-3-3-6	54	15	0-50	2	3
56	59	(J797-1 x J703-1)-10-1-3	58	15	0-50	6	2
57	172	(700619 x 700599)-2-4-7	58	15	0-75	6	4
58	201	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-2-2-6	54	15	2-45	5	4
59	200	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-2-2-5	55	15	0-85	1	5
60	67	(J797-1 x J606-2)-1-1-7	53	16	0-75	4	6
61	144	(J2238 x J2210-2)-3-12-3	63	16	0-50	0	4
62	5	(J606-2 x J703-1)-4-5-5	64	16	0-50	4	7
63	58	(J797-1 x J703-1)-10-1-2	58	16	0-65	11	2
64	187	(700619 x 700599)-3-2-5	66	16	0-70	2	6
65	198	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-2-2-3	61	17	1-70	2	3
66	195	(700619 x 700599)-7-4-2	59	17	0-90	8	3
67	176	(700619 x 700599)-3-1-1	64	17	0-75	0	5
68	76	(J1553 x J797-1)-8-2-2	64	17	0-70	2	5
69	204	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-6-5-2	50	17	1-70	6	6
70	207	(ExBouchi 700638-3-2 x SC-1(S4)27-2)-1-3-3	50	18	0-90	2	3
71	181	(700619 x 700599)-3-1-6	64	18	0-75	0	5
72	95	(J2210-2 x J2238)-1-7-5	55	18	0-95	15	4
73	202	(ExBouchi 700638-3-2 x SC-1(S4)27-3)-2-2-7	58	18	0-70	7	4
74	146	(J2238 x J1553)-1-7-2	63	18	0-90	20	6
75	189	(700619 x 700599)-3-2-7	73	19	0-60	<1	7
76	123	(J2210-2 x J2238)-2-11-8	51	19	0-65	2	6
77	77	(J797-1 x J703-1)-6-5-3	58	19	0-70	<1	5
78	137	(J2238 x J2210-2)-3-3-7	52	20	0-80	5	4
79	106	(J2210-2 x J2238)-1-18-1	64	20	0-95	5	6
80	63	(J797-1 x J606-2)-1-1-3	50	21	0-60	6	4

SL. No.	Plot No. (1979K)	Pedigree	DTF	Mean ^s	Ergot severity (%) Range	Smut ^b	Ag-score (1-9)
81	37	(J703-1 x J797-1)-5-2-5	64	21	0-75	4	5
82	82	(J1999 x J2210-2)-6-5-7	64	21	0-100	8	6
83	17	(J703-1 x J606-2)-3-2-6	64	22	0-70	1	5
84	11	(J606-2 x J703-1)-5-1-5	54	22	0-100	2	5
85	29	(J703-1 x J606-2)-9-2-2	64	22	0-100	6	7
		J797-1 x J606-2)-1-1-5					
86	65	(J797-1 x J606-2)-1-1-5	50	22	0-70	2	3
87	114	(J2210-2 x J2238)-1-18-9	58	23	0-60	2	6
88	174	(700619 x 700599)-2-4-9	63	23	0-90	3	4
89	13	(J703-1 x J606-2)-3-2-2	54	23	0-98	2	5
90	154	(J2238 x J1553)-1-7-10	53	23	0-85	7	7
91	51	(J797-1 x J703-1)-7-1-4	50	23	0-85	1	7
92	122	(J2210-2 x J2238)-2-11-7	64	23	1-95	6	7
93	22	(J703-1 x J606-2)-8-2-4	64	23	0-90	7	2
94	36	(J703-1 x J797-1)-5-2-4	50	23	0-80	3	1
95	66	(J797-1 x J606-2)-1-1-6	53	24	0-75	2	4
96	190	(700619 x 700599)-3-2-8	73	24	1-60	2	5
97	74	(J1553 x J797-1)-5-2-2	61	24	1-70	8	7
98	145	(J2238 x J1553)-1-7-1	57	24	0-90	5	7
99	110	(J2210-2 x J2238)-1-18-5	55	25	0-95	1	6
100	44	(J797-1 x J703-1)-6-5-2	55	25	0-60	4	4
101	68	(J797-1 x J606-2)-1-1-8	50	25	0-90	6	5
102	150	(J2238 x J1553)-1-7-6	51	25	1-70	8	6
103	25	(J703-1 x J606-2)-8-4-3	59	25	1-70	8	5
104	64	(J797-1 x J606-2)-1-1-4	53	26	0-90	1	4
105	99	(J2210-2 x J2238)-1-14-1	50	26	1-80	5	3
106	70	(J1553 x J606-2)-1-4-2	50	26	0-90	6	8
107	197	(KxBauchi 700638-3-2 x SC-1(S4)27-3)-2-2-2	59	26	1-60	22	4
108	111	(J2210-2 J2238)-1-18-6	67	26	0-95	4	5
109	212	(KxBauchi 07638-3-2 x SC-1(S4)27-2)-7-4-3	52	26	2-75	1	3
110	127	(J2238 x J210-2)-3-1-2	52	26	0-95	1	5

Sl. No.	Plot No. (1979X)	Pedigree	Ergol severi	Smut/ Ag-score (1-9)	Ag-score (1-9)
111	8A	J2210-2 x J1553)-1-1-1	53	13	7
112	6	J606-2 x J703-1)-4-5-6	64	1	6
113	10	J606-2 x J703-1)-5-1-4	55	1	6
114	141	J2238 x J2210-2)-3-3-11	63	3	5
115	47	J797-1 x J703-1)-6-9-1	51	1	3
116	101	J2210-2 x J2238)-1-14-3	62	5	4
117	85	J2210-2 x J1553)-1-1-2	64	5	5
118	125	J2210-2 x J2238)-2-11-10	64	2	7
119	119	J2210-2 x J2238)-2-11-4	64	3	6
120	158	T00142 x J2238)-2-2-1	53	19	7
121	50	J79-1 x J703-1)-7-1-3	50	1	7
122	178	T00619 x T00599)-3-1-5	64	0	8
123	79	J1999 x J2210-2)-6-5-3	54	11	8
124	153	J2238 x J1553)-1-7-9	61	5	6
125	126	J2238 x J2210-2)-3-1-1	50	7	7
126	27	J703-1 x J606-2)-8-4-5	61	7	7
127	117	J2210-2 x J2238)-3-11-2	64	2	4
128	12	J793-1 x J606-2)-3-2-1	54	1	5
129	96	J2210-2 x J2238)-1-7-6	55	3	5
130	61	J797-1 x J606-2)-1-1-1	50	5	3
131	113	J2210-2 x J2238)-1-18-8	50	2	6
132	12	J2210-2 x J2238)-1-18-7	55	8	6
133	75	J1553 x J797-1)-8-2-1	55	4	7
134	107	J2210-2 x J2238)-1-18-2	53	3	7
135	155	J2238 x J1553)-1-7-11	64	4	7
136	159	T00142 x J2238)-2-2-2	53	13	7
137	56	J2238 x J1553)-1-7-12	61	12	7
138	8	J606-2 x J703-1)-5-1-2	55	2	5
139	46	J797-1 x J703-1)-6-5-4	51	4	4
140	86	J2210 x J1553)-1-1-3	51	8	5

Sl. No.	Pilot No. (19798)	Pedigree	DTF	Mean ^a / Range	Smut ^b / Ag-sec. ^c (1-9)
141	73	(J1553 x J797-1)-5-2-1	61	32	20
142	71	(J1553 x J606-2)-1-4-3	53	32	6
143	33	(J703-1 x J797-1)-5-2-1	67	33	4
144	92	(J2210-2 x J2238)-1-7-2	64	33	1
145	151	(J2238 x J1553)-1-7-7	64	33	1
146	9	(J606-2 x J703-1)-5-1-3	59	33	11
147	4	(J606-2 x J703-1)-4-3-4	64	33	7
148	23	(J703-1 x J606-2)-8-4-1	64	34	6
149	15	(J703-1 x J606-2)-3-2-4	59	34	1
150	30	(J703-1 x J606-2)-9-2-3	64	34	3
151	152	(J2238 x J1553)-1-7-8	58	34	3
152	35	(J703-1 x J797-1)-5-2-3	53	34	5
153	157	(J2238 x J1553)-1-7-13	61	34	4
154	115	(J2210-2 x J2238)-1-1-10	50	35	5
155	80	(J1399 x J2210-2)-6-5-4	64	35	3
156	170	(700619 x 700599)-2-4-5	52	35	1
157	120	(J2210-2 x J2238)-2-11-5	45	35	4
158	124	(J2210-2 x J2238)-2-11-9	53	36	11
159	26	(J703-1 x J606-2)-8-4-4	59	36	5
160	89	(J2210-2 x J1553)-1-1-6	50	36	2
161	87	(J2210-2 x J1553)-1-14	53	36	2
162	48	(J797-1 x J703-1)-7-1-1	50	36	1
163	53	(J797-1 x J703-1)-7-1-6	55	37	2
164	194	(700619 x 700599)-7-4-1	59	37	5
165	168	(700619 x 700599)-2-4-3	54	37	7
166	109	(J2210-2 x J2238)-1-16-4	51	37	4
167	54	(J797-1 x J703-1)-7-1-7	53	37	7
168	38	(J797-1 x J703-1)-6-1-1	61	38	2
169	179	(700619 x 700599)-3-1-4	64	38	0
170	56	(J797-1 x J703-1)-7-1-9	58	38	8

Cl. No.	Plot No. (1979K)	Pedigree	DMRF	Height (M)	Area	Scrub	Ag-score (1-9)
171	100	(J2210-2 x J2230)-1-1-2	55	38	0-5	1	5
172	104	(J2210-2 x J2238)-1-1-6	62	39	5-9	7	3
173	148	(J2238 x J53)-1-7-4	64	39	4-9	4	8
174	31	(J703-1 x J06-2)-2-4	64	39	1-9	8	4
175	62	(J797-1 x J06-2)-1-1-2	50	39	0-8	2	3
176	82	(J1999 x J210-2)-6-5-6	55	39	0-8	10	5
177	24	(J703-1 x J06-2)-8-4-2	64	39	0-11	7	5
178	81	(J1999 x J210-2)-6-5-5	64	40	5-7	2	7
179	2	(J606-2 x J1-1-5-2	53	40	0-9	11	7
180	49	(J797-1 x J03-1)-7-1-2	53	41	3-8	4	5
181	39	(J797-1 x J03-1)-6-1-2	64	41	0-11	5	5
182	98	(J2210-2 x J2238)-1-7-8	53	41	0-9	7	5
183	108	(J2210-2 x J2238)-1-18-3	64	41	0-9	5	6
184	93	(J2210-2 x J2238)-7-3	53	41	0-9	5	7
185	42	(J797-1 x J03-1)-6-1-5	58	42	0-9	2	7
186	52	(J797-1 x J03-1)-7-1-5	50	42	0-95	9	6
187	165	(J00142 x J2238)-2-28	50	43	10-95	14	7
188	3	(J606-2 x J703-1)-4-5-3	55	44	0-95	<1	7
189	43	(J797-1 x J7-1)-6-5-1	53	44	0-80	5	7
190	78	(J1999 x J2210-2)-6-5-2	64	44	3-80	2	7
191	102	(J2210-2 x J2238)-14-4	58	46	8-95	7	5
192	28	(J703-1 x J06-2)-9-2-1	64	46	0-96	4	8
193	94	(J2210-2 x J2238)-1-7-4	64	46	0-99	3	6
194	177	(J00619 x J0599)-3-1-2	64	46	1-90	0	8
195	97	(J2210-2 x J2238)-1-7-7	50	46	1-98	2	66
196	55	(J797-1 x J703-1)-7-1-8	53	46	0-95	5	6
197	103	(J2210-2 x J2238)-1-14-5	64	46	1-99	7	5
198	161	(J00142 x J2238)-2-2-4	55	47	1-90	6	8
199	20	(J703-1 x J606-2)-8-2-2	53	48	1-98	2	3
200	90	(J2210-2 x J1553)-1-1-7	53	48	0-85	1	4

SL. No.	Plot No. (1979K)	Pedigree	DTF	Mean ^{a/}	Ergot severity (%) Range	Smut (%) ^{b/}	Ag-score (1-9)
201	140	(J797-1 x J703-1)-6-1-3	55	49	0-98	8	4
202	164	(700142 x J2238)-2-2-7	52	50	10-95	5	7
203	105	(J2210-2 x J2238)-1-14-7	67	52	1-85	7	4
204	77	(J1999 x J2210-2)-6-5-1	50	52	0-95	3	7
205	19	(J703-1 x J606-2)-8-2-1	51	53	0-98	3	5
206	182	(700619 x 700599)-3-1-7	64	55	1-95	0	7
207	118	(J2210-2 x J2238)-2-11-3	62	58	0-90	1	6
208	162	(700142 x J2238)-2-2-5	52	59	1-90	11	5
209	41	(J797-1 x J703-1)-6-1-4	64	61	1-95	3	5
210	32	(J703-1 x J606-2)-9-2-5	64	61	0-100	9	5
211	116	(J2210-2 x J2238)-2-11-1	53	62	2-100	3	5
212	160	(700142 x J2238)-2-2-3	55	64	10-95	17	7
213	163	(700142 x J2238)-2-2-6	50	66	10-95	9	6
214	21	(J703-1 x J606-2)-8-2-3	50	74	35-100	1	3
215	216	ICH105	50	74	50-100	33	1
	216	BJ104	47	81	50-100	32	1
	216	5141A	51	85	50-100	57	6
	217						

a/ Mean of 20 bagged - inoculated heads

b/ Mean of 10 inoculated - bagged heads at Missar

* 136 ergot free heads were selected for further evaluation at the F_c stage

Appendix XIX

ot reactions of 401 F₄-III lines during the 1979 rainy season at ICRISAT Center.

Plot #	K 1979 Pedigree	Ergot severity (%)	
		mean ^a	Range
299	(700619 x 700599)-9-6-3	1	0-5
292	(700619 x 700599)-9-2-3	1	0-5
369	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-7-1-4	2	0-10
353	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-2-1	2	0-25
134	(J 2238 x J 2210-2)-2-4-2	4	0-60
290	(700619 x 700599)-9-2-1	4	0-20
125	(J 2210-2 x J 2238)-2-12-4	4	0-25
56	(J 1999 x J 2210-2)-6-6-1	4	0-50
135	(J 2238 x J 2210-2)-2-4-3	5	0-25
297	(700619 x 700599)-9-6-1	5	0-50
90	(J 2210-2 x J 2238)-1-13-7	6	0-50
133	(J 2238 x J 2210-2)-2-4-1	6	0-45
280	(700619 x 700599)-3-3-1	6	0-50
347	(Ex Bouchi 700638-3-2 x SC-1(S4)27-3)-2-1-1	6	0-50
129	(J 2238 x J 2210-2)-2-1-1	6	0-50
348	(Ex Bouchi 700638-3-2 x SC-1(S4)27-3)-2-1-2	6	0-35
367	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-7-1-2	6	0-25
145	(J 2238 x J 1553)-1-1-1	7	0-25
126	(J 2210-2 x J 2238)-2-12-5	7	0-25
86	(J 2210-2 x J 2238)-1-13-3	7	0-50
294	(700619 x 700599)-9-2-5	7	0-75
144	(J 2238 x J 2210-2)-4-4-2	7	0-35
138	(J 2238 x J 2210-2)-2-5-1	8	0-45
334	(SC-2(N)13-4 x Ex Bouchi 700638-3-2)-4-2-1	8	0-45
277	(700619 x 700599)-2-2-3	8	0-40
359	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-8-1	9	0-60
281	(700619 x 700599)-3-4-1	9	0-40
295	(700619 x 700599)-9-4-1	9	0-50
298	(700619 x 700599)-9-6-2	9	0-50
132	(J 2238 x J 2210-2)-2-2-2	9	0-50
253	(700583 x 700142)-3-2-1	9	0-30
241	(700583 x J 2210-2)-1-2-5	10	1-45
52	(J 1999 x J 2210-2)-4-2-3	10	0-55
276	(700619 x 700599)-2-2-2	10	0-50
105	(J 2210-2 x J 2238)-1-16-6	10	0-50

Contd.....

Pedigree		Ergot severity (%)	
		Mean ^a	Range
147	(J 2238 x J 1553)-1-2-1	10	0-50
149	(J 2238 x J 1553)-1-3-1	10	0-50
79	(J 2210-2 x J 2238)-1-11-3	10	0-50
139	(J 2233 x J 2210-2)-2-5-2	10	0-75
274	(700619 x J 703-1)-7-4-1	11	0-40
291	(700619 x 700599)-9-2-2	11	0-50
36	(J 1553 x J 797-1)-6-3-2	11	0-50
275	(700619 x 700599)-2-2-1	11	0-80
55	(J 1999 x J 2210-2)-4-4-1	11	0-90
293	(700619 x 700599)-9-2-4	11	0-50
127	(J 2238 x J 2210-2)-1-1-1	11	0-50
130	(J 2238 x J 2210-2)-2-1-2	11	0-45
271	(700619 x J 703-1)-5-6-1	11	0-50
113	(J 2210-2 x J 2238)-2-7-3	11	0-65
	(J 1999 x J 2210-2)-6-9-3	12	0-50
136	(J 2238 x J 2210-2)-2-4-4	12	0-70
148	(J 2238 x J 1553)-1-2-2	12	0-70
146	(J 2238 x J 1553)-1-1-2	12	0-50
92	(J 2210-2 x J 2238)1-13-9	12	0-75
300	(700619 x 700599)-9-6-4	13	0-60
107	(J 2210-2 x J 2238)-2-2-2	13	1-50
387	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-6-1-4	13	1-60
358	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-7-1	13	1-50
366	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-7-1-1	13	1-50
198	(J 2238 x J 797-1)-1-7-2	13	0-50
219	(700142 x J 2238)-8-14-1	14	0-45
137	(J 2238 x J 2210-2)-2-4-5	14	0-70
12	(J 1553 x J 797-1)-2-2-1	14	0-75
328	(SC-1(S4)27-3 x Ex Bouchi 700638-3-2)-4-1-1	14	0-50
117	(J 2210-2 x J 2238)-2-10-3	14	0-70
240	(700583 x J 2210-2)-1-2-4	14	0-50
162	(J 2238 x J 797-1)-1-1-2	14	0-70
131	(J 2238 x J 2210-2)-2-2-1	14	0-90
140	(J 2238 x J 2210-2)-3-10-1	14	0-50
14	(J 1553 x J 797-1)-2-2-3	14	0-50

Contd....

Plot # K 1979½ Pedigree	Ergot severity (%)	
	Mean ^{a/}	Range
40 (J 1553 x J 797-1)-10-2-1	15	0-75
323 (SC-1(S4)27-3 x IP No. 2253)-1-5-1	15	0-55
278 (700619 x 700599)-2-2-4	15	0-50
170 (J 2238 x J 797-1)-1-2-4	16	0-75
332 (SC-2(M)13-4 x Ex Bouchi 700638-3-2)-1-2-2	16	0-80
141 (J 2238 x J 2210-2)-3-10-2	16	0-75
158		
200 (J 2238 x J 797-1)-1-7-4	16	0-75
356 (Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-5-1	16	0-75
378 (ND 2282-79-1 x Ex Bouchi 700638-3-2)-1-4-3	16	0-50
53 (J 1999 x J 2210-2)-4-2-4	16	0-70
123 (J 2210-2 x J 2238)-2-12-2	16	0-75
372 (Ex Bouchi 700638-3-2 x ND 2282-79-1)-5-3-1	16	1-75
164 (J 2238 x J 797-1)-1-1-4	17	0-80
89 (J 2210-2 x J 2238)-1-13-6	17	0-80
333 (SC-2(M)13-4 x Ex Bouchi 700638-3-2)-1-2-3	17	0-60
48 (J 1999 x J 2210-2)-4-1-1	17	0-90
344 (Ex Bouchi 700638-3-2 x SC-1(S4)27-3)-1-3-1	17	1-50
251 (700583 x 700142)-2-4-2	17	0-75
266 (700619 x J 703-1)-3-3-1	17	0-60
74 (J 2210-2 x J 2238)-1-9-1	17	0-80
346 (Ex Bouchi 700638-3-2 x SC-1(S4)27-3)-1-3-3	17	0-85
110 (J 2210-2 x J 2238)-2-6-1	17	0-75
50 (J 1999 x J 2210-2)-4-2-1	17	0-80
202 (J 2238 x J 797-1)-1-7-6	17	1-50
329 (SC-1(S4)27-3 x Ex Bouchi 700638-3-2)-4-1-2	17	0-75
115 (J 2210-2 x J 2238)-2-10-1	18	0-90
259 (700599 x 700583)-2-6-1	18	0-80
150 (J 2238 x J 1553)-1-3-2	18	0-60
112 (J 2210-2 x J 2238)-2-7-2	18	0-75
93 (J 2210-2 x J 2238)-1-13-10	18	0-75
238 (700583 x J 2210-2)-1-2-2	18	0-75
285 (700619 x 700599)-3-6-1	18	0-75
27 (J 1553 x J 797-1)-4-1-3	18	0-80
60 (J 1999 x J 2210-2)-6-9-2	19	0-65

Contd....

Sl. No.	Plot #	Pedigree	Ergot severity (%)	
			Mean ^a	Range
106	159	(J 2238 x J 1553)-1-6-3	19	0-95
107	91	(J 2210-2 x J 2238)-1-13-8	19	0-90
108	248	(700583 x 700142)-2-3-1	19	0-75
109	340	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-9-3-1	19	0-80
110	272	(700619 x J 703-1)-5-6-2	19	0-65
111	160	(J 2238 x J 1553)-1-6-4	19	0-50
112	57	(J 1999 x J 2210-2)-6-6-2	19	0-80
113	264	(700619 x J 703-1)-2-1-5	19	0-100
114	106	(J 2210-2 x J 2238)-2-2-1	20	0-75
115	83	(J 2210-2 x J 2238)-1-12-3	20	0-60
116	109	(J 2210-2 x J 2238)-2-3-2	20	0-55
117	69	(J 2210-2 x J 1553)-3-1-2	20	0-75
118	78	(J 2210-2 x J 2238)-1-11-2	20	2-75
119	104	(J 2210-2 x J 2238)-1-16-5	20	0-75
120	124	(J 2210-2 x J 2238)-2-12-3	20	0-70
121	283	(700619 x 700599)-3-4-3	20	0-80
122	151	(J 2238 x J 1553)-1-3-3	20	1-55
123	246	(700583 x 700142)-1-5-1	20	0-90
124	99	(J 2210-2 x J 2238)-1-15-6	21	1-80
125	34	(J 1553 x J 797-1)-6-2-3	21	0-75
126	230	(700142 x J 2238)-9-11-2	21	0-65
127	360	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-8-2	21	0-75
128	247	(700583 x 700142)-1-5-2	21	0-80
129	72	(J 2210-2 x J 2238)-1-6-2	21	1-95
130	284	(700619 x 700599)-3-4-4	21	0-75
131	304	(MPP 7135-3-1 x 700619)-4-3-1	21	0-50
132	54	(J 1999 x J 2210-2)-4-3-1	21	0-75
133	67	(J 1999 x J 797-1)-5-2-3	21	0-70
134	13	(J 1553 x J 797-1)-2-2-2	21	1-60
135	85	(J 2210-2 x J 2238)-1-13-2	21	0-90
136	398	(ND 2282-79-1 x SC-1(S4)27-3)-4-2-3	21	1-85
137	114	(J 2210-2 x J 2238)-2-7-4	21	0-80
138	268	(700619 x J 703-1)-5-2-1	21	0-98
139	32	(J 1553 x J 797-1)-6-2-1	21	0-90
140	365	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-3-2-2	21	0-75

Contd....

Sl. No.	Plot #	K 1979 Pedigree	Ergot severity (%)	
			Mean ^a	Range
141	201	(J 2238 x J 797-1)-1-7-5	21	0-50
142	80	(J 2210-2 x J 2238)-1-11-4	22	0-90
143	153	(J 2238 x J 1553)-1-3-5	22	0-70
144	273	(700619 x J 703-1)-7-3-1	22	0-90
145	250	(700583 x 700142)-2-4-1	22	0-75
146	330	(SC-1(S4)27-3 x Ex Bouchi 700638-3-2)-4-1-3	22	0-75
147	203	(J 2238 x J 797-1)-1-8-1	22	0-80
148	59	(J 1999 x J 2210-2)-6-9-1	22	1-75
149	326	(SC-1(S4)27-3 x SC-1(S4)27-2)-5 5-1	23	0-80
150	351	(Ex Bouchi 700638-3-2 x SC-1(S4)27-3)-6-4-1	23	0-65
151	287	(700619 x 700599)-6-1-1	23	0-85
152	375	(Ex Bouchi 700638-3-2 x ND 2282-79-1)-5-3-4	23	1-60
153	108	(J 2210-2 x J 2238)-2-3-1	23	0-90
154	101	(J 2210-2 x J 2238)-1-16-2	23	0-70
155	221	(700142 x J 2238)-9-2-1	23	0-75
156	190	(J 2238 x J 797-1)-1-6-6	23	1-80
157	327	(SC-1(S4)27-3 x SC-1(S4)27-2)-5-5-2	23	0-75
158	65	(J 1999 x J 797-1)-5-2-1	23	2-70
159	77	(J 2210-2 x J 2238)-1-11-1	24	0-90
160	325	(SC-1 (S4)27-3 x SC-1(S4)27-2)-5-3-1	24	1-75
161	119	(J 2210-2 x J 2238)-2-10-5	24	0-90
162	51	(J 1999 x J 2210-2)-4-2-2	24	0-90
163	244	(700583 x J 797-1)-1-2-2	25	0-80
164	282	(700619 x 700599)-3-4-2	25	0-75
165	120	(J 2210-2 x J 2238)-2-10-6	25	0-90
166	357	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-5-2	25	1-75
167	364	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-3-2-1	25	1-85
168	314	(IP NO. 1926 x SC-1(S4)27-3)-2-1-1	25	0-75
169	371	(Ex Bouchi 700638-3-2 x ND 2282-79-1)-1-1-2	25	1-75
170	5	(J 797-1 x J 606-2)-1-5-2	25	1-75
171	156	(J 2238 x J 1553)-1-4-2	25	0-95
172	81	(J 2210-2 x J 2238)-1-12-1	25	0-100
173	255	(700599 x 700583)-1-2-2	25	0-80
174	116	(J 2210-2 x J 2238)-2-10-2	25	0-75
175	45	(J 1999 x J 2210-2)-1-1-2	25	2-75

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Sl. Plot # No. K 1979 Pedigree			Ergot severity (%)	
			Mean ^{a/}	Range
176	166	(J 2238 x J 797-1)-1-1-6	26	0-80
177	279	(700619 x 700599)-2-3-1	26	0-90
178	368	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-7-1-3	26	0-65
179	98	(J 2210-2 x J 2238)-1-15-5	26	0-50
180	209	(J 2238 x J 797-1)-1-9-3	26	0-50
181	354	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-1-4-1	26	1-60
182	82	(J 2210-2 x J 2238)-1-12-2	26	0-90
183	143	(J 2238 x J 2210-2)-4-4-1	26	1-80
184	128	(J 2238 x J 2210-2)-1-1-2	26	0-75
185	379	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-1-6-1	26	0-70
186	286	(700619 x 700599)-3-6-2	26	0-75
187	118	(J 2210-2 x J 2238)-2-10-4	26	0-80
188	384	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-6-1-1	27	0-65
189	320	(IP No. 1941 x IP No. 1926)-5-3-2	27	0-75
190	262	(700619 x J 703-1)-2-1-3	27	0-90
191	324	(SC-1(S4)27-3 x IP No. 1941)-3-1-1	27	0-80
192	258	(700599 x 700583)-2-5-2	27	0-75
193	6	(J 797-1 x J 606-2)-1-6-1	27	0-75
194	331	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-1-2-1	27	0-50
195	191	(J 2238 x J 797-1)-1-6-7	27	0-90
196	155	(J 2238 x J 1553)-1-4-1	27	0-90
197	317	(IP No. 1941 x IP No. 1926)-4-4-1	27	0-80
198	100	(J 2210-2 x J 2238)-1-16-1	27	0-80
199	64	(J 1999 x J 797-1)-5-1-1	27	1-95
200	257	(700599 x 700583)-2-5-1	27	0-90
201	335	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-4-2-2	27	0-95
202	337	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-5-1-2	28	0-80
203	96	(J 2210-2 x J 2238)-1-15-3	28	0-65
204	66	(J 1999 x J 797-1)-5-2-2	28	0-80
205	88	(J 2210-2 x J 2238)-1-13-5	28	0-90
206	62	(J 1999 x J 2210-2)-6-9-4	28	0-80
207	58	(J 1999 x J 2210-2)-6-7-1	28	0-90
208	154	(J 2238 x J 1553)-1-3-6	28	0-80
209	167	(J 2238 x J 797-1)-1-2-1	28	0-75
210	70	(J 2210-2 x J 1553)-3-1-3	28	0-95

Contd.....

Sl. No.	Plot # K 1979	Pedigree	Erosion severity (%)	
			Mean ^a	Range
211	95	(J2210-2 x J2238)-1-15-1	28	0-90
212	239	(J2238 x J1553)-1-6-1	28	0-90
213	103	(ExBouchi 700638-3-2xND2282-79-1)-5-3-3	28	1-75
214	319	(MPP 7135-1 x J606-2)-6-5-2	28	1-80
215	152	(700619 x 700599)-6-4-1	28	0-100
216	73	(J2210-2 x J2238)-1-15-2	29	0-90
217	49	(J700619 x 700599)-6-4-2	29	0-50
218	269	(J2210 x J2238)-1-16-4	29	0-90
219	397	(IP No. 1941 x IP No.1926)-5-3-1	29	0-90
220	296	(J2238 x J1553)-1-3-4	29	0-75
221	28	(J2210-2 x J2238)-1-6-3	29	0-75
222	261	(J1999 x J2210-2)-4-1-2	29	0-95
223	42	(700619 x J703-1)-5-2-2	29	0-100
224	396	(ND2282-79-1 x SC-1(S4)27-3)-4-2-2	29	1-90
225	193	(700619 x 700599)-9-4-2	29	0-90
226	84	(J1553 x J797-1)-4-1-4	29	0-90
227	322	(700619 x J703-1)-2-1-2	30	0-75
228	168	(J1999 x J1553)-2-1-1	30	0-90
229	207	(ND 2282-79-1 x SC-1(S4)27-3)-4-2-1	30	1-65
230	185	(J2238 x J797-1)-1-6-9	30	1-70
231	252	(J2210-2 x J2238)-1-13-1	30	0-90
232	254	(IP No.1941 x SC-1(S4)27-2)-2-4-1	30	0-95
233	20	(J2238 x J797-1)-1-2-2	30	0-85
234	35	(J2238 x J797-1)-1-9-1	31	0-90
235	249	(J2238 x J797-1)-1-6-1	31	0-80
236	122	(700583 x 700142)-2-4-3	31	2-70
237	316	(700599 x 700583)-1-2-1	31	0-90
238	71	(J1553 x J797-1)-2-4-6	31	1-95
239	301	(J1553 x J797-1)-6-3-1	31	0-80
240	256	(700583 x 700142)-2-3-2	31	0-90

contd.....

S1 No.	Plot # K 1979	Pedigree	Ergot severity(%)	
			Mean ^{a/}	Range
241	122	(J 2210-2 x J 2238)-2-12-1	31	0-75
242	316	(IP No. 1941 x IP No. 1926)-1-1-2	31	0-90
243	71	(J 2210-2 x J 2238)1-6-1	31	1-80
244	301	(MPP 7135-3-1 x 700619)-3-3-1	32	0-95
245	256	(700599 x 700583)-1-2-3	32	0-98
246	393	(ND 2282-7-9-1 x SC-1(S4)27-3)-3-1-2	32	1-90
247	393	(HD 2272-7-9-1 x SC-1(S4)27-3-3-1-2	32	0-95
248	239	(700583 x J 2210-2)-1-2-3	32	0-65
249	161	(J 2238 x J 797-1)-1-1-1	32	0-75
250	310	(MPP 7135-3-1 x J 606-2)-7-1-1	32	0-80
251	263	(700619 x J 703-1)-2-1-4	32	0-90
252	215	(700142 x J 2238)-8-2-4	32	1-85
253	318	(IP No. 1941 x IP No. 1926)-4-4-2	32	0-100
254	76	(J 2210-2 x J 2238)-1-10-1	32	0-95
255	43	(J 1999 x J 1553)-2-1-2	32	0-90
256	260	(700619 x J 703-1)-2-1-1	32	0-98
257	245	(700583 x 700142)-1-3-1	32	0-80
258	361	(Ex Bouchi 700638-3-2xSC-1(S4)27-2)-1-12-1	32	1-75
259	339	(SC-2(M)13-4xEx Bouchi 700638-3-2)-9-1-2	33	1-65
260	308	(MPP 7135-3-1 x J 606-2)-6-5-1	33	0-90
261	211	(700142 x J 2238)-1-2-2	33	1-75
262	165	(J 2238 x J 797-1)-1-1-5	33	1-100
263	234	(700142 x J 2238)-9-12-1	33	0-95
264	142	(J 2238 x J 2210-2)-3-10-3	33	0-80
265	336	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-5-1-1	33	0-75
266	349	(Ex Bouchi 700638-3-2xSC-1(S4)27-3)-2-1-3	33	0-75
267	233	(700142 x J 2238)	33	1-95
268	68	(J 2210-2 x J 1553)-3-1-1	33	0-95
269	355	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)1-4-2	34	0-75
270	306	(MPP 7135-3-1 x J 606-2)-6-1-1	34	0-75
271	208	(J 2238 x J 797-1)-1-9-2	34	2-85
272	4	(J 797-1 x J 606-2)-1-5-1	34	1-90
273	350	(Ex Bouchi 700638-3-2xSC-1(S4)27-3)-2-1-4	34	0-85
274	184	(J 2238 x J 797-1)-1-5-3	34	2-90
275	8	(J 797-1 x J 606-2)-1-6-3	35	1-75

Contd....

S1 No.	Plot # K 1979	Pedigree	Ergot severity(%)	
			Mean ^{a/}	Range
276	195	(J 2238 x J 797-1)-1-6-11	35	0-90
277	199	(J 2238 x J 797-1)-1-7-3	35	2-65
278	102	(J 2210-2 x J 2238)-1-16-3	35	0-98
279	315	(IP No. 1941 x IP No. 1926)-1-1-1	35	0-80
280	229	(700142 x J 2238)-9-11-1	35	1-75
281	307	(MPP 7135-3-1 x J 606-2)-6-1-2	36	1-80
282	30	(J 1553 x J 797-1)-4-1-6	36	0-90
283	392	(ND 2282-79-1 x SC-1(S4)27-3)-3-1-1	36	1-70
284	377	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-1-4-2	36	1-85
285	174	(J 2238 x J 797-1)-1-3-2	36	1-95
286	47	(J 1999 x J 2210-2)-2-2-2	36	0-95
287	31	(J 1553 x J 797-1)-5-1-1	37	1-80
288	345	(Ex Bouchi 700638-3-2 x SC-1(S4)27-3)-1-3-2	37	2-85
289	37	(J 1553 x J 797-1)-9-2-1	37	0-95
290	179	(J 2238 x J 797-1)-1-4-5	37	0-95
291	75	(J 2210-2 x J 2238)-1-9-2	37	0-95
292	176	(J 2238 x J 797-1)-1-4-2	37	1-95
293	236	(700583 x J 2210-2)-1-1-1	37	1-95
294	235	(700142 x J 2210-2)-1-1-1	37	1-90
295	380	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-3-1-1	37	1-90
296	243	(700583 x J 797-1)-1-2-1	37	0-90
297	25	(J 1553 x J 797-1)-4-1-1	37	0-95
298	311	(IP No. 1926 x MPP 7135-3-1)-15-1-1	37	1-90
299	265	(700619 x J 703-1)-3-1-1	37	0-100
300	163	(J 2238 x J 797-1)-1-1-3	38	0-90
301	7	(J 797-1 x J 606-2)-1-6-2	38	1-80
302	189	(J 2238 x J 797-1)-1-6-5	38	0-90
303	370	(Ex Bouchi 700638-3-2 x ND2282-79-1)-1-1-1	38	1-98
304	232	(700142 x J 2238)-9-11-4	38	0-85
305	204	(J 2238 x J 797-1)-1-8-2	38	0-98
306	383	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-3-1-4	38	2-95
307	180	(J 2238 x J 797-1)-1-4-6	38	1-90
308	270	(700619 x J 703-1)-5-4-1	38	1-90
309	394	(ND 2282-79-1 x SC-1(S4)27-3)-4-1-1	39	1-90
310	342	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-9-3-3	39	2-95
311	305	(MPP 7135-3-1 x 700619)-4-3-2	39	0-80
312	338	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)-9-1-1	39	5-95
313	267	(700619 x J 703-1)-3-3-2	39	0-100
314	313	(IP No. 1926 x MPP 7135-3-1)-15-1-3	40	0-98
315	18	(J 1553 x J 797-1)-2-4-4	40	1-90

S1 No.	Plot # K 1979	Pedigree	Ergot severity(%)	
			Mean ^a /	Range
316	196	(J 2238 x J 797-1)-1-6-12	40	0-90
317	33	(J 1553 x J 797-1)-6-2-2	40	0-90
318	171	(J 2238 x J 797-1)-1-2-5	40	0-90
319	177	(J 2238 x J 797-1)-1-4-3	41	0-90
320	343	(Ex Bouchi 700638-3-2 x SC-1(S4)-27-3)-1-2-141	41	0-90
321	186	(J 2238 x J 797-1)-1-6-2	41	1-90
322	19	(J 1553 x J 797-1)-2-4-5	41	0-80
323	237	(700583 x J 2210-2)-1-2-1	41	0-90
324	173	(J 2238 x J 797-1)-1-3-1	42	0-95
325	63	(J 1999 x J 797-1)-4-1-1	42	0-95
326	44	(J 1999 x J 2210-2)-1-1-1	42	1-95
327	15	(J 1553 x J 797-1)-2-4-1	42	1-95
328	87	(J 2210-2 x J 2238)-1-13-4	42	0-93
329	39	(J 1553 x J 797-1)-9-2-3	42	1-90
330	213	(700142 x J 2238)-8-2-2	42	0-93
331	178	(J 2238 x J 797-1)-1-4-4	43	1-90
332	399	(ND 2282-79-1 x SC-1(S4)27-3)-6-3-1	43	1-90
333	400	(700619 x J 703-1)-7-1-1	44	1-85
334	97	(J 2210-2 x J 2238)-1-15-4	44	0-85
335	381	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-3-1-2	44	1-90
336	206	(J 2238 x J 797-1)-1-3-4	44	1-90
337	242	(700583 x J 2210-2)-1-3-1	44	0-90
338	227	(700142 x J 2238)-9-10-3	44	1-95
339	11	(J 1553 x J 797-1)-1-1-1	45	5-100
340	169	(J 2238 x J 797-1)-1-2-3	45	1-90
341	121	(J 2210-2 x J 2238)-2-10-7	46	2-80
342	16	(J 1553 x J 797-1)-2-4-2	46	0-90
343	23	(J 1553 x J 797-1)-2-6-1	46	0-98
344	24	(J 1553 x J 797-1)-2-6-2	46	0-100
345	228	(700142 x J 2238)-9-10-4	46	5-90
346	231	(700142 x J 2238)-9-11-3	47	1-95
347	183	(J 2238 x J 797-1)-1-5-2	47	1-95
348	223	(700142 x J 2238)-9-5-1	47	0-95
349	9	(J 1553 x J 606-2)-1-1-1	47	2-90
350	194	(J 2238 x J 797-1)-1-6-10	47	0-95

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Sl. No.	Plot #	Pedigree	Ergot severity(%)	
			Mean ^a	Range
351	224	(700142 x J 2238)-9-5-2	47	0-95
352	46	(J 1999 x J 2210-2)-2-2-1	47	0-95
353	181	(J 2238 x J 797-1)-1-4-7	47	0-95
354	38	(J 1553 x J 797-1)-0-2-2	48	0-95
355	217	(700142 x J 2238)-8-3-2	48	0-98
356	29	(J 1553 x J 797-1)-4-1-5	48	0-100
357	205	(J 2238 x J 797-1)-1-8-3	49	0-98
358	401	(700619 x J 703-1)-7-1-2	49	0-95
359	111	(J 2210-2 x J 2238)-2-7-1	49	0-90
360	389	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-6-2-1	49	1-90
361	214	(700142 x J 2238)-8-2-3	49	0-98
362	26	(J 1553 x J 797-1)-4-1-2	50	0-99
363	341	(SC-2(M)13-4 x Ex Bouchi 700638-3-2)9-3-2	50	0-90
364	363	(Ex Bouchi 700638-3-2xSC-1(S4)27-2)-2-4-1	50	1-85
365	312	(IP No. 1926 x MPP 7135-3-1)-15-1-2	50	1-100
366	172	(J 2238 x J 797-1)-1-2-6	50	2-95
367	41	(J 1553 x J 797-1)-10-2-2	51	1
368	188	(J 2238 x J 797-1)-1-6-4	51	1-99
369	386	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-6-1-3	51	1-99
370	1	(J 797-1 x J 703-1)-6-3-1	51	10-95
371	388	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-6-1-5	51	35-75
372	222	(700142 x J 2238)-9-2-2	52	0-95
373	391	(ND 2282-79-1 x Ex Bouchi 700638-3-2)9-4-1	52	0-95
374	220	(700142 x J 2238)-9-1-1	53	10-98
375	218	(700142 x J 2238)-8-3-3	53	1-95
376	21	(J 1553 x J 797-1)-2-5-1	54	0-98
377	22	(J 1553 x J 797-1)-2-5-2	55	0-100
378	216	(700142 x J 2238)-8-3-1	55	2-98
379	197	(J 2238 x J 797-1)-1-7-1	56	0-90
380	373	(Ex Bouchi 700638-3-2 x ND 2282-79-1)5-3-2	57	1-90
381	17	(J 1553 x J 797-1)-2-4-3	57	2-100
382	192	(J 2238 x J 797-1)-1-6-8	57	10-95
383	2	(J 797-1) x J 703-1)-6-3-2	57	5-98
384	10	(J 1553 x J 606-2)-1-1-2	57	10-95
385	382	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-3-1-3	57	1-95

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Sl. No.	Plot # K 1979	Pedigree	Ergot severity(%)	
			Mean ^{a/}	Range
386	362	(Ex Bouchi 700638-3-2 x SC-1(S4)27-2)-2-3-1	58	1-98
387	376	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-1-4-1	58	1-95
388	182	(J 2238 x J 797-1)-1-5-1	58	0-98
389	3	(J 797-1 x J 703-1)-0-2-1	58	2-99
390	226	(700142 x J 2238)-9-10-2	59	25-95
391	321	(IP No. 1941 x IP No. 1926)-5-3-3	59	10-100
392	187	(J 2238 x J 797-1)-1-6-3	59	1-98
393	210	(700142 x J 2238)-1-2-1	60	1-98
394	302	(MPP 7135-3-1 x 700619)-3-5-1	60	0-100
395	175	(J 2238 x J 797-1)-1-4-1	60	1-98
396	385	(ND 2282-79-1 x Ex Bouchi 700638-3-2)6-1-2	61	2-95
397	395	(ND 2282-79-1 x SC-1(S4)27-3)-4-1-2	61	10-98
398	303	(MPP 7135-3-1 x 700619)-4-1-1	67	1-100
399	390	(ND 2282-79-1 x Ex Bouchi 700638-3-2)-9-2-1	67	10-95
400	352	(Ex Bouchi 700638-3-2 x SC-2(M)13-4)-1-2-1	71	10-95
401	225	(700142 x J 2238)-9-10-1	77	50-95
		ICH 105	65	10-98
		5141A	69	25-95
		BJ 104	72	40-99

^{a/} Mean of 20 bagged-inoculated-bagged heads

Appendix XX

Ergot reactions and days to 75 percent flowering (DTF) of 29 F₂ populations (low x low susceptib during the 1979-80 post rainy season at ICRISAT Center (G-3D).

Sl. No.	F ₂ #	Pedigree	DTF	Ergot inf. (%)	
				Mean ^a	Range
1	8	(700708-I-E-1 x J 797-1-E-1-2)-1-4	68	6	0-70
2	6	(700708-I-E-1 x J 797-1-E-1-2)-1-2	63	7	0-50
3	7	(700708-I-E-1 x J 797-1-E-1-2)-1-3	72	8	0-60
4	11	(700708-I-E-3 x J 797-1-E-1-1)-2-3	68	12	0-60
5	14	(700708-I-E-3 x J 797-1-E-1-1)-3-2	65	18	0-75
6	13	(700708-I-E-3 x J 797-1-E-1-1)-3-1	68	18	0-75
7	12	(700708-I-E-3 x J 797-1-E-1-1)-2-4	68	22	0-75
8	20	(J 797-1-E-1-2 x J 2238-E-2-1)-2-1	60	23	0-75
9	5	(700708-I-E-1 x J 797-1-E-1-2)-1-1	63	23	0-85
10	17	(700708-I-E-3 x J 797-E-1-1)-4-3	65	25	0-80
11	22	(J 797-1-E-3-4 x J 2238-E-4-1)-2-1	62	25	0-85
12	29	(J 2238-E-4-1 x Ex Bouchi 700638-3-2-E-1-DM-2) -1-1	68	27	0-90
13	15	(700708-I-E-3 x J 797-1-E-1-1)-4-1	65	28	0-90
14	9	(700708-I-E-3 x J 797-1-E-1-1)-2-1	68	29	0-85
15	10	(700708-I-E-3 x J 797-1-E-1-1)-2-2	68	30	0-90
16	4	(700708-I-E-2 x 700626-E-1)-1-4	68	30	1-75
17	2	(700708-I-E-2 x 700626-E-1)-1-2	65	30	0-80
18	23	(J 797-1-E-3-4 x J 2238-E-4-1)-2-2	60	31	1-90
19	3	(700708-I-E-2 x 700626-E-1)-1-3	68	32	0-90
20	16	(700708-I-E-3 x J 797-1-E-1-1)-4-2	72	32	0-90
21	21	(J 797-1-E-1-2 x J 2238-E-2-1)-2-2	62	34	0-90
22	18	(J 2238-E-4-1 x J 797-1-E-1-2)-1-1	62	34	0-80
23	1	(700708-I-E-2 x 700626-E-1)-1-1	68	34	0-95
24	26	(700626-E-1-DM-1 x J 2238-E-4-1)-2-1	62	35	1-90
25	25	(700626-E-1-DM-1 x J 2238-E-4-1)-1-2	68	36	1-95
26	28	(700626-E-1-DM-1 x J 2238-E-4-1)-3-2	72	42	0-80
27	19	(J 2238-E-4-1 x J 797-1-E-1-2)-1-2	53	43	0-80
28	27	(700626-E-1-DM-1 x J 2238-E-4-1)-3-1	60	43	1-90
29	24	(700626-E-1-DM-1 x J 2238-E-4-1)-1-1	62	44	1-98
		BJ 104		65	15-95
		ICH 105		80	35-98

^{a/} Mean of 40 randomly bagged-inoculated-bagged heads

Appendix XXI

Ergot reactions and days to 75 percent flowering (DTF) of 83 F₄ lines (low x low susc.) during the 1979-80 post rainy season at ICRISAT (G-3D)

Sl. No.	F ₃ #	Pedigree	DTF ^{a/}	Ergot sev. (%)	
				Mean ^{b/}	Range
1	34-2	(700590 x 3/4 ExB 77-2-1)-2-7-1-2	64	5	0-40
2	34-5	(700590x3/4 ExB 77-2-1)-2-7-1-5	77	10	0-50
3	41-1	(700687x3/4 ExB 77-2-1)-1-2-1	71	10	0-35
4	34-7	(700590x3/4 ExB 77-2-1)-2-7-1-7	61	11	1-60
5	43-3	(700687x3/4 ExB 77-2-1)-1-4-3	64	12	0-80
6	34-1	(700590x3/4 ExB 77-2-1)-2-7-1-1	70	14	0-80
7	14-5	(700158-1x3/4S 217-2-3)-2-3-5	66	16	15-60
8	34-6	(700590x3/4 ExB 77-2-1)-2-7-1-6	65	17	0-70
9	40-1	(700687 x 3/4 ExB77-2-1)-1-1-1	73	19	1-65
10	34-8	(700590 x 3/4ExB 77-2-1)-2-7-1-8	68	20	0-60
11	43-1	(700687x3/4 ExB 77-2-1)-1-4-1	71	21	0-60
12	41-2	(700687x3/4 ExB 77-2-1)-1-2-2	69	21	5-40
13	34-3	(700590x3/4 ExB 77-2-1)-2-7-1-3	65	25	2-60
14	135-2	(700741x700590)-4-12-2-2	72	25	10-90
15	95-6	(3/4 HK31-1 x 700490)-1-2-6	70	26	2-80
16	69-1	(3/4 ExB 165-2-2x700479)-2-5-1	59	26	0-60
17	49-2	(700687x3/4 ExB 77-2-1)-3-13-3-2	69	26	2-75
18	41-8	(700687x3/4 ExB 77-2-1)-1-2-8	54	26	2-75
19	135-3	(700741 x 700590)-4-12-2-3	75	26	10-60
20	69-7	(3/4ExB 165-2-2 x 700479)-2-5-7	60	27	2-80
21	60-3	(3/4 ExB165-2-2 x 700526)-2-2-3	59	28	0-80
22	41-3	(700687 x 3/4 ExB 77-2-1)-1-2-3	60	28	1-60
23	135-5	(700741 x 700590)-4-12-2-5	66	28	5-90
24	51-3	(3/4 ExB 165-2-2 x 700158-1)-1-6-1-3	54	28	1-75
25	135-1	(700741 x 700590)-4-12-2-1	67	29	0-80
26	21-3	(700741 x 3/4S 217-2-3)-2-4-3	59	29	5-60
27	95-5	(3/4 HK 31-1 x 700490)-1-2-5	61	29	0-55
28	41-5	(700687 x 3/4 ExB 77-2-1)-1-2-5	57	29	0-95
29	134-3	(700741 x 700590)-4-12-1-3	70	30	1-50
30	95-1	(3/4 HK 31-1 x 700490)-1-2-1	63	33	0-90
31	134-2	(700741 x 700590)-4-12-1-2	70	34	2-60
32	69-8	(3/4 ExB 165-2-2 x 700479)-2-5-8	64	34	0-80
33	41-4	(700687 x 3/4ExB 77-2-1)-1-2-4	52	35	2-80
34	97-4	(3/4 HK 31-1 x 700490)-1-4-4	55	36	2-80
35	134-1	(700741 x 700590)-4-12-1-1	66	37	2-70

Sl. No.	F ₃ #	Pedigree	TF	Ergot sev. (%)	
				Mean ^{b/}	Range
36	135-4	(700741 x 700590)-4-12-2-4	63	37	1-75
37	52-1	(3/4 ExB 165-2-2 x 700158-I)-1-6-2-1	70	37	1-80
38	95-8	(3/4 HK 31-1 x 700490)-1-2-3	60	38	2-70
39	95-7	(3/4 HK 31-1 x 700490)-1-2-7	56	39	1-98
40	69-3	(3/4 ExB 165-2-2 x 700479)-2-5-3	60	39	5-70
41	51-1	(3/4 ExB 165-2-2 x 700158-I)-1-6-1-1	62	39	1-80
42	9-4	(3/4S 217-2-3 x 700158-I)-2-2-4	59	40	0-85
43	49-1	(700687 x 3/4 ExB 77-2-1)-3-13-3-1	63	41	1-80
44	21-2	(700741 x 3/4S 217-2-3)-2-4-2	60	41	5-75
45	97-6	(3/4 HK 31-1 x 700490)-1-4-6	65	42	2-80
46	20-1	(700741 x 3/4S 217-2-3)-2-3-1	68	43	5-80
47	97-2	(3/4 HK 31-1 x 700490)-1-4-2	57	43	5-70
48	14-3	(700158-I x 3/4S 217-2-3)-2-3-3	69	44	0-75
49	9-2	(3/4 S 217-2-3 x 700158-I)-2-2-2	59	44	0-90
50	49-3	(700687 x 3/4 ExB 77-2-1)-3-13-3-3	69	44	2-80
51	14-4	(700158-I x 3/4S 217-2-3)-2-3-4	66	45	10-80
52	21-1	(700741 x 3/4S 217-2-3)-2-4-1	61	45	2-85
53	14-1	(700158-I x 3/4S 217-2-3)-2-3-1	67	46	2-90
54	60-2	(3/4 ExB 165-2-2 x 700526)-2-2-2	62	46	0-80
55	34-4	(700590 x 3/4 ExB 77-2-1)-2-7-1-4	60	46	0-85
56	51-4	(3/4 ExB 165-2-2 x 700158-I)-1-6-1-4	67	46	5-75
57	21-4	(700741 x 3/4S 217-2-3)-2-4-4	66	46	5-75
58	41-7	(700687 x 3/4ExB 77-2-1)-1-2-7	55	46	2-80
59	97-5	(3/4 HK 31-1 x 700490)-1-4-5	66	47	2-98
60	49-4	(700687 x 3/4ExB 77-2-1)-3-13-3-4	68	47	2-90
61	95-4	(3/4 HK 31-1 x 700490)-1-4-4	62	47	2-95
62	95-2	(3/4 HK 31-1 x 700490)-1-2-2	54	47	2-80
63	69-6	(3/4 ExB 165-2-2 x 700479)-2-5-6	57	48	5-90
64	97-1	(3/4 HK 31-1 x 700490)-1-4-1	52	49	1-95
65	34-9	(700590 x 3/4 ExB 77-2-1)-2-7-1-9	59	49	5-85
66	95-3	(3/4 HK 31-1 x 700490)-1-2-3	56	51	2-85
67	97-3	(3/4 HK 31-1 x 700490)-1-4-3	62	51	2-98
68	43-4	(700687 x 3/4 ExB 77-2-1)-1-4-4	54	54	1-98
69	20-2	(700741 x 3/4S 217-2-3)-2-3-2	60	54	20-35
70	69-2	(3/4 ExB 165-2-2 x 700479)-2-5-2	55	56	5-98

S1. No.	F ₃ #	Pedigree	Ergot sev. (%)		
			DTF ^{a/}	Mean ^{b/}	Range
71	51-2	(3/4 ExB 165-2-2 x 700158-I)-1-6-1-2	52	56	20-85
72	60-1	(3/4 ExB 165-2-2 x 700526)-2-2-1	54	56	1-98
73	14-2	(700158-I x 3/4S 217-2-3)-2-3-2	58	57	10-95
74	20-3	(700741 x 3/4S 217-2-3)-2-3-3	58	59	10-98
75	41-6	(700687 x 3/4 ExB 77-2-1)-1-2-6	53	59	5-98
76	1-1	(3/4S 217-2-3 x 700590)-1-7-1-1	59	60	1-90
77	51-5	(3/4 ExB 165-2-2 x 700158-I)-1-6-1-5	64	60	5-98
78	9-1	(3/4S 217-2-3 x 700158-I)-2-2-1	62	61	2-95
79	69-4	(3/4 ExB 165-2-2 x 700479)-2-5-4	52	61	5-95
80	1-2	(3/4S 217-2-3 x 700590)-1-7-1-2	52	62	5-90
81	43-2	(700687 x 3/4 ExB 77-2-1)-1-4-2	59	68	5-95
82	69-5	(3/4 ExB 165-2-2 x 700479)-2-5-5	57	70	1-98
83	9-3	(3/4S 217-2-3 x 700158-I)-2-2-3	55	74	20-98
		ICH 105 Check	52	72	20-100
		BJ 104 Check	50	90	50-98

^{a/} Mean of 2 replications

^{b/} Mean of 20 heads in 2 replications

Appendix XXII

Ergot reactions and days to 75 percent flowering (DTF) of 31 F₄ lines (DWC) during the 1979-80 post-rainy season at ICRISAT Center

Sl No.	F ₃ #	Pedigree	DTF	Infection %	
				Mean	Range
1	46-4	(ExBouchi 700638-3-2 x SC-1(S _A)27-3)x(700599xJ2238)-11-3-1	54	26	0-70
2	46-1	(ExBouchi 700638-3-2 x SC-1(S _A)27-3)x(700599xJ2238)-11-3-1	56	34	2-80
3	46-3	(ExBouchi 700638-3-2 x SC-1(S _A)27-3)x(700599xJ2238)-11-3-3	56	35	2-90
4	46-2	(ExBouchi 700638-3-2 x SC-1(S _A)27-3)x(700599xJ2238)-11-3-2	52	40	10-80
5	15-2	(SC-1(S _A)27-2xSC-1(S _A)27-3)x(J2233xJ797-1)-5-3-2	60	41	20-75
6	14-2	(SC-1(S _A)27-2xSC-1(S _A)27-3)x(J 2238 x J 797-1)-5-2-2	54	47	2-80
7	17-3	(SC-1(S _A)27-2xSC-1(S _A)27-3)x(J 2238 x J 797-1)-5-5-3	55	53	5-95
8	19-8	(SC-1(S _A)27-2xSC-1(S _A)27-3)x(J 2238 x J 797-1)-5-7-8	52	55	20-95
9	15-5	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J 2238xJ797-1)-5-3-5	52	56	20-95
10	19-6	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J 2238xJ797-1)-5-7-6	55	57	10-95
11	19-4	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238xJ797-1)-5-7-4	52	59	25-90
12	19-2	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238xJ 797-1)-5-7-2	48	60	40-80
13	19-1	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x J2238 x J 797-1)-5-7-1	51	60	15-95
14	15-3	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J 2238 x J797-1)-5-3-3	55	60	20-95
15	17-4	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-5-4	59	61	5-95
16	14-1	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J 2238 x J 797-1)-5-2-1	50	62	20-98
17	19-3	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J 797-1)-5-7-3	59	63	35-95
18	17-5	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J 2238 x J 797-1)-5-5-5	56	67	25-98
19	15-4	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J 797-1)-5-3-4	57	67	20-95
20	19-9	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J 797-1)-5-7-9	47	67	25-95
21	17-6	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-5-6	52	67	25-95
22	18-1	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-6-1	53	68	20-100
23	18-2	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J 797-1)-5-6-2	52	68	25-98
24	17-1	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-5-1	60	69	40-95
25	14-3	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-2-3	55	70	40-98
26	19-7	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J 797-1)-5-7-7	47	71	40-95
27	18-3	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-6-3	64	72	40-98
28	20-1	(J 2238 x J797-1) x (SC-1(S _A)27-2 x SC-1(S _A)27-3)-7-1-1	51	75	40-98
29	19-5	(SC-1(S _A)27-2 x SC-1(S _A)27-3)x(J2238 x J 797-1)-5-7-5	47	77	50-95
30	15-1	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J797-1)-5-3-1	56	79	50-98
31	17-2	(SC-1(S _A)27-2 x SC-1(S _A)27-3) x (J2238 x J 797-1)-5-5-2	51	80	45-98
	BJ 104 Check		43	78	40-100

Appendix XXIII

Ergot reactions and days to 75 percent flowering (DTF) of 137 F₄ lines (low susc. x agro. elite) during the 1979-80 post rainy season at ICRISAT (G-3D).

Sl. No.	F ₃ #	Pedigree	DTF ^{a/}	Ergot sev. (%)	
				Mean ^{b/}	Range
1	74-8	(EC 298-2 x SC-2(M)5-4)-13-3	57	14	0-60
2	64-2	(EC 298-2 x SC-2(M)5-4)-3-2	56	14	0-40
3	90-2	(EC 298-2 x SC-1(S4)27-2)-10-2	52	16	0-70
4	74-7	(EC 298-2 x SC-2(M)5-4)-13-7	53	18	0-75
5	74-1	(EC 298-2 x SC-2(M)5-4)-13-1	49	20	1-60
6	64-4	(EC 208-2 x SC-2(M)5-4)-3-4	52	21	0-75
7	9-1	[SC-2(M)5-4 x (J1623 x 700049-2-6(P-2))]-3-1	51	22	1-95
8	80-6	(EC 298-2 x SC-2(M)5-4)-19-6	53	25	0-80
9	80-1	(EC 298-2 x SC-2(M)5-4)-19-1	57	28	1-80
10	34-3	[SC-1(S4)27-2 x (700626-21 x B282-2-1)]-7-3	55	28	2-75
11	1-6	(B282 x SC-2(M)5-4)-1-6	52	29	0-75
12	63-1	(EC298-2 x SC-2(M)5-4)-2-1	51	29	1-70
13	1-9	(B282 x SC-2(M)5-4)-1-9	52	29	0-80
14	62-6	(EC298-2 x SC-2(M)5-4)-1-6	56	32	1-85
15	75-3	(EC 298-2 x SC-2(M)5-4)-14-3	51	32	0-98
16	74-5	(EC 298-2 x SC-2(M)5-4)-13-5	53	34	1-80
17	68-1	(EC 298-2 x SC-2(M)5-4)-7-1	49	36	10-99
18	75-6	(EC 298-2 x SC-2(M)5-4)-14-6	44	36	0-98
19	64-3	(EC298-2 x SC-2(M)5-4)-3-3	46	36	1-95
20	64-1	(EC298-2 x SC-2(M)5-4)-3-1	45	36	1-95
21	63-3	(EC 298-2 x SC-2(M)5-4)-2-3	52	37	0-95
22	90-1	(EC 298-2 x SC-1(S4)27-2)-10-1	55	38	1-98
23	80-5	(EC 298-2 x SC-2(M)5-4)-19-5	50	39	1-95
24	16-2	[(J104x700441-6-1)xSC-2(M)5-4]-3-2	47	40	2-75
25	74-4	(EC298-2 x SC-2(M)5-4)-13-4	48	41	1-95
26	74-3	(EC 298-2 x SC-2(M)5-4)-13-3	50	42	1-98
27	63-5	(EC 298-2 x SC-2(M)5-4)-2-5	45	42	1-98
28	80-3	(EC 298-2 x SC-2(M)5-4)-19-3	56	42	2-75
29	62-2	(EC 298-2 x SC-2(M)5-4)-1-2	43	42	0-90
30	74-9	(EC 298-2 x SC-2(M)5-4)-13-9	49	42	1-98
31	34-4	[SC-1(S4)27-2x(700626-21xB282-2-1)]-7-4	54	43	1-80
32	27-1	[(J104x700441-6-1)xSC-2(M)5-4]-14-1	52	43	1-90
33	62-9	(EC298-2 x SC-2(M)5-4)-1-9	47	44	0-95
34	63-7	(EC298-2 x SC-2(M)5-4)-2-7	51	44	0-90
35	80-4	(EC298-2 x SC-2(M)5-4)-19-4	51	46	1-95

contd.

S1. No.	F ₃ #	Pedigree	DTF ^{a/}	Ergot sev. (%)	
				Mean ^{b/}	Range
36	63-4	[EC 298-2 x SC-2 (M)5-4]-2-4	54	46	2-80
37	9-5	[SC-2 (M)5-4x(J1623x700049-2-6(P-2))]-3-5	47	46	1-90
38	65-1	[EC 298-2 x SC-2 (M)5-4]-4-1	46	47	2-80
39	67-1	[EC 298-2 x SC-2 (M)5-4]-6-1	51	47	2-95
40	2-1	[B 282 x SC-2 (M)5-4]-2-1	55	47	1-95
41	75-5	[EC 298-2 x SC-2 (M)5-4]-14-5	52	47	0-95
42	1-3	[B 282 x SC-2 (M)5-4]-1-3	52	48	0-80
43	63-2	[EC 298-2 x SC-2 (M)5-4]-2-2	55	49	0-95
44	34-2	[SC-1(S4)27-2x(700626-21xB282-2-1)]-7-2	55	49	2-85
45	74-6	[EC 298-2 x SC-2 (M)5-4]-13-6	49	49	2-95
46	80-2	[EC 298-2 x SC-2 (M)5-4]-19-2	51	49	0-95
47	34-1	[SC-1(S4)27-2x(700626-21xB282-2-1)]-7-1	50	49	10-95
48	9-2	[SC-2 (M)5-4xJ1623x700049-2-6(P-2)]-3-2	45	50	2-85
49	67-4	[EC 298-2 x SC-2 (M)5-4]-6-4	45	51	1-90
50	33-1	[SC-1(S4)27-2 x(700626-21xB282-2-1)]-6-1	47	51	0-95
51	9-10	[SC-2 (M)5-4xJ1623x700049-2-6(P-2)]-3-10	48	51	1-85
52	9-6	[SC-2 (M)5-4xJ1623x700049-2-6(P-2)]-3-6	46	52	10-90
53	90-4	[EC 298-2 x SC-1(S4)27-2]-10-4	45	53	0-90
54	9-4	[SC-2 (M)5-4 x J1623 x 700049-2-6(P-2)]-3-4	48	53	2-95
55	33-2	[SC-1(S4)27-2x(700626-21xB282-2-1)]-6-2	50	54	1-90
56	62-3	[EC 298-2 x SC-2 (M)5-4]-1-3	48	54	0-95
57	2-3	[B 282 x SC-2 (M)5-4]-2-3	50	54	0-90
58	74-10	[EC 298-2 x SC-2 (M)5-4]-13-10	51	55	1-95
59	65-2	[EC 298-2 x SC-2 (M)5-4]-4-2	50	55	2-98
60	65-6	[EC 298-2 x SC-2 (M)5-4]-4-6	45	55	5-90
61	33-5	[SC-1(S4)27-2x(700626-21xB282-2-1)]-6-5	57	56	25-90
62	33-3	[SC-1(S4)27-2x700626-21xB282-2-1)]-6-3	53	56	1-95
63	3-3	[B282 x SC-2 (M)5-4]-3-3	56	56	5-98
64	43-1	[SC-1(S4)27-2x(J25-5x700797-1-5-2)]-3-1	51	57	20-100
65	75-2	[EC 298-2 x SC-2 (M)5-4]-14-2	45	57	1-98
66	65-4	[EC 298-2 x SC-2 (M)5-4]-4-4	47	58	2-90
67	9-8	[SC-2 (M)5-4xJ1623x700049-2-6(P-2)]-3-8	44	58	2-90
68	10-5	[SC-2 (M)5-4x(J1623x700049-2-6(P-2))]-4-5	50	58	10-95
69	14-1	[(J104x700441-6-1)xSC-2 (M)5-4]-1-1	64	58	1-98
70	14-6	[(J104x700441-6-1)xSC-2 (M)5-4]-1-6	55	58	1-95

Contd.....

Sl. No.	F ₃ #	Pedigree	DTF ^a /	Ergot sev. (%)	
				Mean ^b /	Range
71	65-5	EC 298-2 x SC-2(M)5-4]-4-5	48	59	1-99
72	1-10	B 282 x SC-2(M)5-4]-1-10	51	59	10-90
73	3-2	B 282 x SC-2(M)5-4]-3-2	62	59	0-95
74	9-3	SC-2(M)5-4 x (J1623x700049-2-6(P-2)]-3-3	45	60	2-95
75	9-9	[SC-2(M)5-4x(J1623x700049-2-6(P-2)]-3-9	45	60	2-98
76	62-1	EC 298-2 x SC-2(M)5-4]-1-1	44	60	0-98
77	1-7	B282 x SC-2(M)5-4]-1-7	48	60	1-95
78	3-1	B282 x SC-2(M)5-4]-3-1	55	61	0-98
79	10-1	SC-2(M)5-4 x (J1623 x700049-2-6(P-2)]-4-144	62	62	10-93
80	76-3	[EC298-2 x SC-2(M)5-4]-15-3	47	62	50-98
81	9-7	SC-2(M)5-4x(J1623x700049-2-6(P-2)]-3-7	44	62	20-95
82	14-3	(J104x700441-6-1) x SC-2(M)5-4]-1-3	56	62	2-90
83	90-3	EC298-2 x SC-1(S4)27-2]-10-3	48	62	0-98
84	1-1	B282 x SC-2(M)5-4]-1-1	56	62	0-99
85	74-2	[EC298-2 x SC-2(M)5-4]-13-2	46	62	1-95
86	62-7	[EC298-2 x SC-2(M)5-4]-1-7	49	63	10-98
87	33-4	[SC-1(S4)27-2 x(700626-21xB282-2-1)]-6-4	47	63	20-95
88	62-8	[EC298-2 x SC-2(M)5-4]-1-8	45	63	10-90
89	19-2	[J104 x 700441-6-1xSC-2(M)5-4]-6-2	45	63	20-98
90	67-2	[EC298-2 x SC-2(M)5-4]-6-2	47	64	0-99
91	14-7	(J104 x 700441-6-1)xSC-2(M)5-4]-1-7	53	65	35-90
92	14-5	(J104x700441-6-1)xSC-2(M)5-4]-1-5	57	65	2-95
93	10-6	SC-2(M)5-4x(J1623x700049-2-6(P-2)]-4-6	44	65	0-98
94	10-3	SC-2(M)5-4x(J1623x700049-2-6(P-2)]-4-3	45	66	0-95
95	38-1	[SC-1(S4)27-2x(J25-5x700797-1-5-2)]-3-1	51	66	25-98
96	33-6	[SC-1(S4)27-2x(700626-21xB282-2-1)]-6-6	51	66	5-98
97	62-4	EC 298-2 x SC-2(M)5-4]-1-4	48	66	5-95
98	76-1	EC 298-2 x SC-2(M)5-4]-15-1	52	67	25-100
99	1-2	B282 x SC-2(M)5-4]-1-2	49	67	10-99
100	1-8	[B282 x SC-2(M)5-4]-1-8	51	68	10-98
101	75-4	[EC 298-2 x SC-2(M)5-4]-14-4	47	68	1-95
102	43-2	[SC-1(S4)27-2x(J25-5x700797-1-5-2)]-3-2	50	68	35-95
103	63-6	EC 298-2 x SC-2(M)5-4]-2-6	46	68	35-95
104	10-4	SC-2(M)5-4x(J1623x700049-2-6(P-2)]-4-4	52	69	5-98
105	23-5	(J104x700441-6-1)xSC-2(M)5-4]-10-5	48	69	35-98

Contd.....

Sl. No.	F ₃ #	Pedigree	TF ^{a/}	Ergot sev. (%)	
				Mean ^{b/}	Range
106	67-5	[EC 298-2 x SC-2(M)5-4]-6-5	47	69	10-98
107	82-2	[EC 298-2 x SC-1(S4)27-2]-2-2	44	70	2-95
108	76-2	[EC 298-2 x SC-2(M)5-4]-15-2	45	71	1-100
109	68-2	[EC 298-2 x SC-2(M)5-4]-7-2	48	71	5-98
110	16-1	[(J104x700441-6-1)xSC-2(M)5-4]-3-1	51	71	10-95
111	43-3	[SC-1(S4)27-2x(J25-5x700797-1-5-2)]-8-3	53	71	10-100
112	21-2	[(J104x700441-6-1)xSC-2(M)5-4]-8-2	47	72	50-95
113	37-1	[SC-1(S4)27-2x(J25-5x700797-1-5-2)]-2-1	45	72	1-98
114	62-5	[EC 298-2 x SC-2(M)5-4]-1-5	49	73	0-95
115	14-2	[(J104 x 700441-6-1)xSC-2(M)5-4]-1-2	53	73	20-100
116	27-3	[(J104 x 700441-6-1)xSC-2(M)5-4]-14-3	50	73	5-100
117	10-2	[SC-2(M)5-4x(J1623x700049-2-6(P-2)-4-2	44	75	5-100
118	2-2	[B 282 x SC-2(M)5-4]-2-2	54	75	0-98
119	82-1	[EC 298-2 x SC-1(S4)27-2]-2-1	47	75	1-100
120	1-5	[B 282 x SC-2(M)5-4]-1-5	45	75	20-98
121	67-3	[EC 298-2 x SC-2(M)5-4]-6-3	46	76	2-100
122	2-4	[B 282 x SC-2(M)5-4]-2-4	52	76	2-98
123	19-1	[(J104 x 700441-6-1)xSC-2(M)5-4]-6-1	46	76	35-99
124	65-3	[EC 298-2 x SC-2(M)5-4]-4-3	51	78	15-99
125	21-1	[(J 104 x 700441-6-1)xSC-2(M)5-4]-8-1	45	78	50-98
126	23-1	[(J104 x 700441-6-1) x SC-2(M)5-4]-10-1	44	79	25-99
127	23-7	[(J104 x 700441-6-1)xSC-2(M)5-4]-10-7	48	80	0-100
128	1-4	[B 282 x SC-2(M)5-4]-1-4	51	80	35-99
129	23-4	[(J104 x 700441-6-1)xSC-2(M)5-4]-10-4	47	82	40-99
130	27-2	[(J104 x 700441-6-1)xSC-2(M)5-4]-14-2	44	82	25-99
131	75-1	[EC 298-2 x SC-2(M)5-4]-14-1	44	82	35-100
132	37-2	[SC-1(S4)27-2x(J25-5x700797-1-5-2)-2-2	51	83	65-98
133	3-4	[B 282 x SC-2(M)5-4]-3-4	58	84	10-98
134	14-4	[(J104 x 700441-6-1)xSC-2(M)5-4]-1-4	46	85	60-99
135	23-2	[(J104 x 700441-6-1)xSC-2(M)5-4]-10-2	46	85	75-99
136	23-3	[(J104 x 700441-6-1)xSC-2(M)5-4]-10-3	45	88	40-99
137	23-6	[(J104 x 700441-6-1) x SC-2(M)5-4]-10-6	47	92	75-100
		5141 A	43	76	30-98
		DJ104	43	85	45-98
		ICH105	46	90	60-100

a/ Mean of 2 replications

b/ Mean of 30 bagged-inoculated-bagged heads from 2 replications

Appendix XXIV

Ergot reactions and days to 75 percent flowering (DTF) of 29 F₄ progenies (BST-II) during the post rainy season 1979-80 at ICRISAT Center (G-3D)

Sl No.	Entry No. R 1979-80	Pedigree	DTF ^a	Infection %	
				Mean ^b	Range
1	73-2	[J 2238 x (B282 x J804-1-21-2)]-2-2	66	16	0-75
2	73-3	2238 x (B282 x J 804-1-21-2)]-2-3	59	17	0-70
3	73-1	2238 x (B282 x J 804-1-21-2)]-2-1	59	20	0-77
4	73-4	[2238 x (B 282 x J 804-1-21-2)]-2-4	68	21	1-50
5	73-6	[2238 x (B282 x J 804-1-21-2)]-2-6	66	24	0-80
6	73-5	[J 2238 x (B282 x J804-1-21-2)]-2-5	62	24	0-60
7	21-3	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-6-3	50	31	1-80
8	109-1	(SC-1(S ₄)27-2 x B 282)-2-1	64	31	0-75
9	106-2	[B282 x J1244-1-1-1-1) x SC-1(S ₄)27-2]-2	55	33	0-80
10	19-4	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-4-4	52	44	10-90
11	19-3	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-4-3	57	45	1-95
12	140-2	SC-1(S ₄)27-2 x [Souna D ₂ x ExB-2(SD 914-2-1)] -6-2	56	45	10-85
13	106-1	[(B282 x J 1244-1-1-1-1) x SC-1(S ₄)27-2]-1	55	46	1-80
14	109-2	(SC-1(S ₄)27-2 x B282)-2	62	47	5-98
15	19-1	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-4-1	51	47	2-95
16	21-4	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-6-4	53	49	10-80
17	140-4	SC-1(S ₄)27-2 x [Souna D ₂ x ExB-2(SD914-2-1)] -6-4	51	50	1-90
18	140-6	SC-1(S ₄)27-2 x [Souna D ₂ xExB-2(SD-914-2-1)]-6-6	54	52	1-98
19	109-3	(SC-1(S ₄)27-2 x B 282)-3	57	56	0-95
20	140-5	(SC-1(S ₄)27-2 x [Souna D ₂ xExB-2(SD-914-2-1)]-6-5	50	60	20-95
21	106-3	[(B282 x J1244-1-1-1-1) x SC-1(S ₄)27-2]-3	53	61	5-98
22	21-1	[SC-2(M)5-4 x (J 25-1 x 700515-13-7)]-6-1	54	61	2-95
23	21-2	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-6-2	50	63	5-95
24	152-1	[J 260-1 x 700577-1-4-10-5) x SC-1(S ₄)27-2]-3-1	46	64	1-90
25	21-5	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-6-5	51	64	35-95
26	140-3	SC-1(S ₄)27-2x[Souna D ₂ xExB-2(SD-914-2-1)]-6-3	48	66	10-95
27	140-1	SC-1(S ₄)27-2x[Souna D ₂ x ExB-2(SD-914-2-1)]-6-1	54	66	5-95
28	19-2	[SC-2(M)5-4 x (J25-1 x 700515-13-7)]-4-2	52	68	20-98
29	152-2	[(J260-1 x 700577-1-4-10-5)xSC-1(S ₄)27-2]-3-2	46	78	40-100
		BJ 104 check	43	85	10-100

a/ Mean of 2 replications

b/ Mean of 30 bagged-inoculated-bagged heads in 2 reps.

Ergot reactions and downy mildew reactions (DM) and, days to 75 percent flowering (DTF) of 220 F₅ lines during the 1979-80 post rainy season at ICRI SAT Center

Sl. No.	F4 #	Pedigree	TF	Ergot sev. (%)		DM (%) ^{b/}
				Mean ^{a/}	Range	
1	134-6	(J2238 x J2210-2)-3-3-4-6	55	<1	0-2	1
2	140-7	(J2238 x J2210-2)-3-3-10-7	59	<1	0-5	4
3	13-6	(J606-2 x J703-1)-4-4-5-6	63	<1	0-5	0
4	134-3	(J2238 x J2210-2)-3-3-4-3	59	1	0-10	10
5	140-6	(J2238 x J2210-2)-3-3-10-6	55	1	0-10	9
6	140-2	(J2238 x J2210-2)-3-3-10-2	60	1	0-10	5
7	140-1	(J2238 x J2210-2)-3-3-10-1	55	1	0-10	12
8	140-3	(J2238 x J2210-2)-3-3-10-3	62	1	0-10	3
9	13-4	(J606-2 x J703-1)-4-4-5-4	63	1	0-5	0
10	134-5	(J2238 x J2210-2)-3-3-4-5	58	2	0-15	12
11	192-5	(700619 x 700599)-3-2-11-5	70	2	0-10	0
12	13-2	(J606-2 x J703-1)-4-4-5-2	62	3	0-10	0
13	143-3	(J2238 x J2210-2)-3-12-2-3	60	3	0-20	49
14	192-2	(700619 x 700599)-3-2-11-2	60	3	0-10	0
15	143-4	(J2238 x J2210-2)-3-12-2-4	65	3	0-10	55
16	192-9	(700619 x 700599)-3-2-11-9	67	3	0-25	0
17	192-1	(700619 x 700599)-3-2-11-12	63	4	0-25	0
18	143-6	(J2238 x J2210-2)-3-12-2-6	60	5	0-50	64
19	143-2	(J2238 x J2210-2)-3-12-2-2	57	5	0-20	40
20	192-16	(700619 x 700599)-3-2-11-16	65	5	0-20	0
21	143-10	(J2238 x J2210-2)-3-12-2-10	58	6	0-50	74
22	193-7	(700619 x 700599)-3-2-14-7	58	6	0-25	0
23	192-15	(700619 x 700599)-3-2-11-15	65	6	0-20	0
24	18-5	(J703-1 x J606-2)-3-2-7-5	58	7	0-70	1
25	140-4	(J2238 x J2210-2)-3-3-10-4	58	7	0-50	22
26	192-11	(700619 x 700599)-3-2-11-11	65	8	0-50	0
27	133-2	(J2238 x J2210-2)-3-3-3-2	58	8	0-60	12
28	192-13	(700619 x 700599)-3-2-11-13	70	9	1-40	0
29	143-1	(J2238 x J2210-2)-3-12-2-1	58	9	0-50	61
30	133-6	(J2238 x J2210-2)-3-3-3-6	60	10	0-80	19
31	192-20	(700619 x 700599)-3-2-11-20	60	10	0-40	0
32	134-4	(J2238 x J2210-2)-3-3-4-4	60	10	0-70	4
33	31-1	(J606-2 x J703-1)-4-8-8-1	60	11	0-45	0
34	192-8	(700619 x 700599)-3-2-11-8	65	11	1-50	0
35	143-12	(J2238 x J2210-2)-3-12-2-12	54	11	0-50	69

Sl. No.	F4 #	Pedigree	DTF	Ergot sev. (%)		b/ (%)
				Mean ^{a/}	Range	
36	133-5	(J2238 x J2210-2)-3-3-3-5	65	11	0-40	4
37	140-5	(J2238 x J2210-2)-3-3-10-5	57	12	0-50	15
38	143-7	(J2238 x J2210-2)-3-12-2-7	65	12	0-50	54
39	170-3	(J2210-2 x J2238)-1-8-8-3	62	12	0-75	7
40	253-15	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-20-15	63	13	0-50	14
41	193-9	(700619 x 700599)-3-2-14-9	58	13	0-40	0
42	192-6	(700619 x 700599)-3-2-11-6	67	13	1-75	0
43	193-14	(700619 x 700599)-3-2-14-14	60	14	1-40	0
44	100-7	(J1553 x J797-1)-2-3-1-7	58	14	0-75	0
45	100-4	(J1553 x J797-1)-2-3-1-4	63	14	1-60	0
46	244-7	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-7	58	14	0-45	10
47	143-11	(J2238 x J2210-2)-3-12-2-11	60	15	0-65	41
48	134-2	(J2238 x J2210-2)-3-3-4-2	60	15	0-85	1
49	192-14	(700619 x 700599)-3-2-11-14	61	15	1-85	0
50	231-1	(J2238 x J797-1)-2-2-6-1	62	15	0-60	5
51	143-8	(J2238 x J2210-2)-3-12-2-8	58	15	0-75	67
52	192-17	(700619 x 700599)-3-2-11-17	65	16	0-60	0
53	192-10	(700619 x 700599)-3-2-11-10	60	16	1-60	0
54	193-12	(700619 x 700599)-3-2-14-12	55	16	1-55	0
55	100-3	(J1553 x J797-1)-2-3-1-3	67	16	1-70	0
56	192-18	(700619 x 700599)-3-2-11-18	58	16	0-50	0
57	193-13	(700619 x 700599)-3-2-14-13	63	16	0-70	0
58	192-3	(700619 x 700599)-3-2-11-3	62	16	0-40	0
59	253-11	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-20-11	58	16	0-75	6
60	171-3	(700619 x 700599)-2-4-6-3	65	16	0-70	0
61	192-19	(700619 x 700599)-3-2-11-19	60	17	1-60	0
62	18-4	(J703-1 x J606-2)-3-2-7-4	65	17	0-65	1
63	128-7	(J2238 x J2210-2)-3-1-3-7	54	17	1-75	0
64	133-1	(J2238 x J2210-2)-3-3-3-1	59	17	1-70	1
65	140-8	(J2238 x J2210-2)-3-3-10-8	52	19	0-80	11
66	193-1	(700619 x 700599)-3-2-14-1	60	19	1-65	0
67	192-4	(700619 x 700599)-3-2-11-4	60	20	1-80	0
68	31-3	(J606-2 x J703-1)-4-8-8-3	58	20	0-75	0
69	133-8	(J2238 x J2210-2)-3-3-3-8	58	20	0-70	2
70	193-19	(700619 x 700599)-3-2-14-19	65	20	1-65	0

Sl. No.	F4 #	Pedigree	DTF	Ergot sev. (%)		DM (%) ^{b/}
				Mean ^{a/}	Range	
71	31-2	(J606-2 x J703-1)-4-8-8-2	63	20	1-65	0
72	193-17	(700619 x 700599)-3-2-14-17	57	20	0-75	0
73	253-6	(ExBouchi 700638-3-2 x SC-1(S4). 27-2)-1-10-20-6	67	21	1-70	17
74	72-8	(J703-1 x J797-1)-3-3-1-8	65	21	1-50	2
75	57-1	(J797-1 x J703-1)-10-1-1-1	63	21	1-80	68
76	252-6	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-6	60	21	1-80	38
77	252-4	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-4	65	22	1-65	23
78	25308	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-8	60	22	1-75	21
79	171-10	(700619 x 700599)-2-4-6-10	60	22	0-70	0
80	192-7	(700619 x 700599)-3-2-11-7	61	22	1-75	0
81	171-6	(700619 x 700599)-2-4-6-6	60	22	0-70	0
82	72-7	(J703-1 x J797-1)-3-3-1-7	65	23	1-65	0
83	193-8	(700619 x 700599)-3-2-14-8	54	23	0-70	0
84	133-3	(J2238 x J2210-2)-3-3-3-3	60	23	0-75	55
85	57-8	(J797-1 x J703-1)-10-1-1-8	57	23	1-95	39
86	193-15	(700619 x 700599)-3-2-14-15	54	23	1-65	0
87	252-9	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-9	62	23	0-75	18
88	191-2	(700619 x 700599)-3-2-9-2	58	23	0-80	4
89	72-2	(J703-1 x J797-1)-3-3-1-2	67	24	1-60	0
90	250-7	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-17-7	55	24	0-85	9
91	250-2	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-17-2	56	25	0-80	10
92	244-2	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-2	59	26	1-80	2
93	193-18	(700619x700599)-3-2-14-18	60	26	1-70	0
94	252-8	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-8	60	26	1-70	2
95	253-3	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-3	65	26	2-65	11
96	252-2	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-2	58	26	1-95	14
97	128-10	(J2238 x J2210-2)-3-1-3-10	51	28	0-70	1
98	167-10	(700619 x 700599)-2-4-2-10	60	29	2-80	0
99	253-9	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-9	69	29	1-80	17
100	253-12	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-12	65	29	1-80	26

Sl. No.	F ₄ #	Pedigree	DTF	Ergot sev. (%)		DM ^b (%) ^{b/}
				Mean ^{a/}	Range	
101	167-7	(700619 x 700599)-2-4-2-7	62	29	0-65	0
102	253-13	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-13	46	29	1-90	30
103	72-3	(J703-1xJ797-1)-3-3-1-3	60	29	2-95	0
104	193-10	(700619x700599)-3-2-14-10	60	30	1-80	0
105	167-6	(700619 x 700599)-2-4-2-6	55	30	1-70	0
106	13-5	(J606-2 x J703-1)-4-4-5-5	58	30	0-95	0
107	13-7	(J606-2 x J703-1)-4-4-5-7	65	31	0-90	0
108	193-2	(700619 x 700599)-3-2-14-2	54	31	0-80	0
109	231-4	(J2238 x J797-1)-2-2-6-4	54	31	0-85	0
110	250-3	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-17-3	52	31	2-75	7
111	18-7	(J703-1 x J606-2)-3-2-7-7	62	32	0-90	0
112	167-3	(700619 x 700599)-2-4-2-3	62	32	0-90	0
113	57-5	(J797-1 x J703-1)-10-1-1-5	56	32	1-80	34
114	133-4	(J2238 x J2210-2)-3-3-3-4	58	32	0-80	6
115	193-3	(700619 x 700599)-3-2-14-3	58	32	1-80	0
116	252-10	(ExBouchi 700638-3-2 x SC-1(S4) 27-2)-1-10-19-10	53	33	0-95	38
117	253-10	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-10	67	33	2-75	5
118	57-6	(J797-1 x J703-1)-10-1-1-6	60	33	2-95	40
119	193-4	(700619 x 700599)-3-2-14-4	60	33	1-80	0
120	252-7	(ExBouchi 700638-3-2 x SC-1(S4) 27-2)-1-10-19-7	65	33	2-95	15
121	244-5	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-5	65	34	1-80	10
122	72-4	(J703-1 x J797-1)-3-3-1-4	65	34	2-75	1
123	143-5	(J2238 x J2210-2)-3-12-2-5	55	34	2-80	49
124	13-3	(J606-2 x J703-1)-4-4-5-3	58	35	1-80	0
125	72-6	(J703-1 x J797-1)-3-3-1-6	59	35	1-80	0
126	253-14	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-14	65	35	1-80	8
127	231-3	(J2238 x J797-1)-2-2-6-3	53	35	2-75	0
128	170-1	(J2210-2 x J2238)-1-8-8-1	59	35	2-80	0
129	250-5	(ExBouchi 700638-3-2xSC-1(S4)-27-2) -1-10-17-5	51	36	2-80	33
130	171-5	(700619 x 700599)-2-4-6-5	53	36	0-80	0

Sl. No.	F ₄ #	Pedigree	DTF	Ergot sev. (%)		DM (%) ^{b/}
				Mean ^{a/}	Range	
131	128-9	(J2238 x J2210-2)-3-1-3-9	54	36	0-90	0
132	250-6	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-17-6	60	36	0-98	9
133	143-9	(J2238 x J2210-2)-3-12-2-9	58	36	0-95	43
134	57-4	(J797-1 x J703-1)-10-1-1-4	54	36	2-75	53
135	171-8	(700619 x 700599)-2-4-6-8	62	36	1-85	0
136	134-7	(J2238 x J2210-2)-3-3-4-7	58	37	0-75	21
137	171-2	(700619 x 700599)-2-4-6-2	65	37	1-90	0
138	170-2	(J2210-2 x J2238)-1-8-8-2	58	38	0-80	1
139	134-1	(J2238 x J2210-2)-3-3-4-1	66	38	1-80	20
140	13-1	(J606-2 x J703-1)-4-4-5-1	60	38	1-90	0
141	244-3	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-3	67	39	0-90	24
142	171-7	(700619 x 700599)-2-4-6-7	65	39	2-80	0
143	192-1	(700619 x 700599)-3-2-11-1	52	39	1-85	0
144	31-4	(J606-2 x J703-1)-4-8-8-4	51	39	2-85	34
145	250-4	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-17-4	51	39	0-75	14
146	171-4	(700619 x 700599)-2-4-6-4	62	40	1-75	0
147	193-11	(700619 x 700599)-3-2-14-11	51	40	2-85	0
148	133-7	(J2238 x J2210-2)-3-3-3-7	55	40	0-90	12
149	18-2	(J703-1 x J606-2)-3-2-7-2	51	40	2-90	0
150	167-9	(700619 x 700599)-2-4-2-9	60	41	2-95	0
151	72-1	(J703-1 x J797-1)-3-3-1-1	61	41	5-90	0
152	171-1	(700619 x 700599)-2-4-6-1	65	41	5-90	0
153	57-3	(J797-1 x J703-1)-10-1-1-3	55	41	5-80	80
154	18-3	(J703-1 x J606-2)-3-2-7-3	58	41	2-90	0
155	253-1	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-1	60	42	2-90	3
156	252-1	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-1	58	42	0-95	9
157	193-6	(700619 x 700599)-3-2-14-6	65	42	0-80	0
158	18-6	(J703-1 x J606-2)-3-2-7-6	58	43	2-80	0
159	57-2	(J797-1 x J703-1)-10-1-1-2	58	43	2-90	58
160	253-4	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-4	61	43	2-80	0

S1. No.	F ₄ #	Pedigree	DTF	Ergot sev.(%)		DM (%) ^{b/}
				Mean ^{a/}	Range	
161	231-2	(J2238 x J797-1)-2-2-6-2	56	44	10-90	3
162	253-7	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-20-7	60	44	2-90	60
163	193-16	(700619 x 700599)-3-2-14-16	58	44	2-80	0
164	57-7	(J797-1 x J703-1)-10-1-1-7	55	44	1-90	28
165	167-4	(700619 x 700599)-2-4-2-4	62	44	2-90	0
166	253-5	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-5	65	44	2-80	13
167	244-4	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-4	54	45	1-90	12
168	18-1	(J703-1 x J606-2)-3-2-7-1	62	45	1-80	0
169	100-8	(J1553 x J797-1)-2-3-1	62	45	1-90	0
170	244-6	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-6	60	45	0-90	8
171	252-3	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-3	60	46	5-90	3
172	18-8	(J703-1 x J606-2)-3-2-7-8	63	46	5-90	0
173	167-2	(700619 x 700599)-2-4-2-2	58	46	10-98	0
174	167-1	(700619 x 700599)-2-4-6-1	58	46	2-90	0
175	170-4	(J2210-2 x J2238)-1-8-8-4	60	46	2-90	0
176	253-2	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-20-2	58	46	2-90	
177	244-1	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-11-1	62	47	2-98	0
178	171-9	(700619 x 700599)-2-4-6-9	67	48	2-90	0
179	72-5	(J703-1 x J797-1)-3-3-1-5	60	48	5-90	2
180	170-7	(J2210-2 x J2238)-1-8-8-7	54	48	1-90	2
181	191-13	(700619 x 700599)-3-2-9-13	51	49	1-95	0
182	252-5	(ExBouchi 700638-3-2xSC-1(S4) 27-2)-1-10-19-5	60	50	5-98	7
183	170-8	(J2210-2 x J2238)-1-8-8-8	54	50	2-90	0
184	191-5	(700619 x 700599)-3-2-9-5	62	51	0-95	1
185	191-12	(700619 x 700599)-3-2-9-12	63	51	2-95	0
186	167-8	(700619 x 700599)-2-4-2-8	61	51	5-100	0
187	100-6	(J1553 x J797-1)-2-3-1-6	60	51	5-95	0
188	193-5	(700619 x 700599)-3-2-14-5	54	52	1-80	0
189	191-7	(700619 x 700599)-3-2-9-7	54	53	2-90	0
190	170-6	(J2210-2 x J2238)-1-8-8-6	58	53	5-95	0

Sl. No.	F ₄ #	Pedigree	TF	Ergot sev. (%)		DM _b (%)
				Mean ^{a/}	Range	
191	100-5	(J1553 x J797-1)-2-3-1-5	62	54	10-90	0
192	191-10	(700619 x 700599)-3-2-9-10	46	54	1-90	0
193	128-3	(J2238 x J2210-2)-3-1-3-3	55	55	5-95	1
194	128-2	(J2238 x J2210-2)-3-1-3-2	51	56	25-95	5
195	198-1	(J2238 x J1553)-1-5-19-1	48	56	5-100	0
196	167-11	(700619 x 700599)-2-4-2-11	58	57	0-95	0
197	250-1	(ExDouchi 700638-3-2xSC-1(S ⁴) 27-2)-1-10-17-1	55	57	0-85	10
198	170-5	(J2210-2 x J2238)-1-8-8-5	53	58	25-90	0
199	167-12	(700619 x 700599)-2-4-2-12	60	59	5-90	0
200	128-1	(J2238 x J2210-2)-3-1-3-1	51	60	0-98	3
201	191-8	(700619 x 700599)-3-2-9-8	54	60	20-95	0
202	128-6	(J2238 x J2210-2)-3-1-3-6	44	60	0-98	0
203	191-11	(700619 x 700599)-3-2-9-11	58	61	5-95	0
204	198-6	(J2238 x J1553)-1-5-19-6	44	62	0-100	0
205	191-1	(700619 x 700599)-3-2-9-1	58	62	20-100	0
206	167-5	(700619 x 700599)-2-4-2-5	58	63	20-100	0
207	191-9	(700619 x 700599)-3-2-9-9	58	64	1-95	0
208	128-4	(J2238 x J2210-2)-3-1-3-4	47	65	15-100	0
209	128-8	(J2238 x J2210-2)-3-1-3-8	55	65	10-95	0
210	100-2	(J1553 x J797-1)-2-3-1-2	61	66	25-95	0
211	191-3	(700619 x 700599)-3-2-9-3	54	66	10-95	0
212	100-1	(J1553 x J797-1)-2-3-1-1	67	66	5-98	0
213	191-4	(700619 x 700599)-3-2-9-4	58	67	2-95	0
214	128-5	(J2238 x J2210-2)-3-1-3-5	49	69	10-95	19
215	198-4	(J2238 x J1553)-1-5-19-4	51	69	0-98	0
216	198-2	(J2238 x J1553)-1-5-19-2	47	69	0-98	0
217	191-14	(700619 x 700599)-3-2-9-14	57	70	20-95	0
218	198-5	(J2238 x J1553)-1-5-19-5	54	77	25-98	0
219	191-6	(700619 x 700599)-3-2-9-6	49	78	20-98	0
220	198-3	(J2238 x J1553)-1-5-19-3	47	80	7-98	0
		BJ 104 Check	42	88	50-100	0
		ICH 105 Check	47	89	60-100	0

^{a/} Mean of 30 bagged-inoculated-bagged heads from 3 replications

^{b/} Recorded in downy mildew nursery

Appendix XXVI

Ergot reactions and days to 75 percent flowering (DTF) of 620 F₅ entries during the post-rainy season 1979-80 at ICRISAT Center (G3-D)

Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
1	67	(J606-2xJ703-1)-6-1-1-5	86	1	0-1
2	345	(ExBouchi 700638-3-2xSC-1(S4)27-2)- -7-4-4-6	54	1	0-2
3	269	(J2238xJ2210-2)-3-3-3-7	61	1	0-2
4	238	(J2210-2xJ2238)-2-7-3-1	69	1	0-2
5	241	(J2210-2xJ2238)-2-7-3-4	59	1	0-2
6	263	(J2238xJ2210-2)-3-3-8-1	59	1	0-10
7	577	(700619x700599)-3-2-3-1	66	2	0-10
8	82	(J606-2xJ703-1)-6-2-10-3	72	2	0-10
9	73	(J606-2xJ703-1)-6-1-1-11	81	2	0-20
10	66	(J606-2xJ703-1)-6-1-1-4	82	2	0-15
11	248	(J2238xJ2210-2)-3-3-2-7	69	3	0-20
12	262	(J2238 x J2210-2)-3-3-5-9	69	3	1-15
13	582	(700619x700599)-3-2-3-6	71	3	1-20
14	247	(J2238xJ2210-2)-3-3-2-6	69	3	0-30
15	589	(700619x700599)-3-2-4-1	81	3	2-5
16	409	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1 -10-8-5	67	4	0-10
17	72	(J606-2xJ703-1)-6-1-1-10	66	4	0-35
18	416	(ExBouchi 700638-3-2xSC-1(S4)27-2)- 1-10-13-6	69	5	0-60
19	42	(J606-2xJ703-1)-4-8-3-2	83	5	0-60
20	486	(ExBouchi 700638-3-2xSC-1(S4)27-2)- 1-2-1-4	67	5	0-40
21	612	(700619x700599)-9-6-1-4	79	5	5-5
22	588	(700619x700599)-3-2-3-12	76	5	1-40
23	198	(J2210-2xJ2238)-1-5-2-2	63	5	1-40
24	460	(ExBouchi 700638-3-2xSC-1(S4)27-2)- 1-10-23-3	72	6	0-25
25	545	(700619x700599)-2-4-8-5	67	6	0-25
26	51	(J606-2xJ703-1)-4-8-10-5	66	6	0-25
27	567	(700619x700599)-2-4-10-5	60	6	0-50
28	255	(J2238xJ2210-2)-3-3-5-2	61	6	0-35
29	69	(J606-2xJ703-1)-6-1-1-7	81	6	0-35
30	544	(700619x700599)-2-4-8-4	72	6	1-35

Contd....

Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
31	268	(J2238 x J2210-2) -3-3-8-6	61	7	0-50
32	199	(J2210-2xJ2238) -1-5-2-3	68	7	0-40
33	411	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-13-1	67	7	0-50
34	364	(ExBouchi 700638-3-2xSC-1(S4)27-2) -7-4-5-10	73	7	0-40
35	289	(J2238 x J1553) -1-5-7-3	72	7	0-60
36	359	(ExBouchi 700638-3-2xSC-1(S4)27-2) -7-4-5-5	56	7	0-40
37	579	(700619x700599) -3-2-3-3	62	7	1-35
38	373	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-1-6	67	7	0-40
39	281	(J2238xJ1553) -1-7-5-1	76	7	1-40
40	256	(J2238 x J2210-2) -3-3-5-3	66	7	1-20
41	362	(ExBouchi 700638-3-2xSC-1(S4)27-2) -7-4-5-8	56	8	0-70
42	197	(J 2210-2 x J2238) -1-5-2-1	63	8	0-60
43	393	(ExBouchi 700638-3-2 x SC-1(S4)27-2) 1-10-4-6	79	8	0-35
44	254	(J2238 x J2210-2) -3-3-5-1	72	8	0-50
45	371	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-1-4	63	8	0-50
46	100	(J 703-1 x J797-1) -3-3-4-6	81	8	0-40
47	5	(J 606-2 x J703-1) -4-4-1-5	56	8	1-35
48	522	(700619 x 700599) -2-4-1-2	65	8	0-35
49	531	(700619 x 700599) -2-4-4-7	67	8	0-35
50	403	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-7-1	62	8	0-60
51	527	(700619 x 700599) -2-4-4-3	72	8	1-30
52	59	(J606-2 x J703-1) -5-3-4-4	72	9	0-60
53	244	(J2238 x J2210-2) -3-3-2-3	69	9	0-40
54	444	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-18-3	79	9	0-35
55	157	(J1999 x J797-1) -5-2-3-1	61	9	0-35
56	566	(700619 x 700599) -2-4-10-4	65	9	0-70
57	553	(700619 x 700599) -2-4-8-13	74	9	0-35
58	41	(606-2 x J703-1) -4-8-3-1	83	9	0-50
59	607	(700619 x 700599) -3-2-4-19	65	9	0-50
60	261	(J2238 x J2210-2) -3-3-5-3	69	10	0-50
61	529	(700619 x 700599) -2-4-4-5	65	10	0-40
62	239	(J2210-2 x J2238) -2-7-3-2	63	10	1-50
63	563	(700619 x 700599) -2-4-10-1	62	10	0-50
64	583	(700619 x 700599) -3-2-3-7	62	10	1-40
65	372	(ExBouchi 700638-3-2xSC-1(S4)27-2) -1-10-1-5	72	10	0-70

Contd.....

Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
66	250	(J2238 x J2210-2)-3-3-2-9	76	10	0-70
67	466	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-9	67	11	0-50
68	410	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-8-6	67	11	0-50
69	167	(J2210-2 x J2238)-1-7-1-3	72	11	0-50
70	266	(J2238 x J2210-2)-3-3-8-4	59	11	0-70
71	463	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-6	72	11	0-50
72	550	(700619x700599)-2-4-8-10	65	11	1-55
73	498	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-2-2	62	11	0-60
74	571	(700619 x 700599)-2-4-10-9	60	11	0-30
75	414	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-4	65	11	0-70
76	415	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-5	67	11	0-60
77	77	(J606-2 x J703-1)-6-1-1-15	83	11	0-65
78	172	(J2210-2 x J2238)-1-18-5-3	61	12	0-50
79	546	(700619 x 700599)-2-4-8-6	67	12	0-40
80	251	(J2238 x J2210-2)-3-3-2-10	69	12	0-50
81	390	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-3	67	12	1-50
82	46	(J606-2 x J703-1)-4-8-3-6	69	12	0-45
83	437	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-16-1	72	12	0-40
84	358	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-4	59	12	1-95
85	573	(700619 x 700599)-2-4-10-11	62	12	0-50
86	450	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-21-4	66	12	1-50
87	265	(J2238 x J2210-2)-3-3-8-3	61	12	0-65
88	539	(700619 x 700599)-2-4-4-15	67	12	0-70
89	595	(700619 x 700599)-3-2-4-7	62	12	1-50
90	578	(700619 x 700599)-3-2-3-2	66	13	0-60
91	477	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-3	62	13	0-75
92	375	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-1-8	66	13	0-60
93	363	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-9	54	13	0-75
94	243	(J2238 x J2210-2)-3-3-2-2	66	13	0-70
95	585	(700619 x 700599)-3-2-3-9	79	13	0-50
96	271	(J2238 x J2210-2)-3-12-1-2	69	13	0-50
97	461	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-4	67	13	0-60
98	487	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-2-1-5	62	13	0-50
99	74	(J606-2 x J703-1)-6-1-1-12	72	13	0-40
100	564	(700619 x 700599)-2-4-10-2	62	13	0-50

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Sl. No.	Entry #	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
101	246	(J2238 x J2210-2)-3-3-2-5	63	13	0-75
102	408	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-8-4	65	13	0-60
103	451	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-21-5	65	13	0-70
104	360	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-6	63	13	0-50
105	413	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-3	67	13	1-70
106	540	(700619 x 700599)-2-4-8-9	74	13	0-40
107	166	(J2210-2 x J2238)-1-7-1-2	66	13	0-60
108	355	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-1	59	14	1-50
109	395	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-8	67	14	1-60
110	552	(700619 x 700599)-2-4-8-12	72	14	0-70
111	525	(700619 x 700599)-2-4-4-1	69	14	0-50
112	206	(J2210-2 x J2238)-1-5-2-10	74	14	0-50
113	368	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-1-1	79	14	0-50
114	541	(700619 x 700599)-2-4-8-1	65	14	0-50
115	240	(J2210-2 x J2238)-2-7-3-3	63	14	0-50
116	96	(J703-1 x J797-1)-3-3-4-2	86	14	0-70
117	264	(J2238 x J2210-2)-3-3-8-2	61	14	0-98
118	389	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-2	63	14	0-70
119	209	(J2210-2 x J2238)-1-5-7-2	66	15	1-50
120	365	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-11	59	15	0-50
121	533	(700619 x 700599)-2-4-4-9	69	15	0-50
122	48	(J606-2 x J703-1)-4-8-10-2	63	15	0-50
123	547	(700619 x 700599)-2-4-8-7	74	15	0-40
124	129	(J797-1 x J703-1)-10-1-4-8	72	15	0-60
125	280	(J2238 x J2210-2)-3-12-1-11	67	15	0-80
126	64	(J606-2 x J703-1)-6-1-1-2	81	15	0-60
127	514	(ND2282-79-1xExBouchi 700638-3-2)-6-1-4-1	76	15	1-60
128	532	(700619 x 700599)-2-4-4-8	69	15	0-50
129	475	(ExBouchi 700638-3-2xSC-1(S4)-27-2)-1-10-25-1	62	15	0-50
130	165	(J2210-2 x J2238)-1-7-1-1	64	15	0-65
131	44	(J606-2 x J703-1)-4-8-3-4	76	16	0-95
132	540	(700619 x 700599)-2-4-4-16	72	16	0-60
133	417	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-7	67	16	0-80
134	279	J2238 x J2210-2)-3-12-1-10	63	16	0-50
135	568	(700619 x 700599)-2-4-10-6	60	16	0-50

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Sl. No.	Entry # R 79-80	Pedigree	DTF	EPgot sev.(%)	
				Mean ^a	Range
136	542	(700619 x 700599)-2-4-8-2	67	16	0-50
137	235	(J2210-2 x J2238)-1-16-5-2	81	16	0-75
138	515	(ND2282-79-1 x ExBouchi 700638-3-2)-6-1-4-2	72	16	0-80
139	548	(700619 x 700599)-2-4-8-3	67	16	0-50
140	581	(700619 x 700599)-3-2-3-5	65	16	1-80
141	47	(J606-2 x J703-1)-4-8-10-1	68	17	1-50
142	57	(J606-2 x J703-1)-5-3-4-2	63	17	0-75
143	2	(J606-2 x J703-1)-4-4-1-2	58	17	1-45
144	83	(J606-2 x J703-1)-6-2-10-4	69	17	0-60
145	260	(J2238 x J2210-2)-3-3-5-7	61	17	0-80
146	418	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-8	65	17	0-80
147	366	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-12	63	17	0-60
148	349	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-10	72	17	0-75
149	367	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-13	83	18	0-60
150	9	(J606-2 x J703-1)-4-4-2-4	66	18	0-50
151	202	(J2210-2 x J2238)-1-5-2-6	69	18	1-50
152	499	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-2-1	62	18	1-65
153	399	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-4	65	18	0-70
154	152	(J1999xJ2210-2)-6-9-4-1	79	18	0-60
155	18	(J606-2 x J703-1)-4-7-1-4	69	18	0-80
156	79	(J606-2 x J703-1)-6-1-1-17	72	18	0-90
157	538	(700619 x 700599)-2-4-4-14	69	18	0-50
158	572	(700619 x 700599)-2-4-10-10	60	18	0-80
159	561	(700619 x 700599)-2-4-9-5	65	19	1-50
160	169	(J2210-2 x J2238)-1-7-1-5	74	19	0-75
161	448	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-21-2	73	19	0-80
162	565	(700619 x 700599)-2-4-10-3	60	19	0-70
163	45	(J606-2 x J703-1)-4-8-3-5	68	19	0-50
164	200	(J2210-2 x J2238)-1-5-2-4	66	19	1-60
165	556	(700619 x 700599)-2-4-8-16	67	19	0-80
166	357	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-3	66	19	1-70
167	534	(700619 x 700599)-2-4-4-10	62	19	1-40
168	586	(700619 x 700599)-3-2-3-10	76	20	0-60
169	127	(J797-1 x J703-1)-10-1-4-6	68	20	1-70
170	353	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-14	59	20	0-80

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^{a/}	Range
171	257	(J2238 x J2210-2)-3-3-5-4	63	20	0-50
172	500	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-2-2	72	20	0-70
173	587	(700619 x 700599)-3-2-3-11	67	20	1-50
174	12	(J606-2 x J703-1)-4-4-4-2	63	20	0-60
175	98	(J703-1 x J797-1)-3-3-4-4	33	20	1-50
176	21	(J606-2 x J703-1)-4-7-3-3	72	20	0-55
177	49	(J606-2 x J703-1)-4-8-10-3	61	20	0-75
178	11	(J606-2 x J703-1)-4-4-4-1	63	20	1-70
179	598	(700619 x 700599)-3-2-4-10	67	20	1-80
180	6	(J606-2 x J703-1)-4-4-2-1	63	20	1-70
181	278	(J2238 x J2210-2)-3-12-1-9	69	20	1-45
182	245	(J2238 x J2210-2)-3-3-2-4	63	21	0-80
183	479	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-5	67	21	0-70
184	84	(J606-2 x J703-1)-6-2-10-5	66	21	1-60
185	412	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-2	63	21	1-70
186	603	(700619 x 700599)-3-2-4-15	67	21	0-60
187	195	(J2210-2 x J2238)-1-4-6-4	66	21	1-60
188	350	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-11	67	21	0-50
189	374	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-1-7	63	21	0-75
190	294	(J2238 x J1553)-1-5-8-3	63	21	0-80
191	543	(700619 x 700599)-2-4-8-3	62	21	0-75
192	160	(J1099 x J797-1)-5-2-3-4	66	22	0-60
193	26	(J606-2 x J703-1)-4-7-3-8	74	22	1-80
194	526	(700619 x 700599)-2-4-4-2	65	22	0-80
195	369	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-1-2	63	22	0-90
196	594	(700619 x 700599)-3-2-4-6	76	22	1-90
197	449	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-21-3	69	22	0-80
198	584	(700619 x 700599)-3-2-3-8	62	22	0-65
199	127	(J797-1 x J703-1)-10-1-4-5	66	22	2-75
200	252	(J2238 x J2210-2)-3-3-2-11	63	22	0-70
201	497	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-2-1	59	22	0-75
202	576	(700619 x 700599)-2-4-10-14	66	22	1-80
203	580	(700619 x 700599)-3-2-3-4	62	22	1-65
204	608	(700619 x 700599)-3-2-4-20	67	22	0-80
205	616	(700619 x 700599)-9-6-3-4	81	22	5-40

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
206	347	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-8	72	23	0-60
207	339	(ExBouchi 700638-3-2xSC-1(Sr)27-2)-1-3-1-8	59	23	0-50
208	465	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-8	69	23	1-75
209	551	(700619 x 700599)-2-4-8-11	65	23	1-70
210	119	(J797-1 x J703-1)-10-1-2-6	82	23	0-80
211	597	(700619 x 700599)-3-2-4-9	65	23	1-55
212	472	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-6	65	23	0-75
213	346	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-7	72	23	1-75
214	370	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-1-3	59	23	0-80
215	462	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-5	73	23	0-60
216	217	(J2210-2 x J2238)-1-8-5-1	74	23	2-70
217	391	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-4	72	23	5-60
218	258	(J2238 x J2210-2)-3-3-5-5	63	24	1-80
219	459	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-2	61	24	1-75
220	76	(J606-2 x J703-1)-6-1-1-14	72	24	1-60
221	574	(700619 x 700599)-2-4-10-12	62	24	1-80
222	344	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-5	69	24	0-80
223	351	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-12	59	24	1-70
224	535	(700619 x 700599)-2-4-4-11	83	24	0-80
225	16	(J606-2 x J703-1)-4-7-1-2	59	24	1-60
226	20	(J606-2 x J703-1)-4-7-3-2	69	24	2-50
227	361	ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-7	73	24	0-75
228	352	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-13	59	24	0-90
229	425	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-6	72	24	1-80
230	341	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-2	56	24	0-75
231	569	(700619 x 700599)-2-4-10-7	60	24	1-75
232	457	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-22-5	54	24	1-70
233	613	(700619 x 700599)-9-6-3-1	67	25	0-75
234	447	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-21-1	72	25	0-65
235	338	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-7	54	25	1-70
236	474	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-8	62	25	0-90
237	400	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-5	67	25	0-80
238	609	(700619 x 700599)-9-6-1-1	65	25	1-60
239	10	(J606-2 x J703-1)-4-4-2-5	63	25	0-75
240	37	(J606-2 x J703-1)-4-7-9-2	60	25	0-90

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
241	458	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-1	65	25	1-70
242	505	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-5	76	26	2-95
243	55	(J606-2xJ703-1)-5-3-2-4	61	26	1-50
244	81	(J606-2 x J703-1)-6-2-10-2	68	26	0-50
245	242	(J2238 x J2210-2)-3-3-2-1	63	26	0-75
246	337	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-6	56	26	0-60
247	115	(J797-1 x J703-1)-10-1-2-2	74	26	1-80
248	376	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-1-9	63	26	0-75
249	419	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-13-9	65	26	0-80
250	149	(J1999 x J1553)-2-2-3-4	72	26	1-60
251	407	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-8-3	65	26	0-90
252	148	(J1999 x J1553)-2-2-8-3	64	26	1-70
253	528	(700619 x 700599)-2-4-4-4	69	26	0-80
254	555	(700619 x 700599)-2-4-8-15	73	26	0-80
255	452	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-21-6	65	26	1-98
256	210	(J2210-2 x J2238)-1-5-7-3	61	26	2-60
257	600	(700619 x 700599)-3-2-4-12	62	26	0-80
258	602	(700619 x 700599)-3-2-4-14	76	26	0-60
259	296	(J2238 x J1553)-1-5-8-5	63	27	0-80
260	570	(700619 x 700599)-2-4-10-8	60	27	0-75
261	102	(J703-1 x J797-1)-3-3-4-8	68	27	1-60
262	405	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-8-1	65	27	0-70
263	536	(700619 x 700599)-2-4-4-12	65	27	2-60
264	128	(J797-1 x J703-1)-10-1-4-7	66	27	5-90
265	80	(J606-2 x J703-1)-6-2-10-1	83	28	1-60
266	104	(J703-1 x J797-1)-3-3-5-1	68	28	2-80
267	136	(J1553 x J797-1)-2-3-2-2	63	28	2-80
268	615	(700619 x 700599)-9-6-3-3	75	28	0-60
269	445	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-18-4	66	28	0-65
270	203	(J2210-2 x J2238)-1-5-2-7	66	28	0-80
271	176	(J2210-2 x J2238)-1-18-9-4	72	28	0-80
272	441	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-16-5	66	28	0-90
273	272	(J2238 x J2210-2)-3-12-1-3	61	28	0-80
274	130	(J797-1 x J606-2)-1-1-7-1	61	28	1-50
275	174	(J2210-2 x J2238)-1-18-9-2	69	28	1-75

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
276	8	(J606-2 x J703-1)-4-4-2-3	59	29	1-70
277	439	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-16-3	66	29	0-90
278	31	(J606-2 x J703-1)-4-7-5-1	76	29	0-90
279	473	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-7	62	29	0-90
280	194	(J2210-2 x J2238)-1-4-6-3	33	29	0-60
281	150	(J1999 x J2210-2)-4-2-3-1	59	29	0-75
282	343	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-4	59	29	0-80
283	530	(700619 x 700599)-2-4-4-6	67	29	0-80
284	1	(J606-2 x J703-1)-4-4-1-1	61	29	1-95
285	620	(700619 x 700599)-7-1-2-3	60	29	0-95
286	596	(700619 x 700599)-3-2-4-8	67	29	1-80
287	125	(J797-1 x J703-1)-10-1-4-4	72	29	0-75
288	215	(J2210-2 x J2238)-1-8-4-5	59	29	1-75
289	168	(J2210-2 x J2238)-1-7-1-4	74	29	1-80
290	259	J2238 x J2210-2)-3-3-5-6	63	29	1-60
291	19	(J606-2 x J703-1)-4-7-3-1	61	29	1-75
292	326	(J2238 x J1553)-1-5-4-3	61	29	2-70
293	50	(J606-2 x J703-1)-4-8-10-4	68	30	0-75
294	233	(J2210-2 x J2238)-1-16-2-4	66	30	1-60
295	392	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-5	63	30	0-90
296	121	(J797-1 x J703-1)-10-1-2-3	72	30	0-80
297	156	(J1999 x J2210-2)-6-9-4-5	83	30	0-80
298	614	(700619 x 700599)-9-6-3-2	72	30	1-75
299	147	(J1999 x J1553)-2-2-8-2	64	30	1-80
300	71	(J606-2 x J703-1)-6-1-1-9	66	30	0-90
301	435	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-7	66	30	1-75
302	164	(J2210-2 x J1553)-1-1-5-4	66	30	1-90
303	29	(J606-2 x J703-1)-4-7-3-11	66	30	2-85
304	232	(J2210-2 x J2238)-1-16-2-3	63	30	1-75
305	221	(J2210-2 x J2238)-1-8-5-5	64	30	1-80
306	54	(J606-2 x J703-1)-5-3-2-3	73	31	2-80
307	204	(J2210-2 x J2238)-1-5-2-8	69	31	1-75
308	283	(J2238 x J1553)-1-7-5-3	73	31	0-80
309	159	(J1999 x J797-1)-5-2-3-3	66	31	1-80
310	4	(J606-2 x J703-1)-4-4-1-4	61	31	1-80

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^{a/}	Range
311	348	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-9	72	31	1-70
312	70	(J606-2 x J703-1)-6-1-1-8	66	31	1-66
313	190	(J2210-2 x J2238)-1-2-4-4	79	31	1-75
314	336	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-5	59	31	0-90
315	43	(J606-2 x J703-1)-4-8-3-3	63	31	1-70
316	267	(J2238 x J2210-2)-3-3-8-5	59	31	1-80
317	340	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-1	61	31	0-80
318	220	(J2210-2 x J2238)-1-8-5-4	74	32	1-90
319	35	(J606-2 x J703-1)-4-7-5-5	81	32	0-25
320	301	(J2238 x J1553)-1-5-9-4	53	32	0-80
321	139	(J1553 x J797-1)-2-3-2-5	61	32	0-60
322	431	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-3	65	32	1-95
323	478	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-4	65	32	0-80
324	53	(J606-2 x J703-1)-5-3-2-2	66	32	1-75
325	154	(J1999 x J2210-2)-6-9-4-3	83	32	0-90
326	170	(J2210-2 x J2238)-1-18-5-1	74	32	2-75
327	617	(700619 x 700599)-9-6-3-5	71	32	1-70
328	65	(J606-2 x J703-1)-6-1-1-3	81	32	1-80
329	394	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-7	72	32	0-70
330	61	(J606-2 x J703-1)-5-3-4-6	66	32	0-80
331	593	(700619 x 700599)-3-2-4-5	65	32	1-75
332	277	(J2238 x J2210-2)-3-12-1-8	61	32	0-80
333	611	(700619 x 700599)-9-6-1-3	72	32	2-90
334	575	(700619 x 700599)-2-4-10-13	60	32	1-98
335	27	(J606-2 x J703-1)-4-7-3-9	68	32	1-80
336	560	(700619 x 700599)-2-4-9-4	74	32	2-80
337	17	(J606-2 x J703-1)-4-7-1-3	64	33	1-80
338	464	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-23-7	67	33	0-80
339	454	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-22-2	54	33	1-80
340	381	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-2-5	66	33	1-90
341	601	(700619 x 700599)-3-2-4-13	74	33	0-70
342	118	(J797-1 x J703-1)-10-1-2-5	66	33	1-80
343	421	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-2	62	33	0-90
344	559	(700619 x 700599)-2-4-9-3	71	33	0-80
345	605	(700619 x 700599)-3-2-4-17	67	33	1-60

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^{a/}	Range
346	15	(J606-2 x J703-1)-4-7-1-1	66	33	0-90
347	610	(700619 x 700599)-9-6-1-2	81	33	2-75
348	231	(J2210-2 x J2238)-1-16-2-2	66	33	1-75
349	249	(J2238 x J2210-2)-3-3-2-8	63	33	1-75
350	333	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-2	54	34	0-80
351	124	(J797-1 x J703-1)-10-1-4-3	63	34	0-90
352	484	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-2-1-2	65	34	0-80
353	480	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-6	59	34	0-90
354	270	(J2238 x J2210-2)-3-12-1-1	61	34	1-70
355	186	(J2210-2 x J2238)-1-1-9-5	61	34	1-70
356	14	(J606-2 x J703-1)-4-4-4-4	63	34	1-95
357	334	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-3	61	34	1-80
358	434	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-6	65	34	1-75
359	436	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-8	66	34	0-80
360	117	(J797-1 x J703-1)-10-1-2-4	72	34	1-80
361	537	(700619 x 700599)-2-4-4-13	59	34	0-80
362	308	(J2238 x J1553)-1-5-16-3	53	34	0-95
363	3	(J606-2 x J703-1)-4-4-1-3	58	35	2-80
364	207	(J2210-2 x J2238)-1-5-2-11	74	35	1-80
365	253	(J2238 x J2210-2)-3-3-2-12	61	35	1-90
366	356	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-5-2	61	35	1-70
367	237	(J2210-2 x J2238)-1-16-5-4	72	35	1-90
368	219	(J2210-2 x J2238)-1-8-5-3	59	35	1-75
369	557	(J700619 x 700599)-2-4-9-1	67	35	0-95
370	442	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-18-1	79	35	0-90
371	521	(700619 x 700599)-2-4-1-1	62	35	1-90
372	216	(J2210-2 x J2238)-1-8-4-6	69	35	1-80
373	68	(J606-2 x J703-1)-6-1-1-6	79	36	1-65
374	592	(700619 x 700599)-3-2-4-4	60	36	1-70
375	382	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-2-6	63	36	0-90
376	299	(J2238 x J1553)-1-5-9-2	53	36	1-90
377	523	(700619 x 700599)-2-4-1-3	72	36	1-98
378	155	(J1999 x J2210-2)-6-9-4-4	69	36	0-75
379	520	(700583 x 700142)-1-3-1-4	74	36	1-80
380	354	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-15	61	36	5-85

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^{a/}	Range
381	191	(J2210-2 x J2238)-1-2-4-5	66	36	0-75
382	34	(J606-2 x J703-1)-4-7-5-4	75	36	1-80
383	63	(J606-2 x J703-1)-6-1-1-1	77	36	1-98
384	331	(J2238 x J1553)-1-3-1-2	59	36	0-90
385	213	(J2210-2 x J2238)-1-8-4-3	59	36	1-80
386	187	(J2210-2 x J2238)-1-2-4-1	61	36	0-80
387	113	(J797-1 x J703-1)-6-5-3-7	72	37	1-90
388	440	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-16-4	61	37	1-65
389	183	(J2210-2 x J2238)-1-1-9-2	66	37	0-80
390	89	(J703-1 x J606-2)-9-2-2-1	63	37	5-80
391	621	(700619 x J703-1)-7-2-4	71	37	0-90
392	606	(700619 x 700599)-3-2-4-18	70	37	1-90
393	456	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-22-4	61	37	2-95
394	377	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-2-1	66	37	1-80
395	329	(J2238 x J1553)-1-5-41-6	63	37	1-90
396	39	(J606-2 x J703-1)-4-7-9-4	63	37	1-90
397	446	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-18-5	72	38	0-90
398	116	(J797-1 x J703-1)-10-1-2-3	72	38	5-80
399	179	(J2210-2 x J2238)-1-1-6-3	59	38	0-80
400	145	(J1999 x J1553)-2-2-5-6	59	38	10-75
401	315	(J2238 x J1553)-1-5-18-1	59	38	0-90
402	36	(J606-2 x J703-1)-4-7-9-1	69	38	0-80
403	385	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-3-3	63	38	0-90
404	138	(J1553 x J797-1)-2-3-2-4	59	38	2-70
405	404	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-7-2	56	38	1-90
406	332	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-1	54	38	1-80
407	325	(J2238 x J1553)-1-5-41-2	59	38	5-90
408	28	(J606-2 x J703-1)-4-7-3-10	68	39	1-80
409	319	(J2238 x J1553)-1-5-35-1	59	39	1-80
410	110	(J797-1 x J703-1)-6-5-3-4	56	39	1-80
411	205	(J2210-2 x J2238)-1-5-2-9	61	39	1-90
412	509	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-9	72	39	1-98
413	512	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-12	65	39	5-80
414	282	(J2238 x J1553)-1-7-5-2	79	39	1-80
415	476	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-2	59	40	1-80

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
416	324	(J2238 x J1553)-1-5-41-1	59	40	5-80
417	40	(J606-2 x J703-1)-4-7-9-5	63	40	1-80
418	131	(J797-1 x J606-2)-1-1-7-2	63	40	0-80
419	591	(700619 x 700599)-3-2-4-3	62	40	1-80
420	502	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-2	69	40	2-90
421	38	(J606-2 x J703-1)-4-7-9-3	63	40	1-80
422	380	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-2-4	72	40	10-80
423	175	(J2210-2 x J2238)-1-18-9-3	66	40	1-95
424	429	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-1	69	41	1-85
425	228	(J2210-2 x J2238)-2-9-5-5	63	41	1-90
426	274	(J2238 x J2210-2)-3-12-1-5	66	41	0-80
427	24	(J606-2 x J703-1)-4-7-3-6	64	41	2-80
428	111	(J797-1 x J703-1)-6-5-3-5	68	41	1-80
429	30	(J606-2 x J703-1)-4-7-3-12	68	41	1-80
430	123	(J797-1 x J703-1)-10-1-4-2	73	41	5-80
431	288	(J2238 x J1553)-1-5-7-2	56	41	1-90
432	25	(J606-2 x J703-1)-4-7-3-7	68	41	1-80
433	114	(J797-1 x J703-1)-10-1-2-1	72	41	5-90
434	430	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-2	65	41	1-80
435	13	(J606-2 x J703-1)-4-4-4-3	59	41	5-80
436	562	(700619 x 700599)-2-4-9-6	71	41	1-80
437	52	(J606-2 x J703-1)-5-3-2-1	59	42	0-85
438	554	(700619 x 700599)-2-4-8-14	65	42	2-80
439	309	(J2238 x J1553)-1-5-16-4	56	42	10-80
440	103	(J703-1 x J797-1)-3-3-4-9	83	42	1-70
441	218	(J2210-2 x J2238)-1-8-5-2	68	42	0-95
442	93	(J703-1 x J797-1)-3-1-7-2	61	42	0-90
443	201	(J2210-2 x J2238)-1-5-2-5	61	42	5-75
444	109	(J797-1 x J703-1)-6-5-3-3	72	42	10-75
445	196	(J2210-2 x J2238)-1-4-6-5	67	42	1-80
446	291	(J2238 x J1553)-1-5-7-5	59	43	1-90
447	56	(J606-2 x J703-1)-5-3-4-1	63	43	1-90
448	494	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-6	59	43	2-80
449	323	(J2238 x J1553)-1-5-35-5	59	43	5-95
450	496	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-8	62	43	0-90

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Sl. No.	Entry #	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
451	292	(J2238 x J1553)-1-5-8-1	63	43	0-85
452	455	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-22-3	61	43	1-80
453	485	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-2-1-3	59	43	0-90
454	276	(J2238 x J2210-2)-3-12-1-7	63	43	0-90
455	101	(J703-1 x J797-1)-3-3-4-7	66	43	1-80
456	426	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-7	69	43	1-85
457	383	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-3-1	59	44	1-95
458	177	(J2210-2 x J2238)-1-1-6-1	61	44	1-80
459	306	(J2238 x J1553)-1-5-16-1	56	44	0-80
460	122	(J797-1 x J703-1)-10-1-4-1	72	44	1-80
461	234	(J2210-2 x J2238)-1-16-5-1	63	44	5-80
462	302	(J2238 x J1553)-1-5-9-5	63	44	1-80
463	146	(J1999 x J1553)-2-2-8-1	59	44	5-90
464	22	(J606-2 x J703-1)-4-7-3-4	64	44	1-80
465	290	(J2238 x J1553)-1-5-7-4	59	44	1-98
466	313	(J2238 x J1553)-1-5-17-4	63	44	0-95
467	293	(J2238 x J1553)-1-5-8-2	63	44	1-90
468	214	(J2210-2 x J2238)-1-8-4-4	64	45	1-95
469	153	(J1999 x J2210-2)-6-9-4-2	72	45	10-90
470	171	(J2210-2 x J2238)-1-18-5-2	64	45	10-80
471	182	(J2210-2 x J2238)-1-1-9-1	72	45	1-80
472	7	(J606-2 x J703-1)-4-4-2-2	63	45	2-80
473	287	(J2238 x J1553)-1-5-7-1	56	45	1-85
474	378	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-2-2	63	45	0-90
475	285	(J2238 x J1553)-1-5-2-2	63	45	1-95
476	78	(J606-2 x J703-1)-6-1-1-16	33	45	1-98
477	470	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-4	61	45	1-95
478	396	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-1	62	45	2-85
479	513	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-13	59	45	1-80
480	516	(ND2282-79-1xExBouchi 700638-3-2)-6-1-4-3	62	46	1-90
481	32	(J606-2xJ703-1)-4-7-5-2	61	46	1-86
482	23	(J606-2 x J703-1)-4-7-3-5	66	46	10-80
483	453	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-22-1	61	46	1-95
484	379	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-2-3	59	46	5-90
485	105	(J703-1 x J797-1)-3-3-5-2	63	46	0-85

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Sl. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^{a/}	Range
486	304	(J2238 x J1553)-1-5-12-2	59	46	2-80
487	398	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-3	65	46	5-90
488	321	(J2238 x J1553)-1-5-35-3	66	46	2-90
489	303	(J2238 x J1553)-1-5-12-1	59	47	2-75
490	384	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-3-2	63	47	0-93
491	134	(J797-1 x J606-2)-1-1-7-5	61	47	1-90
492	91	(J703-1 x J606-2)-9-2-2-3	61	47	1-95
493	60	(J606-2 x J703-1)-5-3-4-5	69	48	1-90
494	295	(J2238 x J1553)-1-5-8-4	59	48	1-90
495	517	(700583 x 700142)-1-3-1-1	74	48	1-90
496	489	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-1	53	48	2-80
497	208	(J2210-2 x J2238)-1-5-7-1	56	48	10-95
498	229	(J2210-2 x J2238)-2-9-5-6	59	48	5-95
499	327	(J2238 x J1553)-1-5-41-4	59	48	1-90
500	469	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-3	59	48	5-95
501	402	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-7	67	48	0-90
502	501	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-1	56	48	2-95
503	406	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-8-2	65	48	5-85
504	401	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-6	62	49	0-95
505	297	(J2238 x J1553)-1-5-8-6	56	49	1-90
506	311	(J2238 x J1553)-1-5-17-2	63	49	2-95
507	510	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-10	72	49	1-93
508	316	(J2238 x J1553)-1-5-18-2	69	49	1-90
509	92	(J703-1 x J797-1)-3-1-7-1	68	49	1-90
510	230	(J2210-2 x J2238)-1-16-2-1	69	50	1-90
511	432	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-4	65	50	0-95
512	273	(J2238 x J2210-2)-3-12-1-4	54	50	0-90
513	184	(J2210-2 x J2238)-1-1-9-3	59	50	10-80
514	94	(J703-1 x J797-1)-3-1-7-3	63	50	2-90
515	335	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-3-1-4	83	50	0-80
516	558	(700619 x 700599)-2-4-9-2	65	51	2-90
517	298	(J2238 x J2210-2)-1-5-9-1	59	51	0-98
518	188	(J2210-2 x J2238)-1-2-4-2	66	51	5-90
519	604	(700619 x 700599)-3-2-4-16	67	51	2-80
520	438	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-16-2	66	51	0-90

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S1. No.	Entry # R 79-80	Pedigree	DTF	Ergot sev. (%)	
				Mean ^a	Range
521	163	(J2210-2 x J1553)-1-1-5-3	61	51	5-90
522	471	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-5	56	52	10-90
523	420	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-1	63	52	0-95
524	317	(J2238 x J1553)-1-5-18-3	59	52	20-90
525	300	(J2238 x J1553)-1-5-9-3	54	52	0-85
526	506	(ExBouchi 700638-3-2xSC-1(Sr)27-2)-7-1-4-6	62	52	1-99
527	488	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-2-1-6	53	52	2-90
528	173	(J2210-2 x J2238)-1-18-9-1	63	52	1-95
529	225	(J2210-2 x J2238)-2-9-5-2	61	52	10-85
530	328	(J2238 x J1553)-1-5-41-5	59	52	5-95
531	507	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-7	62	53	1-98
532	193	(J2210-2 x J2238)-1-4-6-2	66	53	10-80
533	236	(J2210-2 x J2238)-1-16-5-3	69	53	5-95
534	508	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-3	65	53	1-99
535	599	(700619 x 700599)-3-2-4-11	65	53	1-90
536	312	(J2238 x J1553)-1-5-17-3	61	53	1-95
537	99	(J703-1 x J797-1)-3-3-4-5	69	53	10-90
538	158	(J1999 x J797-1)-5-2-3-2	61	53	10-90
539	504	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-4	62	53	10-80
540	120	(J797-1 x J703-1)-10-1-2-7	63	53	1-90
541	97	(J703-1 x J797-1)-3-3-4-3	66	53	10-90
542	433	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-15-5	65	54	1-85
543	204	(J2238 x J1553)-1-5-2-1	63	54	0-90
544	211	(J2210-2 x J2238)-1-8-4-1	56	54	5-90
545	275	(J2238 x J2210-2)-3-12-1-6	59	54	5-90
546	481	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-7	62	54	1-95
547	482	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-25-8	62	54	0-95
548	388	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-4-1	67	54	5-90
549	88	(J703-1 x J606-2)-8-2-4-4	59	55	1-98
550	386	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-3-4	59	55	2-98
551	95	(J703-1 x J797-1)-3-3-4-1	59	55	5-90
552	590	(700619 x 700599)-3-2-4-2	67	55	10-90
553	86	(J703-1 x J606-2)-8-2-4-2	69	55	2-90
554	310	(J2238 x J1553)-1-5-17-1	56	56	20-90
555	90	(J703-1 x J606-2)-9-2-2-2	66	56	10-85

contd.....

Sl. No.	Entry #	Pedigree	DTF	Ergot sev.(%)	
				Mean ^a	Range
556	140	(J1999 x J1553)-2-2-5-1	63	56	10-98
557	33	(J606-2 x J703-1)-4-7-5-3	63	56	5-90
558	342	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-4-4-3	54	56	10-95
559	330	(J2238 x J1553)-1-3-1-1	61	56	5-90
560	212	(J2210-2 x J2238)-1-8-4-2	56	57	5-95
561	222	(J2210-2 x J2238)-1-8-5-6	61	57	5-95
562	142	(J1999 x J1553)-2-2-5-3	61	57	10-90
563	143	(J1999 x J1553)-2-2-5-4	63	57	25-98
564	87	(J703-1 x J606-2)-8-2-4-3	61	57	10-98
565	424	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-5	62	57	10-90
566	426	(J2210-2 x J2238)-2-9-5-3	61	58	2-95
567	519	(700583 x 700142)-1-3-1-3	56	58	30-80
568	135	(J1553 x J797-1)-2-3-2-1	61	58	30-80
569	180	(J2210-2 x J2238)-1-1-6-4	59	58	1-98
570	185	(J2210-2 x J2238)-1-1-9-4	59	58	20-98
571	162	(J2210-2 x J1553)-1-1-5-2	61	58	10-90
572	223	(J2210-2 x J2238)-1-8-5-7	52	59	5-95
573	307	(J2238 x J1553)-1-5-16-2	59	59	10-95
574	178	(J2210-2 x J2238)-1-1-6-2	61	59	10-90
575	132	(J797-1 x J606-2)-1-1-7-3	59	59	25-95
576	427	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-8	59	59	1-90
577	133	(J797-1 x J606-2)-1-1-7-4	61	59	20-90
578	189	(J2210-2 x J2238)-1-2-4-3	66	59	10-85
579	493	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-5	62	60	20-95
580	192	(J2210-2xJ2238)-1-4-6-1	66	60	40-80
581	490	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-2	56	60	10-95
582	314	(J2238 x J1553)-1-5-17-5	63	60	2-95
583	483	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-2-1-1	65	60	2-95
584	619	(700619 x J703-1)-7-1-2-2	56	60	2-95
585	491	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-3	59	60	25-95
586	224	(J2210-2 x J2238)-2-9-5-1	63	61	2-95
587	62	(J606-2 x J703-1)-5-3-4-7	56	62	5-95
588	618	(700619 x J703-1)-7-1-2-1	71	62	5-95
589	181	(J2210-2 x J2238)-1-1-6-5	62	62	10-90
590	492	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-4	62	62	5-95

contd....

Sl. No.	Entry #	Pedigree	DTF	Ergot sev. (%)	
				Mean ^{a/}	Range
591	467	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-1	61	63	5-95
592	337	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-3-5	67	22	0-90
593	422	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-3	59	63	10-98
594	423	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-4	62	63	10-90
595	75	(J606-2 x J703-1)-6-1-1-13	66	64	5-95
596	397	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-6-2	65	64	5-90
597	107	(J797-1 x J703-1)-6-5-3-1	59	64	10-90
598	511	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-11	65	64	1-98
599	518	(700583 x 700142)-1-3-1-2	62	65	10-90
600	318	(J2238 x J1553)-1-5-18-4	56	65	20-95
601	428	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-14-9	59	66	1-95
602	106	(J703-1 x J797-1)-3-3-5-3	54	66	20-95
603	322	(J2238 x J1553)-1-5-35-4	55	66	10-98
604	58	(J606-2 x J703-1)-5-3-4-3	56	66	20-95
605	227	(J2210-2 x J2238)-2-9-5-4	56	68	25-95
606	144	(J1999 x J1553)-2-2-5-5	59	68	35-95
607	320	(J2238 x J1553)-1-5-35-2	59	70	40-95
608	112	(J797-1 x J703-1)-6-5-3-1	52	71	1-99
609	108	(J797-1 x J703-1)-6-5-3-2	52	71	10-99
610	85	(J703-1 x J606-2)-3-2-4-1	61	72	35-98
611	443	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-18-2	59	72	40-98
612	495	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-8-1-7	53	72	25-98
613	151	(J1999 x J2210-2)-4-2-3-2	59	73	40-99
614	305	(J2238 x J1553)-1-5-12-3	61	74	45-98
615	503	(ExBouchi 700638-3-2xSC-1(S4)27-2)-7-1-4-3	62	74	40-100
616	161	(J2210-2 x J1553)-1-1-5-1	59	74	45-98
617	286	(J2238 x J1553)-1-5-2-3	59	75	50-95
618	137	(J1553)x J797-1)-2-3-2-3	72	77	20-98
619	141	(J1999 x J1553)-2-2-5-2	66	76	40-98
620	468	(ExBouchi 700638-3-2xSC-1(S4)27-2)-1-10-24-2	61	82	50-100
	622	CHECK	65	65	15-95
	623	CHECK 5	67	80	35-98
	624	CHECK	54	68	25-95

^{a/} Mean of 20 bagged-inoculated-bagged heads

Appendix XXVII

Smut reactions and days to 75 percent flowering (DTF) of 21 IPMAT-5 and 23 inbred entries during the 1979 rainy season at Hissar

S1. No.	Pedigree	DTF	Smut severity (%)		
			Mean ^{a/}	Range	
					IPMAT-5
1	SSC-H76	65	< 1	0-2	
2	ICMS 7803	49	3	0-50	
3	MBH 110	49	3	0-20	
4	ICMS 7817	57	4	0-20	
5	MC-K 77	53	10	0-75	
6	IVS-P77	57	10	0-80	
7	WC-C75	57	10	0-85	
8	ICMS 7818	53	11	0-50	
9	NHB-3	47	11	0-50	
10	IVS 5454	60	12	0-90	
11	NEC-H77	57	14	0-70	
12	WC-B77	59	17	0-80	
13	BK 560	57	21	0-70	
14	MBH 124	49	22	0-75	
15	ICMS-7703	59	24	1-55	
16	ICH 226	49	24	0-35	
17	ICH 165	57	24	0-75	
18	PSB-8	57	29	0-90	
19	UCH 4	49	33	1-90	
20	ICH 241	53	34	1-95	
21	PHB-12	57	39	1-90	
	BJ-104	57	48	25-90	
	ICH-105	53	27	1-60	

a/ Mean of 40 inoculated-bagged heads

contd...

contd Appendix XXVII

Entry No.	Pedigree	DTF	Smut severity(%)	
			Mean ^{a/}	Range
<u>INBRED LINES</u>				
1	(SD ₂ xExB-2 SD914-1-9)x(J2002-1-2)-1-1	30	0	0-0
2	B282xJ888-2-18-2-1	63	0	0-0
3	(J934-7 x 700544-7-2-1)x(P23-2-4)	30	0	0-0
4	(J137 x 700797-16-2-2) x (J128-3)-5-1	74	0	0-0
5	(NW-2-4) x (SD ₂ x ExB-2)(SD914-1-9)-4	100	0	0-0
6	(J2002-1)x(J934-7x700544-7-2-1)-3-1	63	0	0-0
7	Gam73 x ICI7533-2-1-1	64	<1	0-1
8	B282 x J1244-1-1-14-3-1	64	<1	0-1
9	700112 x B816-1-5-1-1	58	<1	0-2
10	B282 x J888-27-17-2-1	59	1	0-5
11	B282 x J1244-1-1-11-2-1	62	1	0-5
12	(J2002-1) x (J934-7 x 700544-7-2-1)-2-2	58	2	0-5
13	B282 x J1244-1-1-3-2-1	63	4	0-25
14	A836xJ1798-32-2-1-1-2-1	63	4	0-15
15	B282 x J1244-1-1-7-2-1	63	5	0-20
16	Gam 73 x ICI7533-2-2-1	60	6	0-50
17	B282 x J1244-1-1-7-4-1	64	6	0-35
18	J1623x700490-2-4-3-6-2-1	62	7	0-15
19	(Gam 73 x ICI7533)-2-1-3	60	10	0-50
20	(Gam 73 x ICI7533)-2-1-1	58	12	0-50
21	(Gam 73 x ICI 7533)-2-1-4	60	13	0-75
22	B282 x J804-1-5-6-3-1	64	16	0-50
23	Gam-73 x ICI7533-2-1-1	59	22	0-50

a/ Mean of 40 inoculated-bagged-heads

Appendix XXVIII

Smut, downy mildew (DM) and rust reactions and days to 75 percent flowering (DTF) of 54 entry advance smut screening - A during the 1979 rainy season at Hissar

Entry No.	Pedigree	DTF	Infection (%)		DM ^b /	Rust ^c / Score
			Mean ^a	Range		
1.	EB 209-1-6-S-7-DM-1*	60	0	0-0	5.7	5
2.	EB 237-3-1-S-2-DM-1	62	0	0-0	0	5
3.	EBS 137-2-S-1-DM-1*	65	0	0-0	3	5
4.	SSC FS 252-S-4-DM-1	63	0	0-0	0	5
5.	P-10-S-1-DM-1*	63	<1	0-1	1.5	5
6.	EB 137-1-2-S-1-DM-1	64	<1	0-1	0	5
7.	700130-S-1-DM-1*	64	<1	0-1	2.9	5
8.	3/4 ExB 220-S-1-DM-1*	62	<1	0-1	4.4	5
9.	EB 137-2-S-1-DM-1	63	<1	0-2	2.1	5
10.	NEP ACC 10-568-5691-S-1-DM-1	50	<1	0-1	2.7	5
11.	ICI 7517-S-1-DM-1*	55	<1	0-1	0	5
12.	EB 106-2-1-S-1-DM-1	64	<1	0-1	3	5
13.	EBS 74-5-1-S-1-DM-1*	60	<1	0-3	0	5
14.	EB 80-1-2-S-1-DM-1*	63	<1	0-3	0	5
15.	EB 66-1-S-5-DM-1*	60	<1	0-1	2.9	3
16.	EB 170-2-S-8-DM-1	62	<1	0-4	3.6	5
17.	J 2238-S-2-DM-1	63	<1	0-2	0	5
18.	Serere 2A-4-S-2-DM-1	63	1	0-2	2.4	5
19.	EB 170-1-1-S-1-DM-1	70	1	0-7	4.2	4
20.	EB 229-4-1-S-1-DM-1*	60	1	0-3	0	5
21.	EB 188-2-3-S-1-DM-1*	62	1	0-3	0	5
22.	EB 237-2-S-1-DM-1	65	1	0-6	0	5
23.	EB 116-1-1-S-7-DM-1*	60	1	0-6	0	5
24.	EB 99-1-2-S-1-DM-1*	59	1	1-2	6.5	5
25.	EB 169-2-S-1-DM-1	63	1	0-3	3.8	5
26.	EB 132-2-S-8-DM-1*	63	1	0-13	0	5
27.	EB 74-3-S-1-DM-1	63	1	0-6	0	5
28.	P-20-S-1-DM-1	62	1	0-4	0	5
29.	UBI 7528-S-1-DM-1*	63	1	0-11	6.7	5
30.	WC FS 217-S-1-DM-1	62	2	0-8	2.7	5
31.	P-18-S-1-DM-1*	63	2	0-6	5.8	5
32.	EB 137-1-1-S-8-DM-1	65	3	0-20	1.7	5
33.	ND 2282-79-1-S-11-DM-1*	60	3	0-10	1.4	5
34.	EB 188-1-1-S-1-DM-1*	60	3	0-13	2.2	5
35.	SSC FS 137-S-1-DM-1*	55	3	0-15	0	5

Entry No.	Pedigree	DTB	Infection (%)		DTI% ^{b/}	Rust ^{c/} Score
			Mean ^{a/}	Range		
36.	IP NO 2253-S-1-DM-1	55	3	0-20	1	5
37.	EB 24-1-S-5-DM-1	55	3	0-9	7	5
38.	WC FS 148-S-1-DM-1*	60	4	0-20	5.7	5
39.	EB 54-1-1-C-1-DM-1*	57	4	0-20	1.7	5
40.	J 1999-S-5-DM-1*	61	5	0-15	1.4	5
41.	FB 117-2-1-S-6-DM-1*	62	5	0-25	3.6	5
42.	WC FS 139-S-1-DM-1*	63	5	0-30	0	5
43.	EB 148-3-S-1-DM-1*	59	6	0-20	0	5
44.	EBS 68-2-S-1	55	6	0-25	4.8	5
45.	EB 62-2-S-1-DM-1	55	7	2-30	0	5
46.	SDS FS 40-S-1-DM-1*	58	7	0-70	4.9	5
47.	MC FS 171-S-1-DM-1	55	8	0-80	4.7	5
48.	P-19-S-1-DM-1	70	8	0-40	4.6	5
49.	EB 117-4-3-S-4-DM-1*	60	10	0-95	2	5
50.	WC FS 88-S-1-DM-1	55	13	0-50	0	5
51.	EB 171-1-2-S-1-DM-1	59	13	0-45	3.6	5
52.	SDS FS 135-S-1-DM-1*	55	16	0-60	12.7	5
53.	J 1623 x WC 6-3-S-1-DM-1	53	17	0-75	0	5
54.	EBS 74-5-2-S-5-DM-1	62	20	0-70	7.9	5

^{a/} Mean of 10 inoculated - bagged heads

^{b/} Screened during 1978-79 Rabi in the downy mildew nursery at ICRISAT Center

^{c/} Based on 1-5 scale, scored during the 1978-79 Rabi at ICRISAT Center

* 60 smut free heads were selected for further testing

Appendix XXIX

Smut, Downy Mildew (DM) and Rust reactions and days to 75 percent flowering (DTF) of 525 entry Advanced Smut Screening-B during the 1979 rainy season at Hissar.

Entry No.	Plot # K 1979	Pedigree	TF	Smut sev. (%)		DM inc. (%)	Rust score
				Mean ^a	Range		
1	8511	SAR 466-S-1-DM-1*	66	0	0-0	2.3	5
2	8384	EE 142-1-1-S-3-2-DM-1	58	0	0-0	3.7	5
3	8416	EE 170-2-S-1-1-DM-1	69	0	0-0	0.0	5
4	8004	J-1-S-3-1-DM-1	56	0	0-0	0.0	5
5	8387	EB 146-1-1-S-1-3-DM-1	68	0	0-0	0.0	5
6	8038	IP 2253-S-5-1-DM-1	61	0	0-0	0.0	5
7	8519	E-55-S-1-DM-1	65	0	0-0	1.4	5
8	8327	EB 117-4-3-S-2-2-DM-1*	64	0	0-0	0.0	4
9	8137	WC FS 217-S-2-2-DM-1	68	0	0-0	0.0	3
10	8011	J 1974-S-2-1-DM-1	54	0	0-0	25.0	5
11	8266	EB 66-1-S-3-1-DM-1	64	0	0-0	0.0	2
12	8524	E-132-S-2-DM-1	68	0	0-0	0.0	3
13	8014	J 1999-S-3-2-DM-1	62	0	0-0	0.0	4
14	8270	EB 68-2-S-1-1-DM-1	62	0	0-0	1.7	5
15	8272	EBS 70-1-S-1-1-DM-1	66	0	0-0	7.0	2
16	8273	EBS 70-1-S-1-2-DM-1	67	0	0-0	0.0	2
17	8019	J 2226-S-1-1-DM-1*	64	0	0-0	0.0	5
18	8276	EBS 74-5-1-S-4-2-DM-1	70	0	0-0	6.7	5
19	8404	EB 148-1-S-5-3-DM-1	70	0	0-0	0.0	5
20	8054	SC-1(S4)27-2-S-2-3-DM-1	69	0	0-0	0.0	5
21	8151	MC FS 179-S-1-1-DM-1	64	0	0-0	2.5	5
22	8343	EB 132-2-S-5-2-DM-1*	62	0	0-0	6.5	5
23	8089	ND 2282-79-1-S-6-2-DM-1	67	0	0-0	0.0	3
24	8217	EBS 1-2-S-1-1-DM-1	71	0	0-0	0.0	5
25	8218	EBS 1-2-S-1-2-DM-1	70	0	0-0	0.0	5
26	8156	SSC FS 252-S-2-2-DM-1	64	0	0-0	20.0	4
27	8157	SSC FS 252-S-3-2-DM-1	71	0	0-0	16.2	5
28	8286	EB 80-1-2-S-2-1-DM-1	64	0	0-0	9.7	5
29	8287	EB 80-1-2-S-3-1-DM-1	58	0	0-0	0.0	5
30	8160	Ex PV AUC x 1975-S-1-1-DM-1	69	0	0-0	0.0	5
31	8383	EB 142-1-1-S-3-1-DM-1	66	0	0-0	8.6	5
32	8162	GAM 75 Bulk-S-1-2-DM-1	66	0	0-0	1.6	5
33	8037	IP No.2253-S-1-1-DM-1	63	0	0-0	1.3	5
34	8482	EB 237-2-S-3-2-DM-1	69	0	0-0	0.0	5
35	8039	IP No.2253-S-5-2-DM-1	51	0	0-0	1.3	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM inc. (%)	Rust ^{c/} score
				Mean ^{a/}	Range		
36	8422	EB 170-2-S-5-2-DM-1	71	0	0-0	1.2	5
37	8296	EB 112-1-S-1-1-DM-1*	54	0	0-0	0.0	5
38	8170	ICI 7516-S-2-2-DM-1	64	0	0-0	1.8	5
39	8171	ICI 7516-S-2-3-DM-1	64	0	0-0	3.3	5
40	8172	Sererere 2A-4-S-1-1-DM-1	56	0	0-0	9.4	5
41	8428	EB 175-1-1-S-1-2-DM-1	71	0	0-0	1.5	5
42	8174	Sererere 2A-4-S-3-1-DM-1	58	0	0-0	3.3	5
43	8430	EB 175-1-1-S-1-4-DM-1	72	0	0-0	0.0	5
44	8176	Sererere 2A-4-S-5-1-DM-1	62	0	0-0	0.0	5
45	8177	700544 x 700760-2-S-1-1-DM-1	67	0	0-0	4.2	3
46	8496	3/4 ExBornu 43-S-1-1-DM-1*	56	0	0-0	1.4	5
47	8179	700544 x 700760-2-S-3-1-DM-1	69	0	0-0	0.0	2
48	8084	ND 2282-79-1-S-5-1-DM-1	68	0	0-0	1.7	3
49	8340	EB 132-2-S-4-1-DM-1	63	0	0-0	4.7	5
50	8055	SC-1(S4)27-2-S-3-1-DM-1	62	0	0-0	0.0	5
51	8183	WC FS 308-S-1-1-DM-1	66	0	0-0	0.0	5
52	8120	WC FS 142-S-1-2-DM-1	62	0	0-0	6.8	5
53	8376	EB 137-2-S-7-1-DM-1*	67	0	0-0	4.3	5
54	8441	EB 209-1-6-S-4-1-DM-1*	63	0	0-0	1.2	5
55	8060	SC-2(M)2-12-S-1-2-DM-1	67	0	0-0	0.0	5
56	8506	MC FS 171-S-2-1-DM-1	64	0	0-0	0.8	5
57	5125	WC FS 148-S-1-2-DM-1	62	0	0-0	1.4	5
58	8445	EB 209-1-6-S-5-2-DM-1	64	0	0-0	3.0	5
59	8350	EB 137-1-1-S-3-1-DM-1	63	0	0-0	4.7	5
60	8478	EB 237-2-S-1-3-DM-1	69	0	0-0	0.0	5
61	8081	ND 2282-79-1-S-3-2-DM-1	69	0	0-0	0.0	4
62	8098	ND 2282-79-1-S-10-1-DM-1*	63	0	0-0	3.0	4
63	8099	ND 2282-79-1-S-10-2-DM-1	70	0	0-0	0.0	3
64	8101	700481-2-1-S-1-2-DM-1	62	0	0-0	0.0	5
65	8357	EB 137-1-2-S-3-2-DM-1*	62	0	0-0	0.0	5
66	8166	FS 127-S-1-2-DM-1	68	0	0-0	12.1	5
67	8309	EB 116-1-1-S-4-1-DM-1*	64	0	0-0	0.0	5
68	8074	ExBouchi 700638-1-3-S-8-1-DM-1	67	0	0-0	0.0	5
69	8329	EB 117-4-3-S-3-2-DM-1*	66	0	0-0	3.4	5
70	8458	EB 218-3-2-S-2-1-DM-1	63	0	0-0	0.0	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^b / inc. (%)	Pust ^c / score
				Mean ^a	Range		
71	8490	EB 237-3-4-S-4-2-DM-1	66	0	0-0	3.1	5
72	8236	EBS 46-1-2-S-2-2-DM-1	62	0	0-0	0.0	5
73	8269	EB 66-1-S-4-2-DM-1	64	0	0-0	6.0	3
74	8335	EBS 119-2-1-S-3-1-DM-1*	62	0	0-0	0.0	5
75	8412	EB 170-1-1-S-3-2-DM-1	68	0	0-0	0.0	4
76	8336	EBS 119-2-1-S-3-2-DM-1	64	0	0-0	0.0	5
77	8083	ND 2282-79-1-S-4-1-DM-1	64	0	0-0	0.0	3
78	8431	EB 175-1-1-S-1-5-DM-1	67	0	0-0	0.0	5
79	8147	LC FS 226-S-2-1-DM-1	64	0	0-0	1.4	5
80	8403	EB 148-1-S-5-2-DM-1	68	0	0-0	0.0	5
81	8342	EB 132-2-S-5-1-DM-1	59	0	0-0	9.6	5
82	8420	EB 170-2-S-3-1-DM-1	66	0	0-0	0.0	5
83	8356	EB 137-1-2-S-2-1-DM-1	63	0	0-0	0.0	5
84	8438	EB 209-1-6-S-2-2-DM-1	66	0	0-0	3.4	5
85	8377	EB 137-2-S-7-2-DM-1	64	0	0-0	1.6	5
86	8347	EB 137-1-1-S-1-1-DM-1*	60	0	0-0	34.2	5
87	8187	WC FS 346-S-1-2-DM-1	64	0	0-0	0.0	5
88	8488	EB 237-3-1-S-1-2-DM-1	67	0	0-0	0.0	5
89	8492	EB 239-1-1-S-1-2-DM-1	56	0	0-0	1.5	5
90	8239	EB 54-1-1-S-2-1-DM-1*	71	0	0-0	0.0	5
91	8113	WC FS 88-S-5-1-DM-1	62	0	0-0	0.0	5
92	8233	EBS 32-3-S-1-1-DM-1*	62	0	0-0	0.0	5
93	8401	EB 148-1-S-3-4-DM-1	69	0	0-0	0.0	5
94	8481	EB 237-2-S-2-2-DM-1	70	0	0-0	0.0	5
95	8259	EB 62-2-4-S-1-1-DM-1	69	0	0-0	0.0	2
96	8245	EB 58-3-S-1-1-DM-1	64	0	0-0	0.0	5
97	8164	GAM 75 Bulk-S-3-1-DM-1*	64	0	0-0	3.0	5
98	8423	EB 170-2-S-5-3-DM-1	70	0	0-0	0.0	5
99	8143	LC FS 29-S-2-2-DM-1	70	0	0-0	13.7	5
100	8505	EB 188-1-1-S-2-1-DM-1	71	0	0-0	0.0	5
101	8123	WC FS 142-S-3-2-DM-1	69	0	0-0	5.8	5
102	8353	EB 137-1-1-S-6-2-DM-1*	65	0	0-0	0.0	5
103	8491	EB 239-1-1-S-1-1-DM-1	67	0	0-0	4.7	5
104	8338	EBS 119-2-1-S-4-2-DM-1*	69	0	0-0	0.0	3
105	8167	ICI 7516-S-1-1-DM-1	69	<1	0-1	15.9	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^b / inc. (%)	Rust ^c / score
				Mean ^a	Range		
106	8453	EBS 218-1-S-3-1-DM-1*	58	<1	0-1	0.0	5
107	8062	SC-2(M)2-12-S-2-2-DM-1	54	<1	0-1	0.0	5
108	8324	EB 117-4-3-S-1-1-DM-1*	66	<1	0-1	0.0	4
109	8462	EB 218-3-2-S-4-1-DM-1*	56	<1	0-1	0.0	5
110	8498	3/4 ExB 68-S-1-1-DM-1	56	<1	0-1	3.5	5
111	8467	EB 229-2-S-3-2-DM-1	58	<1	0-1	0.0	5
112	8161	Ex PV. ANC x 1975-S-1-2-DM-1	57	<1	0-1	0.0	5
113	8427	EB 175-1-1-S-1-1-DM-1	68	<1	0-1	0.0	5
114	8374	EB 137-2-S-6-3-DM-1	60	<1	0-1	2.7	5
115	8318	EB 117-2-1-S-2-2-DM-1*	64	<1	0-1	0.0	5
116	8165	FS 127-S-1-1-DM-1	65	<1	0-1	30.1	5
117	8202	700713xSC-2(M)3-7-4-2-S-2-2-DM-1*	62	<1	0-1	7.3	5
118	8180	700544 x 700760-2-S-3-2-DM-1	69	<1	0-1	0.0	5
119	8473	EB 229-4-1-S-7-3-DM-1*	63	<1	0-1	21.5	5
120	8284	EB 80-1-1-S-4-2-DM-1	61	<1	0-1	2.1	5
121	8117	WC FS 136-S-1-1-DM-1	62	<1	0-1	7.3	3
122	8303	EB 115-1-3-S-3-1-DM-1	69	<1	0-1	0.0	5
123	8326	EB 117-4-3-S-2-1-DM-1*	69	<1	0-1	0.0	4
124	8059	SC-2(M)2-12-S-1-1-DM-1	62	<1	0-1	0.0	5
125	8294	EB 106-2-2-S-1-2-DM-1	60	<1	0-1	0.0	5
126	8142	LC FS 29-S-2-1-DM-1	63	<1	0-1	0.0	5
127	8058	SC-1(S4)27-2-S-4-2-DM-1	67	<1	0-1	0.0	3
128	8477	EB 237-2-S-1-2-DM-1	67	<1	0-1	0.0	5
129	8136	WC FS 217-S-2-1-DM-1	64	<1	0-1	3.4	5
130	8461	EB 218-3-2-S-3-2-DM-1	70	<1	0-1	0.0	5
131	8124	WC FS 148-S-1-1-DM-1	62	<1	0-1	0.0	5
132	8375	EB 137-2-S-6-4-DM-1	71	<1	0-1	1.4	5
133	8518	E-41-S-1-DM-1	69	<1	0-1	3.2	5
134	8158	SSC FS 252-S-3-1-DM-1	67	<1	0-2	23.4	4
135	8510	SAR 104-S-1-DM-1	51	<1	0-1	4.3	5
136	8446	EB 209-1-6-S-5-3-DM-1*	64	<1	0-2	5.1	5
137	8411	EB 170-1-1-S-3-1-DM-1	68	<1	0-2	0.0	5
138	8230	EB 24-1-S-2-1-DM-1	62	<1	0-2	1.4	5
139	8373	EB 207-2-S-3-1-DM-1	60	<1	0-2	1.8	5
140	8361	EB 137-1-2-S-1-1-DM-1	63	<1	0-1	0.0	5

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Entry No.	Plot # K 1979	Pedigree	TF	Smut sev. (%)		DM ^{b/} inc. (%)	Rust ^{c/} score
				Mean ^{a/}	Range		
141	8241	EB 54-1-1-S-5-1-DM-1	64	<1	0-1	0.0	5
142	8443	EB 209-1-6-S-4-3-DM-1	67	<1	0-2	8.5	5
143	8466	EB 229-2-S-3-1-DM-1*	66	<1	0-1	1.6	5
144	8134	WC FS 178-S-1-2-DM-1	61	<1	0-2	0.0	5
145	8138	WC FS 232-S-1-1-DM-1	54	<1	0-1	0.0	3
146	8409	EB 170-1-1-S-2-1-DM-1	69	<1	0-3	0.0	3
147	8363	EB 137-2-S-2-2-DM-1*	62	<1	0-1	0.0	5
148	8122	WC FS 142-S-3-1-DM-1	67	<1	0-2	4.3	5
149	8237	EBS 46-1-2-S-3-1-DM-1	64	<1	0-2	0.0	5
150	8152	SSC FS 92-S-1-1-DM-1*	63	<1	0-2	0-0	5
151	8168	ICI 7516-S-1-2-DM-1	69	<1	0-1	16.6	5
152	8150	MC FS 171-S-1-2-DM-1	64	<1	0-2	7.9	5
153	8135	WC FS 178-S-2-2-DM-1	56	<1	0-1	0.0	5
154	8025	J 2238-S-1-1-DM-1	63	<1	0-3	11.1	5
155	8489	EB 237-3-4-S-4-1-DM-1	54	<1	0-1	5.9	5
156	8023	J 2157-S-1-1-DM-1	62	<1	0-3	0.0	5
157	2260	EB 62-2-4-S-4-1-DM-1	64	<1	0-4	0.0	5
158	8501	3/4 ExB 219-S-1-2-DM-1	64	<1	0-1	1.3	5
159	8182	NW 1-10-1-S-1-2-DM-1	67	<1	0-3	0.0	3
160	8448	EB 209-1-6-S-6-2-DM-1	64	<1	0-3	1.8	5
161	8258	EBS 59-3-1-S-3-2-DM-1	68	<1	0-5	0.0	5
162	8128	WC FS 151-S-2-2-DM-1	63	<1	0-3	6.0	4
163	8092	ND 2282-79-1-S-8-1-DM-1	62	<1	0-3	1.5	5
164	8469	EB 229-4-1-S-5-1-DM-1	64	<1	0-5	0.0	5
165	8235	EB 44-1-S-1-2-DM-1	69	<1	0-3	6.6	3
166	8216	NEP 588-5690-S-9-2-DM-1	64	<1	0-5	0.0	3
167	8300	EB 112-1-S-3-1-DM-1*	63	<1	0-2	0.0	5
168	8188	WC FS 346-S-2-1-DM-1	63	<1	0-5	9.4	5
169	8475	EB 237-1-S-2-1-DM-1*	63	<1	0-2	0.0	5
170	8349	EB 137-1-1-S-2-1-DM-1*	60	<1	0-2	0.0	5
171	8127	WC FS 151-S-2-1-DM-1	64	<1	0-5	3.0	4
172	8328	EB 117-4-3-S-3-1-DM-1*	70	<1	0-5	0.0	5
173	8093	ND 2282-79-1-S-8-2-DM-1	62	<1	0-4	1.3	5
174	8146	LC FS 119-S-2-1-DM-1	64	1	0-5	2.8	5
175	8169	ICI 7516-S-2-1-DM-1	62	1	0-5	17.0	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^{b/} inc. (%)	Rust ^c score
				Mean ^{a/}	Range		
176	8069	ExBouchi 700638-1-3-S-2-1-DM-1	60	1	0-3	6.7	5
177	8348	EB 137-1-1-S-1-2-DM-1	70	1	0-2	0.7	5
178	8155	SSC FS 252-S-2-1-DM-1	52	1	0-5	3.8	5
179	8026	700130-S-1-1-DM-1	63	1	0-3	2.2	5
180	8033	700479-S-5-1-DM-1	62	1	0-2	0.0	5
181	8261	EB 62-2-4-S-4-2-DM-1	64	1	0-3	0.0	5
182	8003	J-1-S-2-1-DM-1*	62	1	0-3	0.0	5
183	8061	SC-2(M)2-12-S-2-1-DM-1	56	1	0-2	3.0	5
184	8485	EB 237-2-S-5-1-DM-1	66	1	0-2	0.0	5
185	8508	EB 188-2-3-S-3-1-DM-1	70	1	0-5	0.0	5
186	8114	WC FS 88-S-5-2-DM-1	56	1	0-4	0.0	4
187	8203	700713xSC-2(M)3-7-4-2-S-3-1-DM-1	57	1	0-2	25.8	5
188	8024	J 2157-S-1-2-DM-1	51	1	0-4	26.2	5
189	8053	SC-1(S4)27-2-S-2-2-DM-1	56	1	0-3	0.0	5
190	8307	EB 116-1-1-S-3-1-DM-1	64	1	0-3	4.1	5
191	8159	FS 34-S-1-1-DM-1	64	1	0-5	0.0	4
192	8030	700479-S-3-2-DM-1	54	1	0-2	0.0	5
193	8396	EB 148-1-S-2-2-DM-1	69	1	0-5	0.0	5
194	8076	ND 2282-79-1-S-1-1-DM-1*	62	1	0-3	0.0	4
195	8434	EBS 192-1-2-S-2-1-DM-1	71	1	0-5	0.0	5
196	8006	J 703-1-S-2-1-DM-1	49	1	0-5	0.0	5
197	8193	WC FS 346-S-6-1-DM-1	70	1	0-3	1.4	5
198	8454	EBS 218-1-S-3-2-DM-1	64	1	0-5	1.4	5
199	8365	EB 137-2-S-3-2-DM-1	58	1	0-5	0.0	5
200	8052	SC-1(S4)27-2-S-2-1-DM-1	63	1	0-3	0.0	5
201	8048	SC-1(S4)6-1-S-2-1-DM-1	54	1	0-3	0.9	5
202	8457	EBS 218-1-S-5-3-DM-1	56	1	0-5	0.0	5
203	8495	3/4 Souma 175-S-1-1-DM-1	62	1	0-2	0.0	5
204	8523	E-131-S-1-DM-1	69	1	0-5	0.0	5
205	8291	EBS 87-2-2-S-1-2-DM-1	64	1	0-5	2.1	5
206	8009	J 797-1-S-4-2-DM-1	62	1	0-7	7.3	5
207	8288	EB 80-1-2-S-3-2-DM-1*	59	1	0-2	0.0	5
208	8499	3/4 ExB 68-S-4-1-DM-1*	62	1	0-5	5.8	5
209	8065	SC-2(M)2-12-S-4-2-DM-1	69	1	0-3	0.0	5
210	8163	GAM 75 Bulk-S-1-1-DM-1	56	1	0-5	0.0	5

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Entry No.	Plot # K 1979	Pedigree	TF	Smut sev. (%)		Dit ^b / inc. (%)	Rust ^c score
				Mean ^a	Range		
211	8464	EB 229-2-S-2-1-DM-1	67	1	0-3	0.0	5
212	8207	IP 2789-S-2-1-DM-1*	57	1	0-3	15.3	5
213	8522	E-125-S-1-DM-1	69	1	0-5	1.6	5
214	8504	EB 169-2-S-3-1-DM-1*	63	1	0-5	0.0	5
215	8097	ND 2282-79-1-S-9-3-DM-1*	56	1	0-3	1.9	5
216	8526	E-145-S-1-DM-1	71	1	0-5	0.0	5
217	8001	J-1-S-1-1-DM-1*	51	1	0-6	0.0	5
218	8042	IP 2652-S-1-2-DM-1	62	1	0-5	0.0	5
219	8440	EB 209-1-6-S-3-2-DM-1	62	1	0-5	4.4	5
220	8479	EB 237-2-S-1-4-DM-1	65	1	0-5	1.6	4
221	8463	EB 218-3-2-S-4-2-DM-1	58	1	0-10	0.0	5
222	8334	EBS 119-2-1-S-2-2-DM-1	67	1	0-3	0.0	5
223	8512	E-5-S-1-DM-1	68	1	0-5	0.0	4
224	8078	ND 2282-79-1-S-2-1-DM-1	64	1	0-5	0.0	5
225	8046	SC-1(S4)6-1-S-1-2-DM-1	62	1	1-1	0.0	5
226	8507	MC FS 171-S-2-2-DM-1	59	1	0-5	0.0	5
227	8251	EB 59-1-3-S-2-2-DM-1*	59	1	0-10	1.5	3
228	8417	EB 170-2-S-1-3-DM-1	64	1	0-10	0.0	4
229	8109	WC FS 82-S-3-2-DM-1	56	1	0-10	0.0	5
230	8315	EB 117-2-1-S-1-1-DM-1*	62	1	0-5	0.0	5
231	8442	EB 209-1-6-S-4-2-DM-1	65	1	0-3	2.2	5
232	8456	EBS 218-1-S-5-2-DM-1	64	1	0-5	0.0	5
233	8231	EB 24-1-S-2-2-DM-1*	62	1	0-10	6.0	5
234	8476	EB 237-2-S-1-1-DM-1*	67	1	0-5	1.7	4
235	8016	J 2045-S-2-1-DM-1*	63	1	0-10	1.4	4
236	8474	EB 237-1-S-1-1-DM-1	64	1	0-10	8.4	5
237	8528	E-270-S-1-DM-1	56	1	0-5	0.0	5
238	8153	SSC FS 137-S-1-1-DM-1	56	1	0-10	3.2	5
239	8211	NEP 588-5690-S-5-1-DM-1	62	1	0-5	0.0	5
240	8320	EB 117-2-1-S-3-2-DM-1	62	1	0-5	0.8	5
241	8449	EB 218-1-S-1-1-DM-1*	56	1	0-5	0.0	5
242	8301	EB 112-1-S-5-1-DM-1*	54	1	0-5	0.0	4
243	8145	LC Bulk-S-1-1-DM-1*	54	1	0-10	1.9	5
244	8282	EB 80-1-1-S-3-2-DM-1*	54	1	0-10	14.6	5
245	8020	J 2226-S-1-2-DM-1	62	1	0-5	1.8	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^b /inc. (%)	Rust ^c /score
				Mean ^a	Range		
246	8197	LC FS 133-S-1-1-DM-1*	62	1	0-5	6.0	5
247	8486	EB 237-2-S-5-2-DM-1*	54	1	0-10	2.9	5
248	8310	EB 116-1-1-S-4-2-DM-1	64	1	0-5	0.0	5
249	8339	EBS 120-2-S-1-1-DM-1	64	1	0-6	0.0	5
250	8249	EB 59-1-3-S-1-1-DM-1	52	1	0-10	7.7	5
251	8118	WC FS 136-S-1-2-DM-1	56	1	0-5	0.0	2
252	8206	700713xSC-2(M)3-7-4-2-S-4-2-DM-1	64	1	0-0	4.4	5
253	8087	ND 2282-79-1-S-5-4-DM-1	61	1	0-10	0.0	5
254	8532	SDN 617-S-1-DM-1	71	1	0-10	0.0	5
255	8386	EB 146-1-1-S-1-2-DM-1	69	1	0-10	0.0	5
256	8057	SC-1(S4)27-2-S-4-1-DM-1	62	1	0-10	0.0	4
257	8470	EB 229-4-1-S-6-1-DM-1	56	1	0-5	0.0	5
258	8224	EB 18-3-1-S-1-1-DM-1	67	1	0-10	3.9	4
259	8219	EB 7-2-3-S-1-DM-1	64	1	0-5	0.0	5
260	8139	WC FS 232-S-1-2-DM-1	69	2	0-10	0.0	5
261	8525	E-137-S-1-DM-1	70	2	0-10	0.0	5
262	8304	EB 115-1-3-S-4-1-DM-1	64	2	0-5	0.0	5
263	8066	SC-2(M)2-12-S-4-1-DM-1	67	2	0-15	0.0	5
264	8502	LC-C x '75-S-1-1-DM-1	69	2	0-10	3.6	2
265	8280	EBS 74-5-2-S-4-2-DM-1*	54	2	0-10	1.9	5
266	8213	NEP 588-5690-S-8-1-DM-1	69	2	0-10	0.0	3
267	8262	EB 62-2-4-S-5-1-DM-1*	60	2	0-10	0.0	2
268	8472	EB 229-4-1-S-7-2-DM-1	62	2	0-10	8.5	5
269	8049	SC-1(S4)6-1-S-2-2-DM-1	54	2	0-6	0.0	5
270	8005	J 703-1-S-1-2-DM-1*	64	2	0-12	1.7	5
271	8484	EB 237-2-S-4-2-DM-1	68	2	0-15	0.0	5
272	8316	EB 117-2-1-S-1-2-DM-1	64	2	0-5	0.0	5
273	8022	J 2226-S-4-2-DM-1	67	2	0-15	0.0	5
274	8514	E-10-S-2-DM-1	70	2	0-10	0.0	5
275	8154	SSC FS 137-S-1-2-DM-1	64	2	0-5	0.0	5
276	8116	WC FS 109-S-1-2-DM-1	64	2	0-10	1.4	4
277	8050	SC-1(S4)22-4-S-1-1-DM-1*	56	2	0-10	0.0	5
278	8379	EB 137-2-S-8-2-DM-1	64	2	0-10	1.6	5
279	8371	EB 137-2-S-5-4-DM-1	62	2	0-15	1.5	5
280	8149	MC FS 171-S-1-1-DM-1	58	2	0-10	0.0	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^b / inc. (%)	Rust ^c / score
				Mean ^a	Range		
281	8091	ND 2282-79-1-S-7-2-DM-1	62	2	0-7	0.0	5
282	8121	WC FS 142-S-2-2-DM-1	62	2	0-15	0.0	5
283	8267	EB 66-1-S-3-2-DM-1*	67	2	0-15	0.0	2
284	8395	EB 148-1-S-2-1-DM-1*	60	2	0-10	0.0	5
285	8332	EBS 119-2-1-S-1-2-DM-1	63	2	0-20	0.0	4
286	8254	EBS 59-3-1-S-1-2-DM-1	64	2	0-20	0.0	5
287	8115	WC FS 109-S-1-1-DM-1	63	2	0-10	0.0	5
288	8413	EB 170-1-2-S-1-1-DM-1	67	2	0-20	0.8	3
289	8132	WC FS 174-S-1-1-DM-1	61	2	0-6	0.0	5
290	8086	ND 2282-79-1-S-5-3-DM-1	61	2	0-10	0.0	5
291	8317	EB 117-2-1-S-2-1-DM-1	63	2	0-10	1.6	5
292	8047	SC-1(S4)6-1-S-1-3-DM-1	61	2	0-7	0.0	5
293	8483	EB 237-2-S-4-1-DM-1	68	2	0-20	0.0	5
294	8041	IP . 2652-S-1-1-DM-1	62	2	0-10	6.4	5
295	8094	ND 2282-79-1-S-8-3-DM-1*	56	2	0-10	2.6	5
296	8250	EB 59-1-3-S-2-1-DM-1	61	2	0-10	0.0	5
297	8531	SDN 503-S-1-DM-1	58	2	0-8	0.0	5
298	8355	EB 137-1-2-S-1-1-DM-1*	64	2	0-10	0.0	5
299	8229	EB 18-3-4-S-2-1-DM-1*	54	2	0-20	0.0	5
300	8351	EB 137-1-1-S-4-1-DM-1	62	2	0-11	2.9	5
301	8480	EB 237-2-S-2-1-DM-1	67	2	0-15	0.0	5
302	8292	EB 106-2-1-S-1-1-DM-1	59	2	0-20	15.2	5
303	8012	J 1974-S-2-2-DM-1	64	2	0-7	2.7	5
304	8297	EB 112-1-S-1-2-DM-1	58	2	0-6	0.0	5
305	8141	LC FS 24-S-1-2-DM-1	64	2	0-20	2.9	5
306	8028	700479-S-2-2-DM-1	60	2	0-10	0.0	5
307	8306	EB 116-1-1-S-2-1-DM-1*	61	2	0-10	1.4	5
308	8104	UBI 7571-S-2-2-DM-1	54	2	0-10	3.0	5
309	8043	NEP ACC 10-588-5691-S-1-1-DM-1	63	2	0-13	3.3	5
310	8271	EB 68-2-S-1-2-DM-1*	64	2	0-20	0.0	5
311	8494	EB 239-1-1-S-2-3-DM-1	60	2	0-20	0.0	5
312	8313	EB 116-1-1-S-6-1-DM-1	59	2	0-10	0.0	5
313	8119	WC FS 142-S-1-1-DM-1*	64	2	0-15	2.9	5
314	8330	EB 117-4-3-S-1-1-DM-1*	57	2	0-20	0.0	4
315	8529	SDN 347-1-S-1-DM-1	70	2	0-10	12.7	4

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^{b/} inc. (%)	Rust ^{c/} score
				Mean ^{a/}	Range		
316	8195	WC FS 346-S-7-1-DM-1	62	2	0-20	9.5	5
317	8257	EBS 59-3-1-S-3-1-DM-1	63	2	0-20	0.0	5
318	8013	J 1999-S-3-1-DM-1	62	2	0-20	2.6	5
319	8385	EB 146-1-1-S-1-1-DM-1	69	2	0-25	0.8	5
320	8056	SC-1(S4)27-2-S-3-2-DM-1	62	2	0-9	1.5	4
321	8194	WC FS 346-S-7-1-DM-1	56	2	0-20	9.5	5
322	8173	Serere 2A-4-S-2-1-DM-1	63	2	0-15	0.0	5
323	8096	ND 2282-79-1-S-9-2-DM-1	62	3	0-10	0.0	5
324	8314	EB 116-1-1-S-6-2-DM-1*	61	3	0-20	0.0	5
325	8321	EB 117-2-1-S-4-1-DM-1	59	3	0-10	1.6	4
326	8471	EB 229-4-1-S-7-1-DM-1	64	3	0-8	1.5	5
327	8533	SDN 617-S-2-DM-1	61	3	0-10	1.7	5
328	8220	EB 7-2-3-S-2-DM-1*	64	3	0-10	1.3	5
329	8035	700583-S-1-1-DM-1	54	3	0-10	0.0	5
330	8063	SC-2(M)2-12-S-3-1-DM-1	56	3	0-10	0.0	5
331	8290	EB 80-1-2-S-6-2-DM-1	59	3	0-15	0.9	5
332	8399	EB 148-1-S-3-2-DM-1	63	3	0-15	0.0	5
333	8095	ND 2282-79-1-S-9-1-DM-1	63	3	0-13	5.4	5
334	8359	EB 137-1-2-S-4-2-DM-1	67	3	0-11	0.0	5
335	8131	WC FS 166-S-3-1-DM-1	56	3	0-5	0.0	5
336	8295	EB 106-2-2-S-2-1-DM-1*	59	3	0-20	0.0	5
337	8133	WC FS 178-S-1-1-DM-1	61	3	0-20	0.0	5
338	8015	J 2018-2-S-1-2-DM-1	69	3	0-13	0.0	4
339	8367	EB 137-2-S-4-2-DM-1	63	3	0-20	7.1	5
340	8331	EBS 119-2-1-S-1-1-DM-1*	57	3	0-10	0.0	5
341	8341	EB 132-2-S-4-2-DM-1	62	3	0-15	0.0	5
342	8369	EB 137-2-S-5-2-DM-1*	56	3	0-25	3.5	4
343	8088	ND 2282-79-1-S-6-1-DM-1*	56	3	0-25	0.0	5
344	8227	EB 18-3-4-S-1-1-DM-1	49	3	0-20	3.5	5
345	8243	EB 54-1-1-S-7-1-DM-1*	63	3	0-20	0.0	5
346	8426	EB 170-2-S-6-3-DM-1	56	3	0-25	0.0	5
347	8517	E-33-S-1-DM-1	67	3	0-15	0.0	4
348	8080	ND 2282-79-1-S-3-1-DM-1	60	3	0-13	0.0	4
349	8421	EB 170-2-S-5-1-DM-1	67	3	0-12	0.8	5
350	8079	ND 2282-79-1-S-2-2-DM-1	69	3	0-20	0.0	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^b / inc. (%)	Rust ^c / score
				Mean ^a	Range		
351	8451	EBS 218-1-S-2-1-DM-1	63	3	0-13	0.0	5
352	8312	EB 116-1-1-S-5-2-DM-1	64	3	0-20	2.3	5
353	8397	EB 148-1-S-2-3-DM-1	62	3	0-15	3.2	5
354	8407	EB 170-1-1-S-1-1-DM-1	64	4	0-25	0.0	5
355	8181	NW 1-10-1-S-1-1-DM-1	70	4	0-15	3.0	5
356	8007	J 703-1-S-2-2-DM-1*	63	4	0-17	0.0	5
357	8500	3/4 ExB 219-S-1-1-DM-1	63	4	0-20	0.0	5
358	8278	EBS 74-5-2-S-1-2-DM-1	59	4	0-15	3.1	5
359	8102	UBI 7113-2-S-4-1-DM-1	49	4	0-10	7.2	5
360	8209	NEP 588-5690-S-3-1-DM-1	67	4	0-25	4.2	5
361	8414	EB 170-1-2-S-2-1-DM-1	67	4	0-25	0.0	5
362	8225	EB 18-3-1-S-2-2-DM-1	60	4	0-15	0.0	5
363	8107	WC FS 82-S-1-1-DM-1*	56	4	0-15	0.0	5
364	8018	J2222-S-1-2-DM-1	66	4	0-23	2.9	5
365	8075	ExBouchi 700638-1-3-S-8-2-DM-1	66	4	0-40	0.0	5
366	8308	EB 116-1-1-S-3-2-DM-1*	58	4	0-25	0.0	5
367	8503	LC-C x '75-S-1-2-DM-1	64	4	0-15	0.0	5
368	8204	700713 x SC-2(M)-3-7-4-2-S-3-2-DM-1	54	4	0-20	20.5	5
369	8521	E-68-S-1-DM-1	66	4	0-15	0.0	5
370	8298	EB 112-1-S-2-1-DM-1	64	4	0-20	0.0	5
371	8051	SC-1(S4)22-4-S-1-2-DM-1	67	4	0-20	1.4	5
372	8226	EB 18-3-1-S-3-1-DM-1	63	4	0-20	0.0	5
373	8232	EB 24-1-S-5-1-DM-1	62	4	0-30	0.0	5
374	8344	EB 132-2-S-6-1-DM-1	70	4	0-25	1.5	5
375	8381	EB 142-1-1-S-2-1-DM-1	70	4	0-15	0.0	5
376	8392	EB 147-1-3-S-2-3-DM-1	63	4	0-25	0.0	5
377	8299	EB 112-1-S-2-2-DM-1*	64	4	0-40	0.0	5
378	8067	SC-2(M)21-10-S-1-1-DM-1	66	4	0-20	0.0	5
379	8044	NEP ACC 10-588-5691-S-3-1-DM-1	70	4	0-30	0.0	4
380	8222	EB 17-1-S-1-2-DM-1	64	4	0-20	56.7	4
381	8085	ND 2282-79-1-S-5-2-DM-1	54	4	0-20	0.0	5
382	8293	EB 106-2-2-S-1-1-DM-1	52	4	0-25	0.0	5
383	8210	NEP 588-5690-S-3-2-DM-1	62	5	0-15	1.2	5
384	8090	ND 2282-79-1-S-7-1-DM-1*	62	5	0-20	0.0	5
385	8029	700479-S-3-1-DM-1*	64	5	0-30	0.0	5

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Entry No.	Plot # K 1979	Pedigree	TF	Mean ^{a/}	Range	DF- inc. (%)	rust score
386	8264	EB 66-1-S-1-1-DM-1*	59	5	0-25	1.5	3
387	8247	EB 59-1-1-S-1-1-DM-1	56	5	0-30	0.0	5
388	8408	EB 170-1-1-S-1-2-DM-1	64	5	0-25	0.0	5
389	8144	LC FS 68-S-3-1-DM-1	54	5	0-15	2.7	5
390	8196	WC FS 346-S-8-2-DM-1*	62	5	0-25	13.0	5
391	8362	EB 137-2-S-2-1-DM-1	69	5	0-25	0.0	5
392	8372	EB 137-2-S-6-1-DM-1*	62	5	0-25	0.0	5
393	8070	ExBouchi 700638-1-3-S-3-1-DM-1*	62	5	0-50	0.0	5
394	8185	WC FS 308-S-3-1-DM-1	58	5	0-25	4.6	5
395	8178	700544 x 700760-2-S-1-2-DM-1	64	5	0-16	1.5	4
396	8380	EB 142-1-1-S-1-1-DM-1	64	5	0-25	5.5	5
397	8323	EB 117-2-1-S-5-2-DM-1*	58	5	0-35	1.6	5
398	8444	EB 209-1-6-S-5-1-DM-1	62	5	0-25	0.0	5
399	8433	EBS 192-1-2-S-1-1-DM-1	70	5	0-50	0.0	3
400	8189	WC FS 346-S-2-2-DM-1*	60	5	0-30	0.0	5
401	8415	EB 170-1-2-S-2-2-DM-1	56	5	0-25	0.0	5
402	8010	J 1537-S-2-1-DM-1	51	5	1-15	4.1	5
403	8148	LC FS 226-S-2-2-DM-1	64	5	0-25	0.0	5
404	8036	700583-S-1-2-DM-1	63	5	0-20	10.2	5
405	8034	700479-S-6-1-DM-1*	64	5	0-34	0.0	5
406	8333	EBS 119-2-1-S-2-1-DM-1*	61	5	0-35	0.0	5
407	8345	EB 132-2-S-6-2-DM-1	60	5	0-50	1.8	5
408	8186	WC FS 346-S-1-1-DM-1	60	5	0-50	1.5	5
409	8246	EB 58-3-S-2-2-DM-1*	61	6	0-50	1.6	5
410	8410	EB 170-1-1-S-2-2-DM-1	54	6	0-25	0.0	5
411	8515	E-17-S-1-DM-1	71	6	0-25	0.0	5
412	8279	EDS 74-5-2-S-5-4-1-DM-1*	58	6	0-30	3.3	5
413	8073	ExBouchi 700638-1-3-S-7-2-DM-1	54	6	1-20	16.7	5
414	8071	ExBouchi 700638-1-3-S-3-2-DM-1	70	6	0-10	13.5	5
415	8468	EB 229-4-1-S-5-1-DM-1	56	6	0-25	0.0	5
416	8265	EB 66-1-S-2-1-DM-1	56	6	0-14	0.0	5
417	8425	EB 170-2-S-6-2-DM-1	67	6	0-25	0.0	5
418	8400	EB 148-1-S-3-3-DM-1	64	6	0-25	1.6	5
419	8002	J-1-S-1-2-DM-1	54	6	0-40	9.1	5
420	8354	EB 137-1-1-S-7-1-DM-1	61	6	0-50	0.0	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^{b/} inc. (%)	Rust ^{c/} score
				Mean ^{a/}	Range		
421	8068	ExBouchi 700638-1-3-S-1-1-DM-1	56	6	0-20	0.0	5
422	8126	WC FS 151-S-1-2-DM-1*	62	6	0-40	0.0	5
423	8082	ND 2282-79-1-S-3-3-DM-1*	53	6	0-27	0.0	5
424	8192	WC FS 346-S-5-1-DM-1	56	6	0-60	0.0	5
425	8520	E-64-S-1-DM-1	65	6	0-25	5.1	5
426	8215	NEP 588-5690-S-9-1-DM-1	62	6	0-20	0.0	5
427	8017	J222-S-1-DM-1	68	6	0-40	0.0	5
428	8175	Serere 2A-4-S-3-2-DM-1	62	6	0-40	0.0	5
429	8072	ExBouchi 700638-1-3-S-7-1-DM-1	54	7	0-21	12.0	5
430	8184	WC FS 303-S-2-3-DM-1*	58	7	0-15	3.1	5
431	8208	NEP 588-5690-S-2-1-DM-1	62	7	0-50	5.2	5
432	8205	700713xSC-2(M)3-7-4-2-S-4-1-DM-1	59	7	0-30	2.9	5
433	8465	EB 229-2-S-2-2-DM-1	56	7	0-65	0.0	5
434	8008	J 797-1-S-4-1-DM-1*	63	7	0-29	2.1	5
435	8111	WC FS 88-S-4-1-DM-1	63	7	0-25	11.5	5
436	8346	EB 132-2-S-7-1-DM-1*	59	7	0-25	1.9	5
437	8200	700713xSC-2(M)3-7-4-2-S-1-1-DM-1*	62	7	0-25	25.7	5
438	8437	EB 209-1-6-S-2-1-DM-1	66	7	0-30	2.5	5
439	8103	UBI 7517-S-2-1-DM-1	60	7	0-30	3.7	5
440	8393	EB 143-1-S-1-1-DM-1	66	7	0-35	0.0	5
441	8253	EBS 59-3-1-S-1-1-DM-1*	62	7	0-50	0.0	5
442	8242	EB 54-1-1-S-5-1-1-DM-1	64	7	2-15	0.0	5
443	8108	WC FS 82-S-3-1-DM-1	54	7	0-20	0.0	5
444	8391	EB 147-1-3-S-2-2-DM-1	54	8	0-25	0.0	5
445	8032	700479-S-4-2-DM-1	54	8	0-40	2.1	5
446	8221	EB 15-1-S-3-1-DM-1	66	8	0-50	0.0	4
447	8100	700481-2-1-S-1-1-DM-1	54	8	0-50	0.0	5
448	8450	EB 218-1-S-2-2-DM-1	62	8	0-50	0.0	5
449	8513	E-10-S-1-DM-1	71	8	0-25	0.0	4
450	8031	700479-S-4-1-DM-1	56	9	0-30	1.4	5
451	8255	EBS 59-3-1-S-2-1-DM-1	61	9	0-50	0.0	5
452	8106	WC FS 42-S-1-2-DM-1*	54	9	0-30	1.2	5
453	8268	EB 66-1-S-4-1-DM-1	62	9	0-35	0.0	3
454	8447	EB 209-1-6-S-6-1-DM-1	71	9	0-25	2.3	5
455	8358	EB 137-1-2-S-4-1-DM-1	61	9	0-50	0.0	5

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Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^{b/} inc. (%)	Rust ^{c/} score
				Mean ^{a/}	Range		
456	8190	WC FS 346-S-31-1-DM-1	56	10	0-50	0.0	5
457	3368	EB 137-2-S-5-1-DM-1	67	10	0-100	0.0	5
458	2388	EBS 146-1-1-S-2-1-DM-1	60	10	0-50	0.0	5
459	8214	NEP 588-5690-S-3-2-DM-1	70	10	0-85	0.0	4
460	8364	EB 137-2-S-3-1-DM-1	60	11	0-60	2.0	5
461	8439	EB 209-1-6-S-3-1-DM-1	60	11	0-75	1.6	5
462	8311	EB 116-1-1-S-5-1-DM-1	59	11	1-50	0.0	5
463	8201	700713xSC-2(M)3-7-4-2-S-2-1-DM-1*	56	11	0-80	4.6	5
464	8360	EB 137-1-2-S-5-1-DM-1	63	11	0-100	5.1	5
465	8455	EBS 218-1-S-5-1-DM-1	54	11	0-60	4.6	5
466	8405	EBS 167-2-S-1-1-DM-1	64	11	0-60	0.0	5
467	8325	EB 117-4-3-S-1-2-DM-1	57	11	0-40	0.0	5
468	8240	EB 54-1-1-S-4-1-DM-1	72	11	0-95	0.0	5
469	8366	EB 137-2-S-4-1-DM-1	56	11	0-50	1.3	5
470	8497	3/4 ExB 45-S-1-1-DM-1	56	12	0-40	1.8	5
471	8112	WC FS 88-S-4-2-DM-1	54	12	0-80	4.4	5
472	8045	SC-1(S4)6-1-S-1-1-DM-1	51	12	0-50	0.0	5
473	8302	EB 112-1-S-5-2-DM-1	59	12	0-50	1.6	5
474	8370	EB 137-2-S-5-3-DM-1*	59	12	0-100	0.0	4
475	8140	LC FS 24-S-1-1-DM-1	69	12	0-25	0.0	5
476	8191	WC FS 346-S-4-1-DM-1	62	12	0-80	0.0	5
477	8389	EB 147-1-3-S-1-1-DM-1	54	13	0-60	1.1	5
478	8212	NEP 588-5690-S-7-1-DM-1	64	13	0-70	4.9	5
479	8274	EBS 70-1-S-4-2-DM-1	62	13	0-80	9.1	5
480	8493	EB 239-1-1-S-2-2-DM-1	56	13	0-35	0.0	5
481	8234	EB 44-1-S-1-1-DM-1	62	14	0-85	6.2	5
482	8459	EB 218-3-2-S-2-2-DM-1	58	14	0-100	0.0	5
483	8285	EB 80-1-1-S-5-2-DM-1	62	14	0-85	5.5	5
484	8419	EB 170-2-S-1-5-DM-1	56	14	0-70	0.0	5
485	8040	IP No. 2253-S-6-1-DM-1	62	14	0-45	0.0	5
486	8027	700130-S-1-2-DM-1	58	14	0-60	0.0	5
487	8424	EB 170-2-S-6-1-DM-1*	64	14	0-50	0.0	5
488	8289	EB 80-1-2-S-6-1-DM-1	59	15	0-40	0.0	5
489	8021	J 2226-S-4-1-DM-1	51	15	4-40	0.0	5
490	8198	LC FS 252-S-1-1-DM-1*	56	15	0-50	19.1	5

Contd....

Entry No.	Plot # K 1979	Pedigree	DTF	Smut sev. (%)		DM ^{b/} inc. (%)	Rust ^{c/} score
				Mean ^{a/}	Range		
491	8129	WC FS 166-S-2-1-DM-1	54	15	0-45	0.0	5
492	8275	EBS 74-5-1-S-4-1-DM-1*	62	16	0-50	0.0	5
493	8394	EB 148-1-S-1-2-DM-1	67	16	0-60	0.0	5
494	8406	EBS 167-2-S-1-2-DM-1	64	16	0-75	2.2	5
495	8110	WC FS 88-S-1-1-DM-1	50	16	1-70	1.3	5
496	8105	WC FS 42-S-1-1-DM-1*	54	17	0-60	14.5	5
497	8305	EB 116-1-1-S-1-1-DM-1	62	17	0-70	0.0	5
498	8319	EB 117-2-1-S-3-1-DM-1	58	17	0-80	7.1	5
499	8378	EB 137-2-S-7-3-DM-1	62	18	0-50	0.0	5
500	8228	EB 18-3-4-S-1-2-DM-1	51	19	0-85	1.4	5
501	8223	EB 17-1-S-1-1-DM-1	61	19	0-70	60.3	5
502	3263	EB 62-2-4-S-5-2-DM-1	57	19	0-85	0.0	5
503	8283	EB 30-1-1-S-4-1-DM-1	57	19	1-65	0.0	5
504	8435	EB 196-2-2-S-1-1-DM-1	57	20	0-100	0.0	5
505	8077	ND 2282-79-1-S-1-2-DM-1	67	20	0-75	0.0	4
506	8337	EBS 119-2-1-S-4-1-DM-1	64	20	0-50	0.0	5
507	8398	EB 148-1-S-3-1-DM-1	67	20	0-75	0.0	5
508	8429	EB 175-1-1-S-1-3-DM-1	64	21	0-50	0.0	4
509	8460	EB 218-3-2-S-3-1-DM-1	62	22	0-75	1.6	5
510	8248	EB 59-1-1-S-2-1-DM-1	51	22	5-85	0.0	5
511	8352	EB 137-1-1-S-6-1-DM-1*	60	22	0-75	0.0	5
512	3130	WC FS 166-S-2-2-DM-1	62	22	0-80	1.4	5
513	8244	EB 54-1-1-S-7-2-DM-1	64	22	0-80	0.0	5
514	8390	EB 147-1-3-S-2-1-DM-1	54	23	0-65	4.9	5
515	8281	EB 80-1-1-S-3-1-DM-1	60	23	0-100	5.1	5
516	8509	SAR 90-S-1-DM-1	54	23	1-80	22.3	5
517	8452	EBS 218-1-S-2-2-DM-1	62	24	0-100	0.0	5
518	8064	SC-2(M)2-12-S-3-2-DM-1	56	28	10-50	0.0	5
519	8322	EB 117-2-1-S-5-1-DM-1	60	28	0-70	0.0	5
520	8277	EBS 74-5-2-S-1-1-DM-1	54	38	0-100	2.7	5
521	8199	70-1x700400-11-S-1-1-DM-1	62	45	10-80	3.2	5
522	8436	EB 196-2-2-S-1-2-DM-1	57	50	0-100	3.3	5
523	8256	EBS 59-3-1-S-2-2-DM-1	57	51	0-100	4.5	5
524	8382	EB 142-1-1-S-2-2-DM-1	54	54	5-100	0.0	5
525	3252	EB 50-2-2-S-3-1-DM-1	58	74	3-100	1.5	3
		BJ-104 Check	41	53	10-80	40.0	4
		ICH-105 Check	43	32	10-80	2.0	3

a/ Mean of 10 inoculated-bagged heads

b/ Screened during the 1978-79 post rainy season in the downy mildew nursery at ICRISAT Center.

c/ Based on 1-5 scale, scored during the 1978-79 post rainy season at ICRISAT Center.

* Smut free heads selected for further testing.

Appendix XXX

Smut reactions and days to 75 percent flowering (DTF) of 211 entry Advanced smut screening-C during the 1979 rainy season at Hissar.

Entry No.	Plot K 79	Pedigree	DTF	Smut severity(%)	
				Mean ^a	Range
1	10064	WC FS 88-S-5-5*	62	0	0-0
2	10129	EB 80-1-1-S-3-4	64	0	0-0
3	10193	SDN 347-1-S-3	69	0	0-0
4	10131	EB 106-2-2-S-2-2	64	0	0-0
5	10132	EB 106-2-2-S-2-3	69	0	0-0
6	10006	J 1974-S-2-3*	56	0	0-0
7	10197	SDN 617-S-4	67	0	0-0
8	10166	E-5-S-2	66	0	0-0
9	10167	E-5-S-3	68	0	0-0
10	10073	MC FS 179-S-1-4*	60	0	0-0
11	10011	J 2222-S-1-3*	63	0	0-0
12	10106	NEP 588-5690-S-8-4*	60	0	0-0
13	10203	Nigerian composite (C ₁)-S-1	68	0	0-0
14	10141	EB 116-1-1-S-6-3	66	0	0-0
15	10142	EB 116-1-1-S-6-4	64	0	0-0
16	10143	EB 117-2-1-S-2-3*	65	0	0-0
17	10980	ICI 7516-S-2-4	62	0	0-0
18	10081	ICI 7516-S-2-5*	64	0	0-0
19	10082	ICI 7516-S-2-6*	63	0	0-0
20	10147	EB 132-2-S-4-3	69	0	0-0
21	10148	EB 132-2-S-4-4*	64	0	0-0
22	10149	EB 132-2-S-5-3	66	0	0-0
23	10165	SAR 466-S-2	64	0	0-0
24	10055	ND 2282-79-1-S-10-7*	68	0	0-0
25	10110	EB 17-1-S-1-3*	64	0	0-0
26	10026	SC-1(S ₄)22-4-S-1-5	60	0	0-0
27	10105	NEP 588-5690-S-8-3*	64	0	0-0
28	10155	EB 137-1-2-S-3-5	63	0	0-0
29	10029	SC-2(M)2-12-S-3-3*	64	0	0-0
30	10157	EB 137-1-2-S-4-4	68	0	0-0
31	10158	EB 137-1-2-S-4-5	69	0	0-0
32	10100	700713 x SC-2(M)3-7-4-2-S-4-3	67	0	0-0
33	10111	EB 18-3-1-S-1-2	64	0	0-0
34	10192	SDN 347-1-S-2	68	0	0-0
35	10113	EB 44-1-S-1-3	68	0	0-0

Entry No.	Plot K 79	Pedigree	DTF	Smut severity(%)	
				Mean ^a	Range
36	10099	700713 x SC-2(11)3-7-4-2-S-3-3*	59	0	0-0
37	19037	ND 2282-79-1-S-3-4*	67	0	0-0
38	10116	EB 59-1-1-S-2-2	67	0	0-0
39	10189	E-137-S-3	70	0	0-0
40	10104	NEP 588-5690-S-3-4	50	0	0-0
41	10120	EB 59-1-1-3-S-2-5	70	0	0-0
42	10205	Senegal 242-I-S-1	69	0	0-0
43	10107	NEP 588-5690-S-8-5*	62	0	0-0
44	10172	E-23-S-2	66	0	0-0
45	10083	ICI 7516-S-2-7*	64	0	0-0
46	10084	700544 x 700760-2-S-3-3*	68	0	0-0
47	10078	SDS FS 127-S-1-3*	64	0	0-0
48	10112	EB 18-3-1-S-1-3	64	0	0-0
49	10179	E-55-S-2	66	0	0-0
50	10118	EB 59-1-3-S-2-3	58	0	0-0
51	10188	E-137-S-2	69	0	0-0
52	10210	45-332-S-4	67	0	0-0
53	10122	EB 66-1-S-3-3*	67	0	0-0
54	10124	EBS 68-2-S-1-4	62	0	0-0
55	10108	EB 7-2-3-S-3*	60	0	0-0
56	10077	GAM 75 Bulk-S-1-3*	61	0	0-0
57	10109	EB 7-2-3-S-4*	60	0	0-0
58	10115	EB 58-3-S-1-3	64	0	0-0
59	10209	45-332-S-3	68	<1	0-1
60	10051	ND 2282-79-1-S-10-3	64	<1	0-1
61	10056	URI 7113-2-S-2-1*	58	<1	0-1
62	10002	J-1-S-2-3*	63	<1	0-1
63	10039	ND 2282-79-1-S-3-6*	59	<1	0-1
64	10038	ND 2282-79-1-S-3-5	64	<1	0-1
65	10019	SC-1(S ₄)6-1-S-1-4	56	<1	0-1
66	10211	P-185-S-1	70	<1	0-2
67	10004	J 703-1-S-1-4	61	<1	0-2
68	10054	ND 2282-79-1-S-10-6	63	<1	0-1
69	10050	ND 2282-79-1-S-9-6	64	<1	0-1
70	10043	ND 2282-79-1-S-5-8*	58	<1	0-1
71	10022	SC-1(S ₄)6-1-8-2-3	49	<1	0-1
72	10087	NW 1-10-1-S-1-3*	70	<1	0-1
73	10063	WC FS 88-S-5-4*	61	<1	0-2
74	10040	ND 2282-79-1-S-5-5	62	<1	0-2
75	10048	ND 2282-79-1-S-9-4	69	<1	0-1

Entry No.	Plot K 79	Pedigree	DTF	Smut severity(%)	
				Mean ^{a/}	Range
76	10071	MC FS 171-S-1-3*	54	<1	0-2
77	10035	ND 2282-79-1-S-2-4	69	<1	0-2
78	10085	700544 x 700760-2-S-3-4*	63	<1	0-2
79	10101	700713 x SC-2(M)3-7-4-2-S-4-4*	60	<1	0-2
80	10074	MC FS 179-S-1-5	61	<1	0-2
81	10169	E-10-S-4	62	<1	0-3
82	10086	700544 x 700760-2-S-3-5*	60	<1	0-2
83	10200	SDM 720-1-S-3	65	<1	0-5
84	10047	ND 2282-79-1-S-8-6*	68	<1	0-5
85	10017	700479-S-3-5	62	1	0-2
86	10119	EB 59-1-3-S-2-4	61	1	0-5
87	10027	SC-2(M)2-12-S-1-3	70	1	0-5
88	10034	ND 2282-79-1-S-2-3	64	1	0-5
89	10062	WC FS 88-S-5-3*	61	1	0-2
90	10052	ND 2282-79-1-S-10-4*	58	1	0-2
91	10016	700479-S-3-4	66	1	0-5
92	10061	WC FS 88-S-4-3	64	1	0-5
93	10053	ND 2282-79-1-S-10-5	63	1	0-5
94	10001	J-1-S-2-2	56	1	0-5
95	10151	EB 132-2-S-6-3	68	1	0-5
96	10161	EB 137-2-S-4-3	63	1	0-5
97	10150	EB 132-2-S-5-4	60	1	0-5
98	10042	ND 2282-79-1-S-5-7	63	1	0-10
99	10025	SC-1(S ₄)22-4-S-1-4*	62	1	0-5
100	10024	SC-1(S ₄)22-4-S-1-3	62	1	0-5
101	10089	WC FS 308-S-2-1	54	1	0-10
102	10021	SC-1(S ₄)6-1-S-1-6	56	1	0-5
103	10067	WC FS 151-S-2-4*	64	1	0-10
104	10152	EB 137-1-1-S-1-3	58	1	0-7
105	10008	J 1999-S-3-3	61	1	0-10
106	10123	EBS 68-2-S-1-3	69	1	0-10
107	10095	WC FS 346-S-5-3	64	1	0-5
108	10030	Ex Bouchi 700638-1-3-S-3-3	62	1	0-5
109	10075	SSC FS 252-S-2-3	74	1	0-10
110	10028	SC-2(M)2-12-S-2-3*	60	1	0-5
111	10154	EB 137-1-2-S-3-4	62	1	0-10
112	10204	Nigerian Composite (C ₁)-S-2	64	1	0-15
113	10136	EB 112-1-S-3-3*	64	1	0-10
114	10171	E-23-S-1	69	1	0-15
115	10041	ND 2282-79-1-S-5-6	59	1	0-10

Entry No.	Plot K 79	Pedigree	DTF	Smut severity (%)	
				Mean ^a	Range
116	10007	J 1974-S-2-4	62	1	0-10
117	10072	MC FS 179-S-1-3	62	1	0-10
118	10023	SC-1(S ₄)6-1-S-2-4	54	2	0-5
119	10144	EB 117-2-1-S-3-3*	63	2	0-10
120	10012	J 2226-S-1-3	56	2	0-10
121	10057	WC FS 82-S-3-3	59	2	0-5
122	10097	WC FS 346-S-3-3*	54	2	0-15
123	10184	E-125-S-2	64	2	0-10
124	10173	E-23-S-3	62	2	0-10
125	10032	ND 2282-79-1-S-1-3	63	2	0-10
126	10044	ND 2282-79-1-S-5-9*	59	2	0-10
127	10036	ND 2282-79-1-S-2-5	62	2	0-10
128	10196	SDM 617-S-3	66	2	0-15
129	10206	Senegal 242-I-S-2	67	2	0-15
130	10125	EBS 70-1-S-5-2	62	3	0-10
131	10162	EB 24-1-S-4-1	59	3	0-20
132	10070	WC FS 174-S-1-3	62	3	0-15
133	10003	J 703-1-S-1-3	62	3	0-20
134	10090	WC FS 308-S-2-2	54	3	0-20
135	10126	EBS 70-1-S-5-3	63	3	0-20
136	10208	45-332-S-2	64	3	0-10
137	10160	EB 137-2-S-2-4	64	3	0-15
138	10127	EB 74-5-2-S-4-3	64	3	0-15
139	10069	WC FS 174-S-1-2	67	3	0-25
140	10114	EB 58-3-S-1-2	60	3	0-15
141	10212	P-185-S-2	72	3	0-35
142	10058	WC FS 82-S-4-1	60	3	0-15
143	10187	E-131(S ₂ 1976R)S-5	64	4	0-25
144	10060	WC FS 151-S-2-3	57	4	0-15
145	10180	E-55-8-3	59	4	0-15
146	10015	700479-S-3-3	56	4	0-15
147	10098	WC FS 346-S-8-4*	57	4	0-15
148	10201	SDM 720-1-S-4	70	4	0-25
149	10065	WC FS 148-S-1-4	57	4	0-25
150	10009	J 2018-2-S-1-3	58	4	0-15
151	10013	700479-S-2-3	56	5	0-20
152	10010	J 2018-2-S-1-4	62	5	0-25
153	10176	E-33-S-2	59	5	0-25
154	10020	SC-1(S ₄)6-1-S-1-5	54	5	0-15
155	10128	EB 80-1-1-S-3-3	67	5	0-25

Entry No.	Plot K 79	Pedigree	DTF	Smut severity (%)	
				Mean ^{a/}	Range
156	10076	Ex Pr AWC x 1975-S-1-3	69	5	0-30
157	19214	P-185-S-4	69	5	0-50
153	19049	ND 2282-79-1-S-9-5	56	5	0-40
159	10933	ND 2282-79-1-S-1-4*	58	5	0-30
160	10178	E-41-S-2	69	5	0-50
161	10156	E3 137-1-2-S-4-3	63	6	0-35
162	10088	NW 1-10-1-S-1-4*	58	6	0-45
163	10191	E-270-S-2	66	6	0-35
164	10102	700713 x SC-2(7)3-7-4-S-4-5*	50	6	0-25
165	10164	SAR 99-S-2	57	6	0-35
166	10134	E3 112-1-S-2-4	62	6	0-50
167	10198	SDN 720-1-S-1	70	7	0-35
168	10103	NEP 588-5690-S-3-3	58	7	0-50
169	10018	NEP ACC 10-588-5691-S-3-2	68	7	0-35
170	10159	E3 137-2-S-2-3	63	7	0-60
171	10121	EBS 59-3-1-S-3-3	64	7	0-60
172	10175	E-31-S-3	62	7	0-35
173	10005	J 703-1-S-2-3	45	8	0-25
174	10202	World composite(C ₁)-S-1	67	8	0-25
175	10183	E-68-S-3	63	8	0-75
176	10137	ED 115-1-3-S-4-2*	62	8	0-55
177	10213	P-185-S-3	63	8	0-55
178	10194	SDN 503-S-2	65	8	0-75
179	10140	ED116-1-1-S-1-3	64	9	0-55
180	10174	E-31-S-2	68	9	0-40
181	10135	ED 112-1-S-3-2*	64	9	0-50
182	10146	ED 117-2-1-S-3*	58	10	0-75
183	10177	E-41-S-2	54	10	0-40
184	10145	ED 117-2-1-S-4-2	64	10	0-85
185	10168	E-10-S-3	65	10	0-100
186	10139	ER 116-1-1-S-1-2	64	11	0-75
187	10163	ED 24-1-S-4-2	59	11	0-60
188	10014	700479-S-2-4	54	11	0-65
189	10094	WC FS 346-S-5-2	58	11	0-100
190	10138	E3 115-1-3-S-4-3	67	11	0-85

Entry No.	Plot K 79	Pedigree	DTF	Smut severity(%)	
				Mean ^{a/}	Range
191	10133	EB 112-1-S-2-3	71	12	0-50
192	10190	E-145-S-2	64	13	0-50
193	10130	EB 30-1-2-S-6-3	62	13	0-70
194	10059	WC FS 82-S-4-2	57	14	0-75
195	10182	E-68-S-2	58	14	0-95
196	10045	ND 2282-79-1-S-8-4	59	14	0-50
197	10031	Ex Douchi 700638-1-3-S-3-4	62	15	0-60
198	10153	EB 137-1-2-S-3-3	59	15	0-35
199	10195	SDN 503-S-3	70	15	0-75
200	10093	WC FS 346-S-2-3*	54	15	0-75
201	10060	WC FS 82-S-4-3	57	16	0-90
202	10199	SDN 720-1-S-2	68	17	0-65
203	10096	WC FS 346-S-5-4	54	17	0-65
204	10117	EB 59-1-1-S-2-3	60	21	0-60
205	10092	WC FS 346-S-1-3*	56	21	0-85
206	10185	E-131(S ₂ 1976R)S-3	69	21	0-75
207	10186	E-131(S ₂ 1976R)S-4	63	22	0-50
208	10170	E-17-S-2	70	24	0-50
209	10091	WC FS 308-S-3-3	54	24	0-75
210	10181	E-64-S-2	68	25	0-65
211	10068	WC FS 166-S-2-3	58	27	5-60
	Others	P-10 from Senegal	65	0	0-0
		P-19 "	65	<1	0-1
		P-18	65	2	0-20
		BJ 104 (check)	45	32	10-80
		ICH 105 (check)	49	33	10-80

^{a/} Mean of 10 inoculated-bagged heads

* Smut free heads selected for further testing

Appendix XXXI

Smut reactions and days to 75 percent flowering (DTF) of 32 F₂ progenies (Low x Low Susc.) during the 1979 rainy season at Hissar.

Entry No.	Pedigree	DTF	Infection (%)	
			Mean ^{a/}	Range
1	SDS FS 135 x SSC FS 252	50	<1	0-1
2	IP 2253 x WC FS 139	58	1	0-5
3	SDS FS 40 x EB 137-1-1	54	1	0-5
4	EB 137-1-1 x WC FS 139	54	1	0-15
5	SDS FS 135 x EB 80-1-2	54	1	0-5
6	WC FS 139 x EB 80-1-2	54	1	0-5
7	EB 209-1-6 x SDS FS 135-1	60	2	0-15
8	SDS FS 40 x EB 117-2-1	61	2	0-10
9	EBS 137-2 x WC FS 139-1	58	2	0-10
10	EB 117-2-1 x SDS FS 135-2	58	2	0-10
11	SSC FS 252 x SDS FS 135-1	60	2	0-45
12	EBS 137-2 x SDS FS 135-2	58	3	0-25
13	(EBS 137-2 x WC FS 139)-3	58	3	0-25
14	EB 117-2-1 x SDS FS 135-1	62	3	0-25
15	(EBS 137-2 x WC FS 139)-2	54	3	0-25
16	EB 137-1-1 x SDS FS 135	54	3	0-50
17	EB 117-2-1 x WC FS 139	54	4	0-25
18	EB 117-2-1 x SDS FS 40-2	61	4	0-15
19	SDS FS 135 x EB 117-2-1	58	5	0-20
20	IP 2253 x SDS FS 40	54	5	0-30
21	WC FS 139 x SSC FS 252	58	6	0-50
22	SDS FS 40 x J 1623 x WC 6-3-1	49	6	0-30
23	EB 117-2-1 x SDS FS 40-1	56	7	0-35
24	EBS 137-2 x SDS FS 135-1	56	7	0-50
25	SSC FS 252 x WC FS 139-2	54	7	0-50
26	EB 80-1-2 x WC FS 139	59	9	1-40
27	EBS 137-2 x SDS FS 40-2	58	9	0-50
28	EB 137-1-1 x SDS FS 40	54	11	0-71
29	SSC FS 252 x SDS FS 40	54	11	0-40
30	SDS FS 40 x J 1623 x WC 6-3-2	54	16	0-95
31	SDS FS 40 x SSC FS 252	50	39	1-90
32	EB 80-1-2 x SDS FS 40	58	46	0-55
	BJ-104 (Check)	44	24	0-60
	ICH-105 (Check)	49	26	1-50

^{a/} Mean of 20 inoculated-bagged heads from 32 F₂ pop. 77 smut free heads selected.

Appendix XXXII

Smut reactions and days to 75 percent flowering (DTF) of 35 F_2 populations (low x low susceptible) during the 1979 rainy season at Hissar

Entry No.	Pedigree	DTF	Infection %	
			Mean ^a	Range
1	(J 1623 x WC 6-3) x EBS 137-2	60	0	0-0
2	EB 117-2-1 x EB 80-1-2	59	0	0-0
3	EBS 137-2 x EB 137-1-1	58	0	0-0
4	(J 1623 x WC 6-3) x SSC FS 252	50	0	0-0
5	EB 237-3-1 x SSC FS 252	61	0	0-0
6	(J 1623 x WC 6-3) x EB 137-1-1	54	0	0-0
7	EB 137-1-1 x (J 1623 x WC 6-3)	54	<1	0-1
8	EB 137-1-1 x SSC FS 252	59	<1	0-1
9	EB 137-1-1 x EB 132-2	65	<1	0-1
10	IP 2253 x EB 237-3-1	61	<1	0-1
11	EB 237-3-1 x (J 1623 x WC 6-3)	61	<1	0-1
12	SSC FS 252 x EB 132-2*	65	<1	0-1
13	(J 1623 x WC 6-3) x EB 209-1-6	61	<1	0-1
14	EB 80-1-2 x (J 1623 x WC 6-3)	54	<1	0-1
15	EB 80-1-2 x SSC FS 252	61	<1	0-1
16	EB 209-1-6 x EB 237-3-1	65	<1	0-1
17	EBS 137-2 x EB 209-1-6	59	<1	0-1
18	EBS 137-2 x (J 1623 x WC 6-3)	57	<1	0-1
19	EBS 137-2 x SSC FS 252	59	<1	0-1
20	SSC FS 252 x (J 1623 x WC 6-3)	54	<1	0-1
21	EB 237-3-1 x EB 80-1-2	65	<1	0-1
22	IP 2253 x (J 1623 x WC 6-3)	60	<1	0-2
23	EB 117-2-1 x SSC FS 252	57	<1	0-1
24	SSC FS 252 x EB 117-2-1	57	<1	0-1
25	EB 137-1-1 x EB 237-3-1	61	<1	0-2
26	(J 1623 x WC 6-3) x EB 237-3-1	61	<1	0-2
27	IP 2253 x EB 209-1-6	62	<1	0-2
28	EB 117-2-1 x EBS 137-2	55	<1	0-2
29	EB 209-1-6 x EBS 137-2	54	<1	0-1
30	EB 117-2-1 x EB 137-1-1	54	<1	0-2
31	EB 209-1-6 x EB 137-1-1	54	<1	0-3
32	SSC FS 252 x EB 80-1-2	60	<1	0-3
33	(J 1623 x WC 6-3) x EB 80-1-2	54	<1	0-3
34	EB 117-2-1 x (J 1623 x WC 6-3)	57	<1	0-2
35	EB 117-2-1 x IP 2253	63	<1	0-3

Entry No.	Pedigree	DTF	Infection %	
			Mean ^a /	Range
36	(J 1623 x WC 6-3) x EB 117-2-1	57	<1	0-5
37	EB 117-2-1 x EB 132-2	63	<1	0-8
38	(J 1623 x WC 6-3) x EB 132-2	60	1	0-3
39	(J 1623 x WC 6-3) x IP 2253	57	1	0-10
40	SSC FS 252 x EBS 137-2	57	1	0-5
41	EB 132-2 x SSC FS 252	61	1	0-5
42	EB 209-1-6 x EB 80-1-2	62	1	0-11
43	EB 209-1-6 x EB 117-2-1	61	1	0-5
44	EB 209-1-6 x (J 1623 x WC 6-3)	57	1	0-3
45	EB 80-1-2 x EB 132-2	65	1	0-5
46	EB 137-1-1 x EB 209-1-6	54	1	0-5
47	EB 209-1-6 x SSC FS 252	61	1	0-15
48	EBS 137-2 x EB 80-1-2	54	1	0-20
49	EB 132-2 x (J 1623 x WC 6-3)	57	1	0-10
50	EB 80-1-2 x EB 137-1-1	57	1	0-10
51	EBS 137-2 x IP 2253	60	1	0-5
52	EB 80-1-2 x EB 237-3-1	65	1	0-15
53	EB 117-2-1 x EB 209-1-6	61	1	0-10
54	EB 137-1-1 x EB 80-1-2	57	1	0-25
55	EB 80-1-2 x EBS 137-2	60	2	0-8
56	SSC FS 252 x EB 209-1-6	57	2	0-25
57	IP 2253 x EB 137-1-1	57	2	0-18
58	EB 137-1-1 x EB 117-2-1	51	2	0-35
59	EB 117-2-1 x EB 237-3-1	62	2	0-15
60	SSC FS 252 x IP 2253	60	2	0-12
61	IP 2253 x SSC FS 252	57	2	0-15
62	SSC FS 252 x EB 137-1-1	59	2	0-25
63	EB 132-2 x EB 209-1-6	62	2	0-30
64	EB 132-2 x EB 137-1-1	57	3	0-8
65	EB 137-1-1 x IP 2253	57	3	0-25
66	EB 237-3-1 x EB 137-1-1	62	3	0-50
67	IP 2253 x EB 80-1-2	57	4	0-20
68	EB 80-1-2 x EB 209-1-6	54	4	0-25
69	EB 237-3-1 x EBS 137-2	61	4	0-35
70	SSC FS 252 x EB 237-3-1	37	4	0-50

Entry No.	Pedigree	DIF	Infection	
			Mean ^{a/}	Range
71	EB 237-3-1 x IP 2253	60	4	0-25
72	EB 209-1-6 x EB 132-2	64	5	0-65
73	EB 132-2 x EB 80-1-2	65	5	0-60
74	EB 237-3-1 x EB 117-2-1	57	6	0-40
75	IP 2253 x EB 117-2-1	57	7	0-50
76	EB 137-2 x EB 117-2-1	55	7	0-50
77	IP 2253 x EBS 137-2	57	7	0-75
78	EB 132-2 x EBS 137-2	57	8	0-50
79	EB 237-3-1 x EB 209-1-6	61	9	0-50
80	EB 237-3-1 x EB 132-2	57	9	0-50
81	EB 132-2 x EB 117-2-1	57	10	0-60
82	EB 80-1-2 x EB 117-2-1	57	11	0-70
83	IP 2253 x EB 132-2	60	13	0-50
84	EB 209-1-6 x IP 2253	57	15	0-65
85	EBS 137-2 x EB 132-2	57	17	0-80
	BJ 10A	45	23	10-80
	ICH 105	49	23	10-80

^{a/} mean of 20 inoculated-bagged heads

Appendix XXXIII

Smut reactions and days to 75 percent flowering (DTF) of 50 F₂ lines (Low x Agro. elite) during the 1979 rainy season at Hissar

Entry No.	Pedigree	DTF	Smut Sev. (%)	
			Mean	Range
1	(ExB-132-2 S-75)x(700112 x J-147-S-1)	60	0	0-0
2	ExB-237-3-1 S-76xJ-934-7x700797-19-1-5	57	<1	0-1
3	ExB-132-2 S-75 x P-282	56	<1	0-1
4	ExB-132-2 S-75xJ25-1x700797-1-5-2	56	<1	0-2
5	ExB-237-3-1 S-76x70-1x700594-5-1-6	58	1	0-8
6	ExB-237-3-1 S-76xJ 1623x700544-7(P-1)	48	1	0-10
7	ExB-237-3-1 S-76xJ 104x700441-6-1	58	1	0-10
8	ExB-237-3-1 S-76xJ-934-7 x 700544-3-1	48	1	0-12
9	ExB-237-3-1 S-76 x 70-1x700544-5-6	57	2	0-20
10	ExB-132-2 S-75xJ-104 x 700441-6-1	59	2	0-25
11	ExB 132-2 S-75xSouna D ₂ xExB-2(SD 914-2-1)	60	2	0-12
12	EC 298-2 x EB 132-2	60	2	0-20
13	ExB-237-3-1 S-76xJ-1188x700638-3-6	60	2	0-15
14	ExB-132-2-S-75 x 700626 x B 282-2-1	59	2	0-20
15	ExB-132-2 S-75x70-1x700594-5-1	60	3	0-25
16	ExB-132-2-S-75 x J25-1 x 700797-4-1-4	54	3	0-30
17	ExB-237-3-1 S-76 x J-25-1 x J1623-21(P-1)	54	3	0-40
18	(ExB-237-3-1 S-76 x J1623x700049-2-6(P-2)	48	3	0-35
19	700250 x ExB 6-3 x ExB-237-3-1 S-76	59	3	0-20
20	ExB237-3-1 x 111B	54	3	0-25
21	ExB-237-3-1 S-76xJ-104 x 700490-4-3-3	48	3	0-25
22	ExB-237-3-1 S-76 x J 1798x700594-7-1-1	48	4	0-15
23	ExB-237-3-1 S-76 x J-260-1x700557-1-4-10-5	43	4	0-25
24	ExB-237-3-1 S-76 x 700250 x KG-22-10-2	54	4	0-60
25	ExB-132-2 S-75x700250xKG-22-10-2	58	4	0-30
26	ExB-132-2 S-75xJ-25-1 x J1623-21(P-1)	57	4	0-25
27	70-1x700544-5-6 x ExB-132-2 S-75	59	5	0-35
28	ExB-237-3-1 S-76 x J-25-1 x 700515-4-2-3-2	54	5	0-60
29	ExB-237-3-1 S-76xSouna D ₂ xExB-2(SD 914-2-1)	58	5	0-25
30	ExB 132-2 S-75 xJ104 x 700490-4-3-3	54	5	0-25
31	ExB-237-3-1 S-76xJ-25-1x700797-1-5-2	48	5	0-35
32	ExB-237-3-1 S-76 x B282xJ804-1-21-2	54	5	0-60
33	ExB-132-2 S-75 x J 25-1x700515-4-2-3-2	54	6	0-40
34	ExB-132-2 S-75xB 282xJ 804-1-21-2	54	6	0-50
35	ExB-132-2 S-75xSouna D ₂ xExB-2 (SD-914-2)	54	7	0-35

Entry No.	Pedigree	DTF	Smut Sev. (%)	
			Mean ^{a/}	Range
36.	111B x EB 132-2	60	7	0-35
37	ExB-237-3-1 S-76 x B-282 x J-1244-1-1-1-1-1	53	7	0-30
38	ExB-237-3-1 S-76 x J-25-1 x 700515-13-7	56	7	0-90
39	ExB-237-3-1 S-76x700112 x J343-5-7	58	8	0-60
40	ExB 132-2 S-75 x J1188 x 700638-3-6	61	8	0-60
41	ExB-237-3-1 S-76xSouna D ₂ xExB-2(SB 914-2-1)	54	8	0-50
42	ExB-237-3-1 S-76xB-282	48	9	0-35
43	ExB 132-2 S-75xJ-934-7 x 700544-3-1	54	10	0-50
44	ExB-237-3-1 S-76 x J-25-1 x 700797-4-1-4	54	10	0-75
45	ExB 132-2 S-75 x J260-1 x 700557-1-4-10-5	59	10	0-80
46	ExB 132-2 S-75 x J-25-1 x 700515-13-7	54	11	0-60
47	ExB 132-2 S-75 x J-1978 x 700594-7-1-1	58	11	0-40
48	ExB 132-2 S-75 x J-1623 x 700049-2-6(P-2)	57	12	0-50
49	ExB 132-2 S-75 x J934-7 x 700797-19-1-5	60	13	1-60
50	ExB-237-3-1 S-76 x 70-1 x 700594-5-1-6	48	26	0-60

^{a/} Mean of 20 inoculated-bagged heads