(1970) was in favour of the theory of ID-D only over an intermediate range of inoculum concentrations.

A log-log transformation suggested by Baker et al. (1967) was used for the study of ID-D relationship in pigeonpea wilt (Fig. 2). The ID-D curve had a slope value of 0.93 for susceptible genotypes and 0.5 for moderately susceptible genotypes, with a 91% correlation.

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Entomology/Pests

Monitoring Adult Populations of *Maruca testulalis* (Geyer) with Light Traps at Patancheru and Hisarin India

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Maruca testulalis (Geyer) is the most damaging insect pest of pigeonpea in some areas of Asia and Africa. The larvae of this insect web the leaves and terminal buds together, and feed and pupate inside this web. Attacks by this insect can last up to the podding stage. This insect has become a serious pest of pigeonpea in many parts of India with the introduction of short-duration varieties. Knowledge of its seasonal incidence and abundance is very important in devising pest management strategies for specific agroecological zones.

The adults of *Maruca testulalis* were monitored from 1977 to 1986 at ICRISAT Center, Patancheru (18°N, 78°E), and from 1987 to 1990 at ICRISAT's Cooperative Research Station, Hisar (29°N, 75°E) throughout the cropping season, using a modified Robinson type mercury vapor light traps (Bhatnagar and Davies 1979). A single light trap was used at both these centers and the cropping year was considered from June (when the rainy season begins) to May the following year. The data obtained from both these centers were cavorted to $\log_{10}(x+1)$ and the standard week-wise mean trap catches were used to plot flight patterns from June to May, as shown in Figure 1.

At Patancheru, higher catches were obtained between standard weeks 45–50, i.e., from early November to mid-December (Figure 1). Peak catches were recorded during November in standard weeks 46 and 47. A secondary peak was recorded in September in standard weeks 37 and 38. The third and smallest peak was observed in early February in week 6.

At Hisar, the major activity period was from standard week 37 to 43, i.e., from mid-September to mid-October. There was no indication of a secondary peak at Hisar.

The basic information presented on the changing abundance of *M. testulalis* should be useful in:

- developing short-term pest forecasting systems;
- host-plant resistance screening programs at these centers, which can be made more effective by manipulating the sowing dates of cultivars in such a way that the peak activity period of insects coincides with the crop's vulnerable stage; and
- manipulating sowing dates to ensure that the crop flowers and sets pods either before or after the maximum threat period of *M. testulalis* (cultural pest control).

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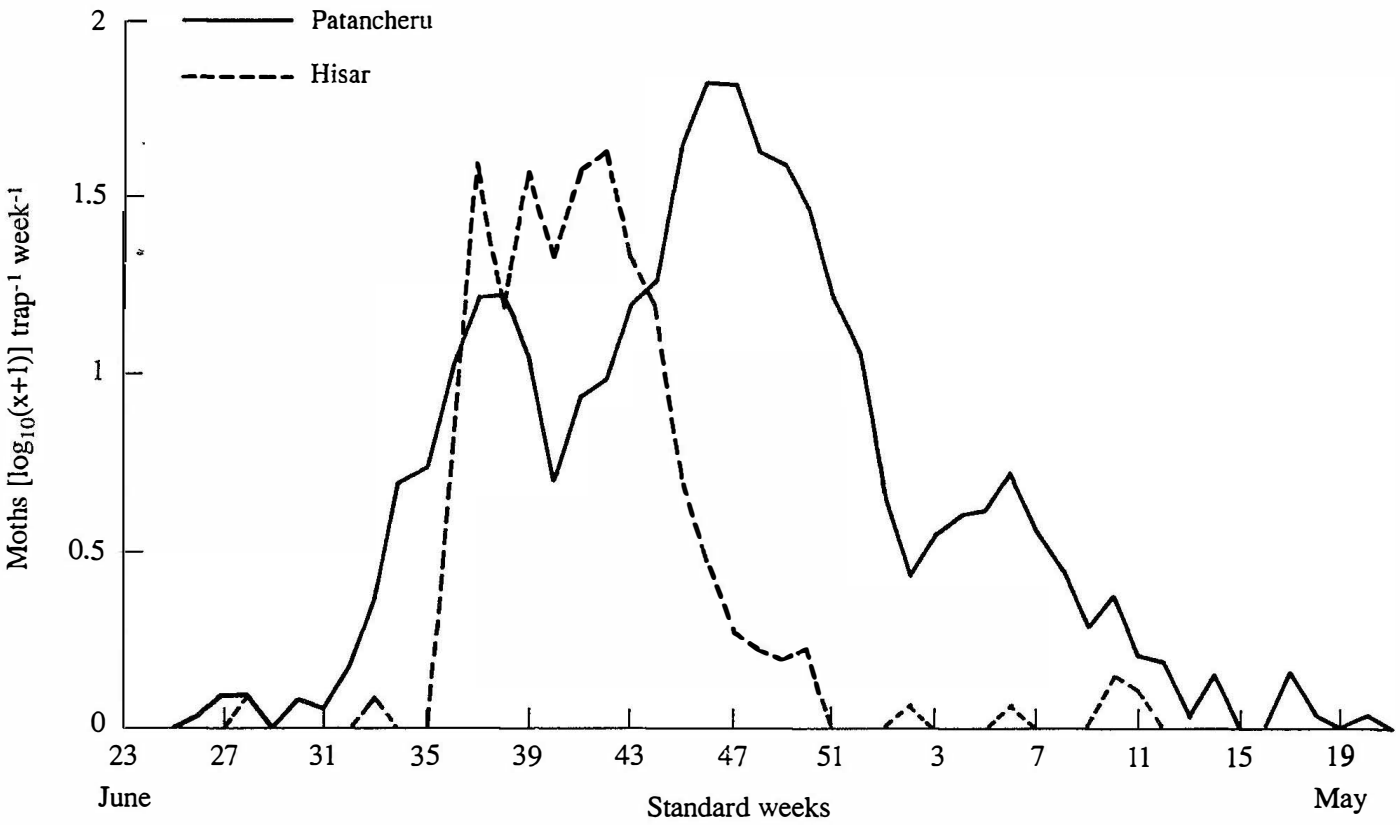

Figure 1. Mean catches standard week^{-1} of Maruca testulalis *moths in light traps at Patancheru and Hisar.*

Controlling Podfly, *Melanagromyza obtusa* in Late Pigeonpea through Host-plant Resistance

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Podfly, *Melanagromyza obtusa* Malloch., is the most important insect pest of late pigeonpea in Uttar Pradesh and in the whole of northern India. On an average, 25–30% pigeonpea produce is annually lost due to podfly damage (Lal and Yadava 1987; Yadava et al. 1988). The only method of podfly control in pigeonpea, currently available, is the use of insecticides. However, the actual use of insecticides on pigeonpea in north India is negligible and is likely to remain so even in the near future. Therefore, it is essential to find a new way to control podfly which is simple, easy, economical, effective, and safe. Identification of resistant cultivars is one approach. To fulfill this objective, the Directorate of Pulses Research (DPR), Kanpur intensified its efforts, and the progress made is reported in this paper.

Three pigeonpea lines PDA 88–1E (JNAM 240), PDA 88–2E (GNG Local), and PDA 88–3 (ICP 1950) developed through single plant selection have consistently shown resistance to podfly, *M. obtusa* at DPR Kanpur. These were evaluated at Hyderabad, Sehore, Kanpur (DPR) Kanpur (CSAUAT), and Varanasi, along with entries received from other centers, during the 1988/89 rainy season. Each entry was grown in a plot size of 4-m long with 5-rows with a spacing of 75 cm × 25 cm and four replications. About 200–500 randomly selected dry pods from central rows were collected and examined for podfly damage by entomologists of the respective centers. The data obtained were further analyzed and converted into relative resistance rating (RR) on a scale of 1–9 (Lateef and Reed 1985). It is seen from the mean RR values that pigeonpea selections PDA 88–1E and PDA 88–2E showed low podfly damage across the locations.

Both PDA 88–1E, and PDA 88–2E found superior and promising during 1988/89, were re-evaluated during the 1989/90 rainy season at Sehore and Kanpur (DPR), and again during the 1990/91 rainy season at Sehore and