

JA 451

HOST SPECIFICITY OF FIGBONPEA WILT PATHOGEN, FUSARIUM 1

J. KANNAIYAN, Y. L. NENE AND T. N. RAJU

Host specificity of pigeonpea wilt pathogen, *Fusarium udum*

J. KANNAIYAN, Y. L. NENE AND T. N. RAJU

Pulses Improvement Program, International Crops Research Institute
for the Semi-Arid Tropics (ICRISAT), Patancheru 502 324

Pigeonpea wilt caused by *Fusarium udum* Butler occurs in several countries and causes serious losses in India and eastern Africa¹. *Fusarium udum* can survive in debris of wilted plants for about three years². It survives only in tissues colonized by it as a parasite³. Cultivated plants and weeds have been identified as symptomless carriers for wilt-causing *Fusaria*³. We wanted to find out the host range of *F. udum*, which is known to produce wilt symptoms only in pigeonpea and its wild relative, *Alysicarpus* spp. The results of our tests are briefly summarized below :

The uniform wilt-sick plots developed at ICRISAT Center were used for testing different crop plants as well as for collecting naturally growing weeds. Pigeonpea line ICP-2376 was planted as a wilt susceptible check and it showed around 90 per cent wilt. The following weed species were collected for fungus isolation : *Alternanthera* Forsk., *Alysicarpus rugosus* DC., *Amaranthus* L., *Argemone* L., *Cardiospermum* L., *Chrozophora* Neck., *Cocculus* DC., *Convolvulus* L., *Corchorus* L., *Cynodon dactylon* (L.) Pers., *Cyperus rotundus* L., *Datura* L., *Dichanthium* Willem., *Eclipta* sp., *Euphorbia* L., *E. prostata* L., *Flaveria australasica* Hook., *Hibiscus* Mill., *Lactuca* L., *Lagascea mollis* Cav., *Phyllanthus* L., *Portulaca* L., *Setaria* Beauv., *Sida acuta* Burm. f., *Solanum melongena* L., *S. nigrum* L., *Trichodesma* R. Br., *T. zeylanicum* R. Br., *Tridax procumbens* L., and *Vicoa* Cass.

The following crop species belonging to different families were grown in the wilt nursery plots and wilt-sick pots : *Arachis hypogaea* L. (cv TMV-2), *Cicer arletinum* L. (cvs. JG-62 & JG-74), *Crotalaria juncea* L., *Cucumis sativus* L., *Dolichos lablab* L., *Gossypium arboreum* L., *Glycine max* (L.) Merr., *Helianthus annuus* L., *Hibiscus esculentus* L., *Lens esculentus* Moench., *Lycopersicon esculentum* Mill., *Nicotiana tabacum* L., *Pennisetum americanum* (L.) Loock (cv. HB-3), *Phaseolus vulgaris* L., *Plasum sativum* L., *Solanum melongena* L., *Sorghum vulgare* Pers. (cv. CSH-6), *Vigna mungo* (L.) Hepper., *V. radiata* (L.) Wilczek, *V. unguiculata* (L.) Walp. and *Zea mays* L. (cv. SB-22).

For each weed species, roots and stems pieces were plated on modified Czapek-Dox agar⁴ and the *Fusarium* spp. isolated were subcultured on potato-dextrose-agar for further observations. Similar isolations were made from crop species at monthly intervals till the harvesting time.

Of the 30 weed species tested, only 10 yielded *Fusarium* species but none of these was *F. udum*. Moreover, the weed species tested did not show any symptom of wilt in the nursery plot.

None of the 21 crop species tested showed wilt either in the sick _____ in wilt-sick pots. However, leaf drying and defoliation were observed on a few plants in wilt-sick pots. A pathogenic form of *F. udum* was isolated from the _____ of such plants. However, we have so far not been able to confirm this observation in cotton plants grown in wilt-sick plots. Further work is needed to confirm whether cotton plant is a host under field conditions.

— *Kannaiya, J., Y. L., Nene, M. V., Reddy, J. G. Ryan, and T. N. Raja. *Tropical Pest Management* 30: 62-71, (1984).

— *Nene, Y. L., J., Kannaiya, M. P., Haware and M. V. Reddy, Proc. Consultants' Group Discussion on the Resistance to Soil-Borne Diseases of Legumes, ICRI S.A.T., 3-39, (1979).

— *Sharma, R. D and R. S. Singh. *Indian J. Mycology and Pl Path.* 3: 67-70, (1973)

— *Subramanian, C. V *J Ind. Bot Soc.* 34 . 29-36, (1955)

Received for publication October 5, 1984