

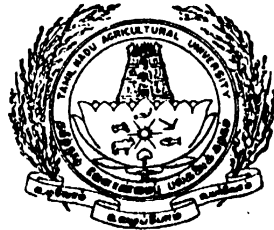
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**NATIONAL SEMINAR
ON
BREEDING CROP PLANTS FOR
RESISTANCE TO PESTS AND DISEASES**

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**SCHOOL OF GENETICS
TAMILNADU AGRICULTURAL UNIVERSITY
COIMBATORE - 641 003 INDIA**

Breeding chickpeas resistant to disease.

Jagdish Kumar, J. B. Smithson, M. P. Haware and Harjit Singh.
ICRISAT, Patancheru, Andhra Pradesh.

Work is in progress at ICRISAT to identify and incorporate resistance to Fusarium wilt, Ascochyta blight, Botrytis grey mould and stunt, which are considered to be most damaging to the chickpea crop. Fusarium wilt resistance has been incorporated into high yielding *desi* and *kabuli* backgrounds, using donor^s identified as highly resistant at ICRISAT and other centers and screening breeding materials in wilt-sick plots. More recently, we have obtained evidence of complementarity between recessive genes conferring resistance indicating the possibility of obtaining highly resistant segregants from crosses among moderately susceptible genotypes, thus making available a much wider range of backgrounds than hitherto released. The inheritance of the other diseases is not well understood. Ascochyta blight resistance is reported to be monogenic and either dominant or recessive; monogenic inheritance may also occur for chickpea stunt. Crosses have been made to incorporate resistance to the other diseases into adapted backgrounds and segregating populations screened in field nurseries in India and elsewhere.

Varietal reaction to ergot among awned and awnless varieties of pearl millet

S. ESWARAMURTHY, C. NAGARAJAN, M. N. PRASAD,
T. S. RAVEENDRAN AND N. SHANMUGAM
Tamil Nadu Agricultural University, Coimbatore

Screening for resistance to pearl millet ergot disease incited by *Claviceps fusiformis* was done under heavy disease pressure in the field during 1981-82. Eleven entries exhibited less than 3 per cent ergot infection as against 33.0 per cent and 27.8 per cent infection in X 4 and IBH 428 respectively. All these eleven entries were awned. The entries are MEBH 24/81, MEBH 29/81, MEBH 28/81, MEBH 31/81, MEBH 30/81, MEBH 32/81, MEBH 26/81, MEBH 27/81, MEBH 39/81, MBH 131 and MBH 110. When subjected to high disease pressure under artificial inoculation the other awned entries namely MH 106, D-111-19, MH 121, MP 36, MBH 118, MBH 130, MBH 134 also exhibited less than 5 per cent ergot infection when compared to 60 per cent infection in MS 5141A and 75 per cent ergot infection in ICH 440. The bristled nature has reduced infection. It is evident that the awned character has prevented natural infection and it implies that the character of awns in the earhead can be exploited in the breeding programme for ergot resistance.