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Research Paper :

Varietal screening for resistance to wilt of cowpea

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SUMMARY

A study was carried out to screen different varieties/ cultures for their resistance against wilt of cowpea (*Fusarium solani*) in pot at Main Forage Research Station, Anand Agricultural University, Anand during 2007. Pathogenicity was proved by soil inoculation and hydroponics method. The data revealed that out of twelve varieties, Gujarat Forage Cowpea-4 was found resistant while Gujarat Forage Cowpea-2 was found to be moderately resistant. Six varieties/ cultures *viz*., Gujarat Cowpea-3, Gujarat Cowpea-4, Gujarat Forage Cowpea-1, Gujarat Forage Cowpea-3, C-43 and ACS-17 showed moderate susceptible reaction where as, remaining cowpea varieties/ cultures *viz*., C-58, Gujarat Cowpea-1, Pusa Falguni and EC-4216 were found to be susceptible against wilt disease.

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Cowpea [*Vigna unguiculata* (L.) Walp.] is an important food and fodder legume of the tropics and sub-tropices and is grown for diversified usage. Nutritive value of cowpea fodder can be compared very well with other forage legumes. It has higher crude protein, digestibility and mineral contents with low fibre. Therefore, cowpea fodder contains sufficient protein and minerals to meet the needs of ruminant for relatively higher levels of production. Yield, both grain and forage, are complex and quantitatively inherited characters and highly influenced by environmental fluctuation. There may not be individual genes but various minor genes and dieses as wilt (*F. solani*) was responsible for yield. The diseases are very important factors as they cause heavy lossess (15 to 75 %) in yield of fodder as well as grain (Howare, 1993 and Florini, 1997). Looking to the seriousness of disease, economic importance of the crop, an experiment was conducted to over come the loss due to the disease by varietal screening for resistance to wilt.

MATERIALS AND METHODS

Twelve cowpea varieties / cultures were screened for their resistance against *Fusarium solani* in pots. The fungal inoculum was multiplied on sterilized Sand maize meal medium (10 g maize meal + 90 g washed sand + 15 ml distilled water) in a 250 ml flask, after inoculation with two discs of 5mm diameters of mycelial plug of four days old culture grown on PDA plate. Inoculated flasks were incubated at room temperature (27 ± 2°C). After seven days of incubation, the inoculum was mixed with sterilized soil @ 60 g kg^{-1} (Biswas and Sen, 2000). On 6th day of soil inoculation, the seeds of different varieties / cultures were surface sterilized with 0.1 per cent mercuric chloride solution and 10 seeds were sown in each pot and four pots were maintained which served as replication of a treatment. The seeds sown in a pot containing sterilized uninoculated soil served as control. The seeds, which did not germinate, were considered under pre-emergence mortality. The ungerminated seeds were subjected to examined under microscope and isolation to confirm the presence of *Fusarium solani*. The seedlings, which wilted after emergence were considered under post-emergence mortality. The post emergence mortality was recorded at 7th day after sowing till 35 days keeping an interval of 7 days. The pre-and post-emergence