

Research Paper :

Management of cowpea wilt by organic amendments

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SUMMARY

A field experiment was conducted at Main Forage Research Station, Anand Agricultural University, Anand during *Kharif* 2007 to find out the efficacy of eight organic amendments against wilt of cowpea [*Vigna unguiculata* (L.) Walp.] caused by *Fusarium solani*. The organic amendments were applied in soil (Neem expelled, hull and cake 766 g/ each plot 7.2 m², Castor cake 400 g/plot, cotton and maize cake 600/g each plot. FYM 2.8 kg/plot and poultry manure 700 g/plot) before sowing and kept for decomposition upto 14 days. Sowing was done in the third week of July by keeping 60 x 60 cm spacing. Randomized Block Design was used with eight treatments and three replications. The mortality of the plants in different treatments were observed as pre and post-emergence. The data revealed that all the organic amendments were found significantly effective in reducing mortality of plants as compared to control. Neem expelled cake (16.80) was significantly superior in reducing plant mortality which was at par with neem cake (16.93).

Key words :

Rust disease,
Puccinia
penniseti, Bajra,
Ahmedpur

Cowpea [*Vigna unguiculata* (L. Walp.)] is an important leguminous forage crop, which serves as a good source of protein for animal, but for last few years a severe wilt was observed in middle of Gujarat state. The pathogen was isolated and identified as *Fusarium solani* L. (ITCC No. 5598, 07). The wilt of cowpea has also been reported from different parts of India by Singh (1954); Monga and Grover (1991) and Ushamalini *et al.* (1998).

The disease is very important as it causes heavy losses (15 to 75 %) in yield of fodder as well as grain (Singh, 1954; Haware, 1993 and Florini, 1997). Looking to the seriousness of the disease, it was thought necessary to overcome the loss due to the disease and to find out effective organic amendment for its control.

MATERIALS AND METHODS

With a view to determine the inhibitory effect of various amendments against wilt of cowpea, the field trial was conducted at Main Forage Research Station (Navli village), Anand Agricultural University, Anand during *Kharif* 2007 in Randomized Block Design (RBD) with 8 treatments each replicated thrice. All the recommended agronomical practices were followed. Seed of cowpea (EC 4216) was sown with 60 x 60 cm spacing in third week of July-

2007. Before sowing of cowpea seeds, all the organic amendments were mixed in the soil and kept for decomposition upto 14 days. Observations on per cent mortality and per cent plant stand were recorded at regular interval. Experimental detail is given here under:

Treatment	Concentration
Neem expelled cake	766 g / plot
Neem hull cake	766 g / plot
Neem cake	766 g / plot
Castor cake	400 g / plot
Cotton cake	600 g / plot
Maize cake	600 g / plot
F.Y.M.	2.8 kg / plot
Poultry manure	700 g / plot
Control	No amendments

RESULTS AND DISCUSSION

The field experiment was conducted to assess the effect of organic amendments on the incidence of cowpea wilt. The data (Table 1) revealed that all the organic amendments were significantly effective in reducing cowpea wilt incidence and improved seed germination. Seedling mortality was very high in control plots.

The germination data revealed that all the organic amendments were significantly superior to control. Maximum germination percentage was observed in neem cake (94.13), which was at par with neem expelled cake (90.09). The

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