

Agri. Res. J. Kerala, 1974 72 (1)

EFFECT OF OIL-CAKES AND MOISTURE ON SEED EMERGENCE AND POST-EMERGENCE DAMPING OFF OF TOMATO

Poor seed emergence and high incidence of damping off diseases in soil containing high moisture levels are widely known. However, practically no information is available on the combined influence of organic amendment and moisture on seed emergence and post emergence damping off tomatoes.

To petridishes filled with soil and infested with *Pythium aphanidermatum* 0.2% (weight/weight of soil) each of coconut and groundnut cakes were added. Amended and unamended soils were kept at three moisture levels viz low, medium and high (20%, 40% and 80% volume by volume of soil) and were incubated at laboratory temperature. After three weeks, 100 tomato seeds were put in each dish and observed for seed emergence and post-emergence damping off.

Increase in soil moisture content significantly reduced seed emergence. The highest moisture level (80%) caused a significant increases in post-emergence damping off (Table 1.) Slight and non-significant increase in seed emergence and decrease in post-emergence damping off have resulted by addition of oil-cakes. Increase in the population of *Pythium* in soil immediately after oil-cakes amendment has been well established (Singh and Pande 1967; Kauraw 1970; Rajan 1971). Singh and Pande (1967) noticed that the response of *Pythium* to oil-cake amendment may vary from very high stimulation to total inhibition depending on the type and concentration of the cake and the degree of decomposition in soil. Rajan (1971) observed that in plots amended with oil-cakes population of *Pythium* increased only upto 4 wteks, while later

Table 1
Effect of Oil-cake and Moisture levels on Seed Emergence and
Post-emergence Damping off of Tomato

Treatments	Check No. Oil-cake	0.2% groundnut cake	0.2% Coconut cake	20% moisture	40% moisture	80% moisture	C D 5%
Emergence transformed value	34,6	38.8	38.2	37,9	43.6	25.1	6.2
Damping off transformed value	45,0	44,3	43.8	42.1	44.3	60.7	6.8

on the population was much reduced and remained to be less than that in check plots upto 24 weeks. These reports indicate that the population of *Pythium* increased immediately after the soil amendment. Therefore, control of damping off, in which infection occurs immediately after seed emergence, may not be feasible by oil-cake amendment. Significant decrease in damping off has occurred in low moisture levels. This may be due to two reasons (1) the zoospores require free water for spread and/or (2) the relative tolerance of this group of organism to anaerobic conditions than most of the other organisms. Rajan and Singh (1973) observed an increase in the population of *Pythium* with an increase in the moisture content of soil.

Acknowledgement

The Senior author is grateful to the Indian Council of Agricultural Research for the award of a Senior Fellowship during the tenure of which the study was carried out.

സംഗ്രഹം

പിത്തീയം അഫാനിഡെർമാറ്റം മൂലം തക്കാളിയിലുണ്ടാകുന്ന തൈവാട്ടരോഗവും വിത്തു മുളയ്ക്കുന്നതിലുള്ള കുറവും മണ്ണിൽ ഏറ്റവും വലിയ അളവിലുള്ള അവസ്ഥയിലാണ് ഉണ്ടാകുന്നത്. മണ്ണിൽ തേങ്ങാ പിണ്ണാക്കു, നിലക്കടലപിണ്ണാക്കു എന്നിവ ചേർക്കുന്നതു കൊണ്ടു വിത്തു മുളയ്ക്കുന്നതിലും തൈവാട്ടരോഗത്തിലും സാരമായ കുറവുണ്ടാകുന്നതല്ല.

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Agricultural University,
Pant Nagar U. P.

K. M. RAJAN
R. s. SINGH

(M. S. received: 24-11-1973)