

Estimation of *Pythium* population in different soil types, with different moisture levels

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SUMMARY

In the experiment on interaction of soil type, moisture levels and varieties, it was confirmed that in heavy soils maximum seed rot was induced. High moisture level also induced significantly higher seed rot. Varieties also differed in their susceptibility. Heavy soils, water logging conditions and high genetic susceptibility caused significantly highest seed rot. All soil types at high moisture level (M₁) caused significantly highest seed rot in susceptible genotype.

Key Words : *Pythium ultimum*, Population density

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Tomato is the important 'protective foods' both because of its special nutritive value and also because of its widespread production. It is the world's largest vegetable crop after potato and sweet potato but it tops the list of canned vegetables. Tomatoes are used for soup, salad, pickles, ketchup, sauces and for many other purposes. According to an estimate of FAO an area of over 80000 hectares was under tomato in 1978 with an annual production of nearly 7,40000 tonnes.

The best soil for tomato is rich loam, with little sand in the upper layer and good clay in the sub soil good texture of the soil is of primary importance.

The tomatoes are prone to a number of diseases. Damping off disease is an important disease in tomato. The seedlings are mostly attacked in the nursery bed at the ground level as a result they topple over. Causal organism may be *Pythium* spp. *Rhizoctonia* sp. or *Phytophthora* spp.

Different species of *Pythium* viz., *P. aphanidermatum*,

P. debaryanum, *P. butteri* and *P. ultimum* Trow have been recorded on tomato. Repeated isolations of tomato seedlings and rotten seeds yielded consistently the pathogen of *P. ultimum* Trow. As pre and post emergence damping off is noticed throughout Maharashtra and is a major obstacle in the supply of quality seedlings as required in the peak demand period of transplanting. Therefore, it is important to investigate the effect of interaction between different soil type, different moisture level and different varieties of tomato on the population of *Pythium ultimum*.

MATERIALS AND METHODS

For assessment of relation of soil type, moisture level and variety with the incidence of pre-emergence damping off; an experiment was conducted at Department of Plant Pathology, College of Agriculture, Latur in 2006. The soil samples of various soil types were collected from Latur district. The experiment was conducted in factorial design was planned with 4 replications. Each pot was representing a replication and in each pot 4 seeds were sown. The details of treatment of each factor are given below.

Factor – I Soil type : 6 treatments :

S ₀	-	No soil (Hydroponics)
S ₁	-	Soils (From low lying area)
S ₂	-	Soils (heavy)

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