Research Paper

An Asian Journal of Soil Science

Vol. 6 No. 1 (June, 2011) : 74-76

Received : March, 2011; Revised : April, 2011; Accepted : May, 2011

Varietal screening against *Pythium ultimum* Trow by sick soil method in heavy black cotton soil

A.A. CHAVAN , G.D. DESHPANDE **AND** S.N. ZAGADE

ABSTRACT

In varietal screening by sick soil method, Arka Vikas, ATV-2, CO3, DARL-62, DT-II, Shalimar, KS-229, Parbhani Yashshri, Pusa *Rabi* and Vaishali varieties have been taken for research study. By sick soil method Parbhani Yashshri responded with significantly less seedling mortality and was at par with Pusa Ruby, KS-229 and CO-3, Arka Vikas and ATV-2.

Chavan, A.A., Deshpande, G.D. and Zagade, S.N. (2011). Varietal screening against *Pythium ultimum* Trow by sick soil method in heavy black cotton soil. *Asian J. Soil Sci.*, **6**(1): 74-76.

Key words : *Pythium ultimum*, Varietal screening, Pathogencity

INTRODUCTION

Tomato is the most popular and widely grown vegetable in the world ranking second in importance to potato in many countries. The fruits are eaten raw or cooked. Tomato in large quantities is used to produce soup juice, ketchup, puree, paste and powder, it supplies vitamin C and adds variety of colours and flavours to the food. Its many forms are adopted to wide range of soils and climate extending from the tropics to almost the Arctic circle. Tomato seeds contain 24 per cent oil, used as salad oil.

Tomato is also rich in medicinal value. The pulp and juice are digestible mild aperients, a promoter of gastric, secretion and blood purifier it is reported to have antiseptic properties against intestinal infections. It said to be useful against cancer of the mouth sore mouth.

Damping off and root rot are the important diseases of tomato caused by *Pythium* spp. *Rhizoctonia solani, Phytopthora parasitica* and few other organisms. These are very serious diseases affecting plants at the nursery stage, damping off tomato is due to infection of *Pythium ultimum* in which the seedlings of tomato collapse and fall over because of weakening of the stem tissue at soil level. To increase the production of tomato it is important to use resistant variety to this disease. To find out resistance in varieties of tomato, screening was undertaken by sick soil method.

MATERIALS AND METHODS

Varietal screening by sick soil method:

Varietal screening by sick soil method was planned in split plot design keeping 10 varieties as main treatment and two subtreatments 1) I_1 – sick soil and 2) I_0 – Sterile soil. For each subtratement 4 replications were maintained. Each pot carrying 4 transplants represented one replication. Four seedlings of each variety grown in humidity chamber were transferred to sick soil (I_1) pot as well as to sterile soil (I_0) pot. Sick soil was prepared by sterilizing soil (soil amended with sorghum flour @ 25 g/ kg soil) and inoculating with 5 mm inoculum disc. After inoculation the pots were kept in trays having 2 cm column of sterile water for creating humidity. The trays were covered with polythene sheet so as to retain the maximum humidity. The uninoculated sterile soil lot was also kept in tray for creating humidity. After 4-5 days of incubation after inoculation in humid trays, four seedlings of each

Correspondence to :
A.A. CHAVAN, Rajiv Gandhi Agriculture College, PARBHANI (M.S.) INDIA

Authors' affiliations:
G.D. DESHPANDE Department of Plant Pathology, Marathwada Agricultural University, PARBHANI (M.S.) INDIA

S.N. ZAGADE,, Marthawada Agricultural University, PARBHANI (M.S.) INDIA