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Host range of *Pythium ultimum* infecting tomato

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Tomato crop face the problem of pre-emergence damping off and post emergence damping off, reducing production of tomato crop. Damping off of seedlings in crop is caused by a group of fungi belonging to class oomycetes amongst which *Pythium* species are most important. There are two clear phases of the damping off *i.e.* pre-emergence and post-emergence.

The plants belonging to families of solanaceae, leguminasae chenopodiaceae and cruciferae vary in susceptibility to *Pythium* species. Therefore, to find out the different host of the *Pythium* spp., experiment was undertaken by inoculating *Pythium ultimum* on different hosts.

In order to assess the host range of *P. ultimum* this experiment was conducted at Department of Plant Pathology, College of Agriculture, Latur in 2006, an experiment in Split Plot Design was planned with four replications and following treatments:

Main treatments : 20 crops

C_1-Chilli (*Capsicum annumm* L.), C_2-Brinjal (*Solanum melongena* L.), C_3 Cabbage (*Brassica oleracea* var capitata), C_4-Cauliflower, (*Brasica oleracea* var. botrytis) C_5-Cluster bean (*Cyamopsis tetragonoloba* L.),C_6-Fenugreek (*Trigonella foenum* L.), C_7-Bitter gourd (*Memordia charantia* L.), C_8-Ridge gourd (*Luffa acutangula* L.), C_9-Cucumber (*Cucumis melo* L.), C_{10}-Bottle gourd (*Lagenaria siceraria* L.), C_{11}-Pigeonpea (*Cajanus cajan* L.), C_{12}-Soybean (*Glycine max* L.), C_{13}-Cotton (*Goyssypium hirsutum* L.), C_{14}-Sunflower (*Helianthus annus* L.), C_{15}-Safflower (*Carthmus tintorius* L.), C_{16}-Green gram (*Vigna mungo* L.), C_{17}-Wheat (*Triticum aestivum* L.), C_{18}-Sorghum (*Sorghum bicolor* L.), C_{19}-Bajra (*Pennisetum americanum* L.) and C_{20}-Maize (*Zea mays* L.)

Sub treatment 2 :

I_0-Uninoculated control (Sterile water), I_1 - Inoculation (with 100 % culture filtrate).

Seeds of 20 crops were procured either from Agronomy /Horticulture Department of the College of Agriculture, Latur. Seeds were treated with thirum and then seeded in sterile soil in earthen pots. Sterile water was used for watering. After 15 to 20 days 4 seedlings of each crops were transferred to each pot containing either culture filtrate (I_1) or sterile water (I_0).

The observations on seedling mortality were recorded after 7 days of transfer of seedlings to inoculum or sterile control.

Inoculation (I_1) in all the crops have significantly induced the seedling mortality over control (I_0). In 20 inoculated crops pathogen induced in general 51(%) seedling mortality. In cucumber significantly highest mortality was noted, which was followed by cauliflower cabbage, soybean and green gram. Most susceptible crop were cauliflower, cucumber, soybean, green gram which had mortality ranging from 67.62 to 90 per cent. Moderately susceptible crops were pigeonpea, safflower, cotton and sorghum. Significantly least, mortality was expressed in wheat and maize, sunflower and bottle gourd.

This experiment has clearly shown that the pathogen *P. ultimum* possesed capability to cause infections in wide range of crops, belonging to family *Solanaceae, Brasicahe, Leguminaceae, Compositae, Malvaceae, Cucurbitaceae* and *Graminae*. If the resistance to this pathogen is detected it well impart a broad based non-race specific durable horizontal resistance.

These findings are in agreement with Sands *et al.* (1993) who noted host range of *P. ultimum.*