RESEARCH ARTICLE | International Journal of Plant Sciences, Vol. 4 Issue 1 : 44-48 (January to June, 2009)

Host range and epidemiology of *Cercospora capsici*

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Accepted : September, 2008

SUMMARY

Cercospora capsici was found pathogenic to *Capsicum annum* var. Grossum. It, however, failed to infect legumenaceae and other plant species of solanaceae. Under field conditions, temperature and relative humidity (RH) were found positively correlated with disease development. The correlation. between precipitation and disease development was non-significant but the precipitation, however, was significantly correlated with RH. The isolate conidia required incubation period of 11 to 13 days on bell pepper. The conidia germinated laterally and unlike basal and apical cells, some intercalary cells did not germinate even after 48 hours at 25±1:1°C under saturated conditions. Moreover, the spore germination was optimum at pH 5.5-7.00. On leaf spots, maximum sporulation was recorded with RH of 96.1 per cent at 25±1:2^{0}C and *in vitro* growth.

Key words : *Cercospora capsici*, Host specificity, Epidemiology

Cercospora capsici incites a disease threat to the capsicum growers in Kashmir and other parts of the world. The pathogen was first isolated from bell pepper by Heald and Wolf (1911) and later studied by, Chupp (1953) and Vasudeva (1963). The cause of chilli leaf spot was related to either *Cercospora capsici* (Marchal and Steyaert, 1929 and Unamuno, 1932) or *Cladosporium capsici* (Kovachevski, 1938) and *Cercospora unamunoi* (Castellani, 1948). However, Bhartiya *et al*. (2000) discovered *Cercospora capsicigena* as according to them there was not a record of valid *Cercospora* specie on chilli because the earlier reported specie *Cercospora capsici* Unamuno and *Cercospora unamunoi* Castellani were considered synonyms to *Cercospora capsicicola* Vassilji which itself was recombined as *Paeoramularia capsicicola* Vassilji by Deighton (1976). The present investigation is in the light of bell pepper isolate *Cercospora capsici* Heald and Wolf. Since it was every time maintained as distinct species and no body ever reported its host specificity, an attempt was made to know its host range and the distinct status vis-a-vis epidemiology.

MATERIALS AND METHODS

The present investigation was conducted during 2003 in the Division of Plant Pathology, SKUAST-K, Shalimar, Kashmir. The spore suspension, whenever required, was obtained by harvesting sporulating leaf spots in filtered and sterile water and the concentration thereof was adjusted, with the help of a haemocytometer, to 1x10^4 spores/ml using filtered and sterile water. The laboratory culture was maintained on SLAM (Sugarbeet Leaf extract Agar Medium) (Dhingra and Sinclair, 1985) under alternate light and darkness (12 h/12 h) at 20-25^{0}C and further the methodology applied for a particular investigation is given hereunder.

Host range:

Six plants-species *viz.*, *Phaseolus vulgaris* L.; *Glycine max* (L.) Merr; *Lycopersicon esculentum* Mill; *Solanum melongena* L; *Capsicum annum* var. Grossum L. and *C. annum* vat. Annum L. were tested under green house conditions for susceptibility to *C. capsici*, isolated from *C. annum* var. Grossum. Cultivar California Wonder, being susceptible to *C. capsici*, was used as check and in all cases the test was conducted on 65-70 days old apparently healthy potted plants. It was a six 4 replicate experiment which was evaluated in CRD. In order to rule out any latent infection, the test plants were sprayed with sterilized distilled water upto run-off and incubated in humidity chamber for 15 days at 22±4^{0}C. Likewise the spore suspension was atomized on to the healthy plants and the later were kept in humidity chamber for 96 hours to facilitate germination of spores and subsequent infection before shifting them to green house, where the temperature ranged from 18-28^{0}C. Periodical observations for disease appearance were made on all the inoculated plants for a period of one month. The leaves which exhibited typical disease symptoms were subject to microscopic examination for presence of *C. capsici.*

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