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Role of abiotic factors on the epidemiology of wilt of pomegranate caused by *Ceratocystis fimbriata*

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Wilt of pomegranate caused by *Ceratocystis fimbriata* Ellis and Halst. is a major threat in the successful cultivation of the crop in Northern Karnataka state of India. A study on the role of soil and weather parameters on the development of this disease was conducted at University of Horticultural Sciences, Bagalkot, India. The survivability of *C. fimbriata* in host debris at different environmental conditions revealed the fungus survived in infected host debris up to 34, 22 and 28 weeks at different conditions viz., refrigeration, room temperature and field condition. Soil temperature on *C. fimbriata* was tested and per cent colonization of the fungus was maximum at 25□ (89.67% colonization), while it was minimum at 35□ (7.00% colonization) and 15□ (6.33% colonization). There was no growth obtained at 10□ and above 40□. The cent per cent disease incidence was recorded at moisture level of 50, 60 and 70 per cent. The result indicated that the per cent disease incidence was 10.00 in the month of October, 2015, which reached a peak of 82.50 per cent in the month of September 2016. Similarly the highest AUDPC (142.50 per cent) and apparent rate of infection 'r' (0.13) also reached maximum in the month of September 2016. Multiple regression equation developed to establish relationship between weather parameter and per cent disease incidence of wilt, revealed that all the weather parameters contributed to significant variation in per cent disease incidence. The equation developed is $Y=117.784+0.452RF-6.162Tmax+6.914Tmin-0.605RH$ with co-efficient of determination ($R2$) of 44 per cent. Further, step wise multiple regression analysis indicated that the weather parameters explained 44.94 per cent variation in per cent disease incidence. The rainfall explained a maximum of 30.66 per cent of total variation in disease incidence.

Biography

Raghavendra K Mesta did his PhD from University of Agricultural Sciences, Dharwad, India. He is presently serving as Professor and Head, Department of Plant Pathology, University of Horticultural Sciences, Bagalkot, India. He has published more than 50 papers in reputed journals.

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