

Seasonal Incidence of Chilli Anthracnose In West Bengal Region

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Received 24 February 2016; Accepted 29 March 2016; Published online 18 April 2016

Abstract The field experiment was conducted in 2012 to study the seasonal incidence of anthracnose in relation to weather parameters chilli (variety bullet). The disease severity (PDI) was assessed at seven days interval up to the harvesting of the crop and statistically correlated with the nine meteorological parameters. It was observed that the onset of the disease was at 60 DAT (8.24%) which progresses significantly and reached peak at 137 DAT (33.53%). Disease severity was positively and significantly correlated with RH_{max} (0.681) and RH_{min} (0.669). While other factors like T_{max} (-0.799), T_{min} (-0.781), W_v (-0.872) and $VPII$ (-0.717) were negatively and highly correlated with disease severity R_t and S_{hr} were positively

correlated with disease severity but were not significant.

Keywords Anthracnose, Weather parameters, Chilli, Disease severity.

Introduction

Chilli, *Capsicum annum* L. is an annual herbaceous vegetable and spice grown in both tropical and subtropical regions. The crop originated in Mexico. The crop is grown in almost all states of India, such as Andhra Pradesh, Maharashtra, Karnataka, Gujarat, Tamil Nadu, Orissa and West Bengal. The sustainability of chilli-based agriculture is threatened by a number of factors. Main biotic stresses such as bacterial wilt, anthracnose, viruses and several insect pests have been reported to impair the crop productivity [1]. Anthracnose disease is one of the most significant economic constraints to chilli production worldwide, especially in tropical and subtropical regions [2]. The disease is mainly a problem on mature fruits causing severe losses due to both pre-and post-harvest fruit decay [3]. Under suitable weather condition dieback and fruit rot caused by *Colletotrichum capsici* resulted a yield loss of 12 to 15% [4]. Environmental factors play a major role in the development of disease epidemics. The relationships among temperature, humidity and rainfall possibly lead to different levels of disease severity. Generally infec-

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cumulative rainfall and the number of rainy days for the entire period of the disease assessment were worked out.

Results and Discussion

Table 1 shows that the onset of the disease was at 60 DAT (8.24%). It progresses significantly and reached peak at 137 DAT (33.53%). Data presented in Table 2 showed a positive and significant correlation of disease severity with RH_{max} (0.681) and RH_{min} (0.669). While other factors like T_{max} (-0.799), T_{min} (-0.781), W_v (-0.872) and $VPII$ (-0.717) were negatively and highly correlated with disease severity. R_t and S_{hr} were positively correlated with disease severity but were not significant. Correlation between anthracnose severity and weather parameters have been reported by Meenu and Garg [7] in chilli and Sunil and Benagi [8] in green gram.

Thus, environmental factors decide the epidemic of anthracnose of chilli. Environmental factors are important for disease development and these environmental factors are being used to forecast disease severity. Further, the knowledge of weather conditions for the development and spread of disease are

important to organize Agro Advisory Services for the farmers to take up timely management practices.

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