

Research Paper :

Occurrence and severity of alternaria blight of pigeonpea in central U.P.

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SUMMARY

Pigeonpea [*Cajanus cajan* (L.) Millsp.] is an important pulse crop, and it suffers from *Alternaria* blight caused by *Alternaria tenuissima*. Studies were carried out on the prevalence and severity of disease in central Uttar Pradesh and effect of temperature, relation to the effect of temperature, relative humidity and rainfall on disease development. The incidence of disease varied from 18.0% to 37.5% at different locations. The temperature and humidity played the significant role in disease development while rainfall had no positive correlation with disease development.

Key words :

Alternaria tenuissima,
Cajanus cajan,
Climatic factors

Pigeonpea [*Cajanus cajan* (L.) Millsp.] is the major pulse crop and ranks second next to the chickpea in area, production and productivity. It suffers greatly from *Alternaria* blight and *Alternaria* infestation may cause 40-45% reduction in yield, in most pigeonpea growing states of India. It was reported for the first time from Varanasi, India by Patwardhan and Singh (1971). Later, Kannaiyan and Nene (1977) reported its occurrence from Hyderabad as a disease of minor importance. Agarwal (1985) also reported *Alternaria tenuissima* on pigeonpea from Delhi.

MATERIALS AND METHODS

To find out the prevalence and severity of *Alternaria* leaf blight of pigeonpea, an extensive survey was conducted during the crop season 1999-2000 and 2000-2001 at different research farms of the C.S.A. University, K.V.K. Farm (Rae Baraeli), Saraimira (Farrukhabad), C.R.S. (Etawah) Uttaripura (Kanpur) and some local farmer's field thus representing different locations of Central U.P. where this crop was grown. Naturally infected leaves of pigeonpea showing the characteristic symptoms of *Alternaria* leaf blight were collected at regular intervals. All the specimens collected were critically examined in the laboratory for the presence of the causal organism and some were properly preserved, labelled and kept in dry and wet forms for further studies.

Study was carried out on the effect of atmospheric temperature and relative humidity on disease development. Pigeonpea var. BAHAR was sown during the two consecutive crop years viz., 1999-2000 and 2000-2001. Upon the occurrence of disease, the number of leaves infected were recorded and subsequently, the disease intensity was worked out at fortnightly intervals and it was correlated with the weather data. Thus, the data on the maximum and minimum temperatures, relative humidity, rainfall and disease intensity were recorded and critically analyzed to ascertain the most conducive climatic conditions for severity and development of the disease.

RESULTS AND DISCUSSION

With view to assess the prevalence, severity and distribution of disease, eleven fields in seven districts were surveyed during the crop season. The observations in respect to the severity of disease in different locations are summarized in Table 1.

The observations of the Table 1 clearly indicate the *Alternaria* leaf blight of pigeonpea, was prevalent in all the areas surveyed showing its wide spread occurrence. The disease severity in different locations varied from 18.00 to 39.00%.

The disease was more prevalent in university farm of C.S. Azad University of Agriculture and Technology, Kanpur (39.00%) whereas, it was lowest (18.00%), Krishi Vigyan

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