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Short Note

Occurrence of chilli ripe fruit rot (*Colletotrichum capsici)* in Himachal Pradesh

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In Himachal Pradesh, cultivation of chilli (*Capsicum annuum*) is restricted to districts of Chamba, Kangra, Kullu, Mandi, Solan, and Sirmour Distt., in an area of 1200 ha. with an annual production of 400 metric tones (Anon.,1998). The crop is attacked by many diseases of which anthracnose or die-back or ripe fruit rot caused by *Colletotrichum capsici* (Sydow) Butler and Bisby, is the major constraint in chilli production as the disease causes both qualitative and quantitative losses. The pathogen has been found to have variable populations in Himachal Pradesh (Sharma *et al.*, 2005). The crop suffers heavy losses due to fruit rot during monsoon season and losses up to the tune of 20-80 per cent have been reported in chillies and bell pepper (Bansal and Grover, 1969; Paul and Behl, 1990). The knowledge of occurrence of disease is of utmost importance before developing control strategies. Thus, the present studies were undertaken to assess the occurrence of the disease in some districts of Himachal Pradesh.

Periodic surveys of different chilli growing areas of Himachal Pradesh were undertaken during the *kharif* season (2001 and 2002) to assess the occurrence of the disease. Different locations in the districts of Bilaspur, Hamirpur, Kangra, Kullu, Mandi, Shimla, Sirmaur and Solan were surveyed at fruit development stage and observations were recorded on disease incidence and severity by following the standard procedures and equations (Dasgupta, 1981; Mckinney, 1923).

The disease was found to occur in almost all the potential chilli growing areas with an incidence ranging from 3.5 to 55 per cent and disease severity between 7.6 to 30 per cent. Comparatively more disease incidence was recorded in Bilaspur, Kangra and Kullu districts. In Kullu district, the disease incidence varied between 6-55 per cent with an average of 19.83 per cent in various locations, maximum being in Sarsari (55%) and minimum in Bale (6%) areas. The disease severity in Kullu district ranged from 12.5 to 28.2 per cent. Various locations in Kangra district showed 12.5-45.0 per cent incidence of fruit rot with a severity of 7.6-19 per cent. Kotli, Jaur, Jalugram, Mansana and Nau were main chilli growing areas in Mandi district where disease incidence was recorded upto 25 per cent, maximum being in Kotli and minimum in Mansana areas and the fruit rot severity ranged between 14.3-30 per cent. In Dhaulakuan area of Sirmaur district, the incidence varied between 17.5-22.5 per cent. In Solan district, the most affected areas were Kandaghat, Saproon valley and Shrinagar where severity index was 17.48 % and average disease incidence was 10.67%. The variation in disease incidence and severity can be attributed to the type of variety grown and the environmental conditions prevalent in a particular location. The occurrence of chilli fruit rot has been reported by various workers (Bansal and Grover, 1969; Thind and Jhooty, 1990; Paul and Behl, 1990). Bansal and Grover (1969) recorded about 60 per cent losses in Punjab due to this disease.

Table 1. Distribution pattern of chilli anthracnose in Himachal Pradesh

District / Location surveyed	Variety grown	Disease Incidence (%)	Disease Severity (%)
Bilaspur			
Berthin	Local	22.5	17.9
Hamirpur			
Bada	Local	8.5	12.2
Bohni	Local	17.5	14.6
Tropka	Local	12.5	10.5
Kangra			
Arla	Local	17.5	19.0
Drang	Local	12.5	7.6
Malan	Surajmukhi	17.5	12.5
Nagrota	Surajmukhi	25.0	11.0
Palampur	Surajmukhi	45.0	8.3
Paprola	Local	22.5	10.2
Samola	Local	17.5	8.5
Tanda	Local	15.0	8.7
Kullu			
Bale	Local	6.0	27.7
Banjar	Local	12.5	16.2
Bhagwanpur	Local	12.5	22.0
Chrornala	Local	12.5	28.0
Katrain	Surajmukhi	10.0	12.5
Sarsari	Local	55.0	20.8
Shat	Local	17.5	17.3
Thuari (largi)	Local	35.0	23.3
Tikri	Local	17.5	28.2
Mandi			
Jaur	Local	22.5	26.3
Jalugram	Local	12.5	30.0
Kotli	Local	25.0	16.3
Mansana	Local	7.5	14.3
Nau	Local	22.5	20.2
Panarsa	Local	17.5	24.4
Shimla			
Cheog	Local	7.5	8.3
Sirmaur			
Dhaulakuan	Local	17.5	20.3
	DKC-8-1	22.5	12.0
	DKC-8-2	17.5	20.5
Solan			
Kandaghat	Local	17.5	26.7
Saproon	Local	12.5	25.0
	Local	9.0	12.5
Shrinagar	Local	9.0	9.6
	Local	3.5	17.4
	Local	12.5	13.7

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References

Anonymous. 1998. Area and production under main crops. Statistical Outline, H.P.: 62-63.

Bansal, R. D. and Grover, R. K. 1969. Reaction of chilli (*Capsicum frutescens*) varieties to *Colletotrichum capsici*. *Journal of Research* (PAU) 6: 345-348.

Dasgupta, B. 1981. Sporulation and relative virulence among isolates of *Colletotrichum capsici* causing anthracnose of betelvine. *Indian Phytopathology* 34: 196-199.

McKinney, H. 1923. Influence of soil temperature and moisture on infection of wheat seedling by *Helminthosporium sativum*. *Journal of Agriculture Research* 26: 195-217.

Paul, Y.S. and Behl, M.K. 1990. Some studies on bell pepper anthracnose caused by *Colletotrichum capsici* and its control. *Seed Research* 1: 656-659.

Sharma, P. N., Kaur, Mandeep, Sharma, O. P., Sharma, P. and Pathania, Aniu. 2005. Morphological, pathological and molecular variability in *Colletotrichum capsici*, causing fruit rot of chillies in sub tropical region of North West India. *Journal of Phytopathology* 153: 232-237.

Thind, T. S. and Jhooty, J. S. 1990. Studies on variability in two *Colletotrichum* species causing anthracnose and fruit rot of chillies in Punjab. *Indian Phytopathology* 43: 53-58.

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