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Short Note

Botrytis grey mold on pea under polyhouse conditions in Himachal Pradesh

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Garden pea (*Pisum sativum* L.) is an important off-season vegetable grown in one or the other part of Himachal Pradesh almost throughout the year. Mid hills of the state, offers promise for its off-season cultivation from March to April under open conditions. However, its quality is affected by low temperature and frequent hailing during February-March months. Keeping these observations in view, 16 promising genetic stocks viz; Arkel, Matar Ageta, Lincoln, Palam Priya, Azad P-1, Punjab-89, Kukumseri Selection, DPP-3, DPP-4, DPP-62, DPP-65-P, DPP-141-P, DPP-0653, DPP-1542-EP, DPP-9411, DPP-9418-06, comprising of early and mid season varieties/lines of garden pea, were evaluated at vegetable farm of the CSK HPKV at Palampur under low cost naturally ventilated polyhouse in a randomized block design having three replications. The mean monthly day and night temperature and mean minimum and maximum relative humidity in the polyhouse were periodically recorded. Preliminary studies revealed that garden pea can be successfully grown in these naturally ventilated polyhouses from December to March when the average night temperature hover around 5-7^{0}C and the potential crops viz. capsicum, tomato and cucumber can not be grown successfully in these structures during this period. Therefore, polyhouse can be utilized for off-season production of early garden pea varieties from November to March thereby ensuring efficient and throughout the year utilization of the protected structures besides enriching N-status of the greenhouse soils giving twice higher yield than open conditions, apart from better quality and well filled pods.

However, Botrytis blight or grey mold appeared on early maturing varieties; Arkel and Matar Ageta in moderate to severe form in third week of February to the end of March, 2007. Amongst various other diseases on pea this disease causes more losses under cool humid conditions (Hagedorn, 1984). The disease was recorded on leaves, stems, flowers, flower buds and pods. Flower infection led to their shedding and fallen infected petals of the plant provided an excellent medium for the rapid saprophytic growth of the pathogen and disease development. Initially the lesions appeared as round to irregular water soaked spots on the leaves at the margins or centre. The lesions soon enlarged and covered almost half to 2/3rd of the leaf. After 7-8 days the lesions turned grey and the growth of the fungus appeared as greyish mold. On pods, lesions developed at both terminal ends or at the middle of the pod. They first appeared as water soaked and were oval to semicircular covering larger areas up to 5 cm in diameter (Plate 1). Distinct grey and dark brown zonations were seen on the pods. In some cases no grain formation occurred. The disease generally appeared at the lower parts and then progressed upwards in the plant. During wet or humid weather, masses of silver-grey spores develop on the infected tissue.



Plate 1. Symptoms of grey mold on pea plant, pods and leaves

The representative samples have been deposited in the Dhauladhar Plant Disease Herbarium (Acc. No. DPDH-1294). The disease was first reported on pea by Ford and Haglund (1963).

The monthly mean temperature and relative humidity of the polyhouse from September, 2006 to March 2007 indicated that the temperature ranged from 5.2- 35.3^{0}C and relative humidity from 22-98 per cent. *Botrytis* infections are usually favored by cool, rainy spring and summer weather usually around 15^{0}C. Grey mold has been reported to be damaging when rainy, drizzly weather continues over several days (Wijngaarden and Ellen, 1968). It is concluded that Botrytis grey mold of pea is a disease of serious concern under polyhouse conditions in the state.

References

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