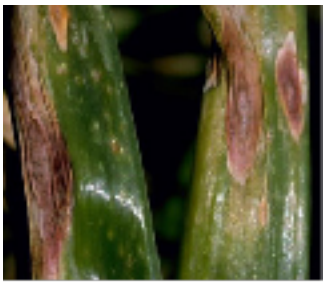
Purple Blotch of Onion

Casual Organism: *Alternaria porri* (Eliss) Cif. (Subdivision; Deuteromycotina; Class: Hyphomycetes; Order: Moniliales; Family: Dematiaceae)

Distribution and Importance: Purple blotch of onion and garlic is a common disease in Bharat, especially irrigated fields. This disease was first reported by Ajreker from Bombay in 1921. Often the disease is aggravated by earlier damage done to leaves by *Botrytis* and thrips.

Symptoms: The symptoms are first appear on leaves or seed stalks as small water soaked and immediately turns brown. As the spot enlarges it becomes zonate and more or less purplish in colour. The margin is surrounded by a yellow halo that extends upward and downward for some distance. In wet weather the surface of the spot is covered with the brown or almost black sporulation of the fungus. When a few large lesions develop on the leaf it shrinks, turns yellow and dries. When seed stalks are affected the seeds do not develop and remain shrivelled. In continuous wet weather the affected leaves and stalks fall down. At harvest time or later, the bulbs of the affected plants may show decay.



The Pathogen: The conidiophores arise singly or in groups. They are straight or flexuous, often geniculate, septate, pale to mid brown and up to 120 µm long & 5-10 µm thick. There are one to several well defined conidial scares on the conidiophores. Conidia are muriform, solitary, straight or curved, obclavate, tapering beak which is same length as the body of conidium. Conidia are mid-golden brown in colour, smooth or minutely verrucose and measure 100-300 µm in length and 15-20 µm thick at broadest part. They have 8-12 transverse and zero to several longitudinal or oblique septa. The beak is flexuous, pale, 2-4 µm thick and tapering. Each cell of the conidium is capable of germination by a germ tube. Existence of chlamydospores int the fungus is also reported.



Disease Cycle: The pathogen overseasons in crop debris and in symptomless bulb. The conidia are short-lived after they are separated from the conidiophores. The fungus could survive for 12 months in diseased onion leaf and seed stalk debris burried in soil at 5 or 7.5 cm depth. The chlamydospores, when formed, are reported as survival structures. The seed borne inoculum is likely to lose viability after a few months of storage. Greater number of

conidia caught in the air during January when the crop is in 3-leaf stage. Increase relative humidity enhance the production of spores.

Management:

- Follow the crop rotation.
- Field should be well drained.
- Use of resistant varieties.
- The seed should be treated with Thiram (@2.5 g/kg seed).
- Use of different fungicides at the time of first disease appearance like three sprays of 0.2% mancozeb at 7 days intervals are effective.