



REVIEW OF RESEARCH



ALTERNARIA DISEASES: AN OVERVIEW

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ABSTRACT :

This paper presents concerning diseases caused by Alternaria species area unit quite common and area unit worldwide in their incidence. vital host plants embrace a spread of crops like apples, broccoli, cauliflower, carrots, potatoes, Chinese cabbage, tomatoes, bok choy, and citrus, and several plants used as ornamentals and variety of weeds.

KEYWORDS : *Alternaria species , vital host plants , several plants.*



INTRODUCTION :

Alternaria typically attacks the aerial components of its host. within the foliate vegetables, symptoms of Alternaria infection generally begin as atiny low, circular, dark spot. because the sickness progresses, the circular spots might grow to 1/2 in. (1 cm) or a lot of in diameter and square measure typically grey, gray-tan, or close to black in color. Due to unsteady environmental conditions, the infectious agent doesn't have a consistent rate of growth, therefore spots develop in an exceedingly target pattern of concentric rings (fig. 1). wherever host leaves square measure massive enough to permit unrestricted symptom development, the target spots square measure diagnostic for Alternaria as there square measure few different pathogens that cause this kind of diagnostic expression.[1-3] Excluding the target pattern, the lesion is additionally typically coated with a fine, black, fuzzy growth. This growth is that the Alternaria plant life sporulating on the dying host tissues. Many Alternaria species conjointly manufacture toxins that diffuse into host tissues sooner than the plant life. Therefore, it's not uncommon to examine a yellow halo that fades into the healthy host tissues that surround the target spot. Dark, sunken lesions square measure typically the expression of Alternaria infections on roots, tubers, stems, and fruits. The plant life might sporulate in these cankers, inflicting a fine, black, velvety growth of plant life and spores to hide the affected space.



Figure 1. Leafspot of crucifers caused by *Alternaria brassicae*, showing the typical target spot composed of concentric rings.

THE PATHOGEN

The spores of *Alternaria* species are often beaked and always multicelled. The cells are divided longitudinally and transversely. Spores are dark and borne singly or in chains (fig. 2). Some *Alternaria* species and the diseases they cause on specific hosts include

- *Alternaria dauci* (carrot leafblight)
- *A. radicina* (black rot of carrot)
- *A. brassicae* and *A. brassicicola* (leaf spot of crucifers)
- *A. solani* (tomato early blight and fruit rot)
- *A. brassicae* or *A. brassicicola* (broccoli headrot)
- *A. tenuis* and *A. alternata* (fruit spot on peppers)

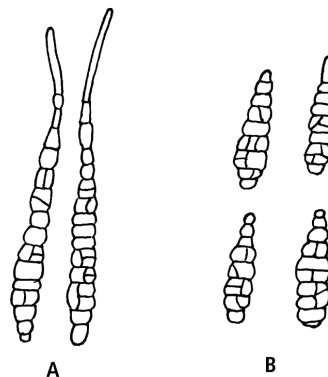


Figure 2. Conidia of *Alternaria brassicae* (A) and *Alternaria brassicicola* (B).

BIOLOGY

Plant pathogenic *Alternaria* species survive between crops as spores and mycelium in infected plant residues or in and on seeds. If the fungus is seedborne, it may attack seedlings, causing damping-off, stem lesions, or collar rot. Most often, however, the fungus grows and sporulates on plant residues during periods of rain, heavy dew, or under conditions of good soil moisture. Spores are wind blown or splashed onto plant surfaces where infection occurs.[4-5] The spores must have free moisture to germinate and infect. Penetration of the host can be direct, through wounds, or through stomata (fig. 3). Tissues that are stressed, weak, old, or wounded are more susceptible to invasion than sound, vigorous tissues.

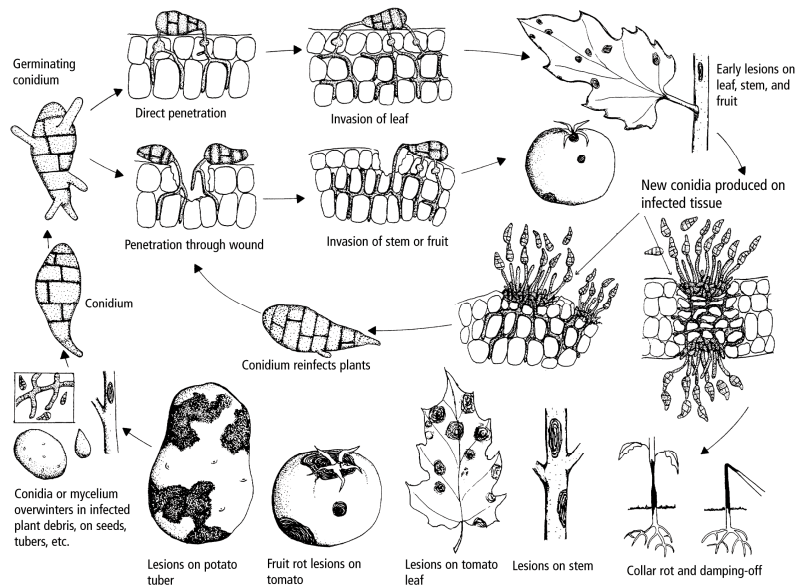


Figure 3. Development and symptoms of diseases caused by *Alternaria*. (Source: Agrios, G. N. 1997. *Plant pathology*, 4th edition. San Diego: Academic Press.)

DISEASE MANAGEMENT

Suppression of *Alternaria* diseases can be accomplished in several ways. Some plant cultivars carry resistance. When seed may be carrying the fungal spores, using diseasefree seed or seed that has been treated can greatly reduce disease incidence. Rotating crops so that susceptible crops follow non-host crops is useful in reducing disease incidence. Crop residue destruction and weed control also helps reduce disease.[6]

Ultraviolet light has been shown to be essential for spore formation in *Alternaria* species. Therefore, under greenhouse growing conditions, the use of ultraviolet light-absorbing film can greatly reduce the incidence of some *Alternaria* diseases.

CONCLUSION

Finally, there are a number of fungicides that have activity against *Alternaria* fungi. Chlorothalonil, captan, fludioxonil, imazalil, iprodione, maneb, mancozeb, thiram, and selected copper fungicides have varying degrees of efficacy against *Alternaria* species. Consult the product label for registered uses and dosage recommendations.

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