Sunflower

Alternaria Leaf Spot

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Identification and Life Cycle

Various fungi of the genus *Alternaria* can cause Alternaria leaf spot. Stem spotting and a head rot can also occur. *A. helianthi* is the most common pathogen responsible for the disease, but *A. zinniae* and *A. alternata* can occasionally attack sunflower. The disease generally does not cause economic loss in the High Plains production region, but can be severe in warm, humid environments. Disease occurs when spores (conidia) land on leaves or stems, germinate in the presence of free moisture, and directly penetrate and infect the plant. Plants are most susceptible to infection beginning at flowering and continuing through maturity; plant stress also predisposes plants to the disease. Spores are readily disseminated in and among fields by splashing irrigation water, wind, and perhaps insects. The pathogen survives between sunflower crops in and on infested crop debris, as a pathogen of safflower and cocklebur, and on seed.

Plant Response and Damage

Alternaria leaf spot symptoms appear as circular, dark brown to black lesions with concentric rings that resemble a target pattern. Some lesions have distinct yellow halos on young plants. Lesions generally do not cross major leaf veins, and become angular in shape as they age. Under disease favorable conditions lesions can coalesce, leading to necrosis and withering of entire leaves. Stem lesions begin as dark flecks that enlarge to form large elliptical to diamond-shaped sunken lesions. Large, blackened stem lesions can girdle plants and cause stem breakage. High humidity and moderate to warm temperatures favor Alternaria leaf spot. Yield losses of 20 to 80%, with corresponding oil losses of 20 to 30%, have been reported from tropical and subtropical sunflower production regions. In the High Plains, the disease is only of importance during wet years or when sunflowers are grown under abundant irrigation.

Management Approaches

Biological Control

No biological control strategies have been developed for Alternaria leaf spot.

Cultural Control

Crop rotation and strict sanitation of crop debris effectively manage Alternaria leaf spot most years in the High Plains.

Chemical Control

Fungicides generally are not necessary for Alternaria leaf spot management during most years in the High Plains. Chemical controls are most effective when applied at or just before the first appearance of lesions, and used in combination with cultural control strategies.

Product List for Alternaria Leaf Spot:

Pesticide	Product per Acre	Application Frequency (days)	Remarks
Neem			
Trilogy	2 pt	7-14 days	Maximum of 2 gallons; 0 day PHI
Pyraclostrobin			
Headline	6-12 fl oz	7-14 days	Maximum of 24 fl oz/A; rotate with different fungicide chemistry; 21 day PHI

Categories: Sunflower, Disease, Alternaria Leaf Spot

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