

Cucurbits

Alternaria Blight and Spot (Cucumber, Melon, Pumpkin, Squash, and Zucchini)

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Identification and Life Cycle

Alternaria blight, caused by the fungus *Alternaria cucumerina*, is a common disease of most cucurbits in warm, rainy weather. A similar cucurbit disease called Alternaria spot, caused by a related fungus (*Alternaria alternata*), is not known to occur in the High Plains. The Alternaria blight disease cycle begins when dormant mycelium in infested crop debris produce spores (conidia), which are disseminated by wind and splashing water to new plantings of susceptible cucurbit crops. Spores germinate in free moisture and penetrate their hosts through natural openings or wounds. Disease is most severe during extended periods of leaf wetness (8 to 24 hours) during moderate to warm (54 to 86°F) temperatures. Frequent rainfall, especially during warm weather, is highly favorable to the pathogen and disease development. The pathogen survives between susceptible crops in infested crop debris up to two years.

Plant Response and Damage

Alternaria blight symptoms first appear on older leaves near the crown, appearing as small, yellow to brown spots with a light green to yellow halo. Lesions enlarge into brown necrotic areas and generally have concentric rings. As disease progresses, lesions merge and cause leaves to cup and die, exposing fruit to sunscald. Fruit lesions have been reported, but are rare. Alternaria blight reduces both fruit yield and quality.

Management Approaches

Biological Control

No biological control practices have been developed for Alternaria blight or spot.

Cultural Control

Practice a three-year or longer crop rotation to nonhosts such as a small grain, another vegetable, or corn. Deeply incorporate crop debris after harvest to reduce pathogen survival and primary inoculum that could incite future epidemics. Promote air movement within the canopy by planting rows parallel to prevailing wind direction, reducing plant population, and planting on wider row spacing. These practices will reduce the duration of leaf and soil wetness, and may help reduce *Alternaria* blight in semi-arid production areas. Avoid irrigating near dusk and overhead irrigation, if possible, to reduce periods of leaf wetness. Some melon types, such as some honeydew, are highly resistant to *Alternaria* blight, but little resistance is available in most commercially acceptable cucurbits. Leafminer feeding can increase the incidence and severity of *Alternaria* blight, and should be controlled.

Chemical Control

Chemical controls are most effective when integrated with sound cultural control practices. The fungicide Procure is registered for powdery mildew control in cucurbits, but it may provide suppression or control of *Alternaria* blight as well.

Product List for Alternaria Blight and Spot:

Pesticide	Product per acre	Application Frequency (days)	Remarks
Chlorothalonil and Chlorothalonil Mixtures			
Bravo 720	1.5-2 pt	7 days	Do not graze or feed debris to livestock; 7 day PHI
Bravo Ultrex	1.4-1.8 lb	7-10 days	Maximum of 16.5 pounds per season; 0 day PHI
Bravo Weather Stik	1.5-2.0 pt	7-10 days	Maximum of 20 pints per season; 0 day PHI
Echo 720	1.5-2.0 pt	7-10 days	Maximum of 2.5 gallons per season; 7 day PHI
Echo 90DF	1.2-1.6 lb	7-10 days	Maximum of 16.67 pounds per season; 7 day PHI
Echo Zn	2.2 to 2.8 pt	7-10 days	Maximum of 3.6 gallons per season; 7 day PHI
Ridomil/Bravo	1-2 lb	7-14 days	7 day PHI
Copper Fungicides			
Champ Dry Prill	1.33 lb	5-7 days	
Champ Formula 2	1.33 pt	5-7 days	

Copper-Count-N	4-6 pt	7 days	Mid-harvest.
Cuprofix Disperss	2.5 lb	5-7 days	
Kocide 101	1.5-3 lbs	5-7 days	May cause injury
Kocide DF	1.5-3 lbs	5-7 days	May cause injury
Kocide 4.5LF	1-2 pts	5-7 days	May cause injury
Kocide 3000	0.5-1.25 lb	5-7 days	May cause injury
Nordox	1.5-2.0 lb	7-10 days	
Tri Basic Copper	2-4 pt	7-10 days	1 day PHI
EBDC, Copper/EBDC, and EBDC/Zoxamide Mixtures			
Cuprofix Disperss MZ	4-7.25 lb	3-10 days	Maximum of 63.1 pounds per season; 5-14 day PHI
Dithane	2-3 lb	7-10 days	Maximum of 25.6 pounds per season; 5 day PHI; use a non-ionic surfactant to improve performance
Gavel 75DF	1.5-2.0 lb	7-10 days	Maximum 16 pounds per season; 5 day PHI; include a nonionic surfactant to improve performance
Maneb 75 DF	1.5-2.0 lb	7-10 days	Maximum of 17.1 pounds per season; 5 day PHI
Manex 80W	1.5-2.0 lb	7-10 days	Maximum of 16.0 pounds per season; 5 day PHI
Manex	2.4-3.2 pt	7-10 days	Maximum of 25 pints per season; 5 day PHI
ManKocide	2.0-2.5 lb	7-10 days	Maximum of 128 pounds per season; 5 day PHI
Penncozeb 80W	1.5-3.0 lb	7-10 days	Maximum of 24.0 pounds per season; 5 day PHI
Penncozeb 75DF	1.5-3.0 lb	7-10 days	Maximum of 25.6 pounds per season; 5 day PHI
Strobilurins and Strobilurin Mixtures			
Cabrio	12-16 oz	7-14 days	Maximum of 4 applications or 64 oz per season; Alternate Cabrio with fungicides with different modes of action; 0 day PHI
Quadris	11.0-15.4 fl oz	5-14 days	Maximum of 4 applications or 2.88 quarts per season; Alternate Quadris with fungicides with different modes of action; 1 day PHI
Tanos	8 oz	5-7 days	Rotate with fungicides with a different mode of action, such as chlorothalonil or mancozeb;

Maximum of 48 ounces per
season; 3 day PHI

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Categories: Cucurbits, Disease, Alternaria Blight, Alternaria Spot, Cucumber, Melon, Pumpkin, Squash, Zucchini

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