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Vine crops disorder: Angular leaf spot

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Angular leaf spot is a bacterial disease that can be economically damaging to cucumbers, honeydew melon, and zucchini squash grown in Wisconsin. The bacterium *Pseudomonas syringae* pv. *lachrymans* infects leaves, stems, and fruit.

Symptoms and effects

Initial lesions appear as small, tan, water-soaked spots that are delineated by the leaf veins. As the lesions enlarge, the dead centers fall out. Under humid conditions, a milky exudate may be present. This exudate dries to a white crust near the lesion. Infected fruit may appear healthy but later develop soft spots as lesions develop beneath the rind. The lesions eventually crack open, providing an entry point for soft rot organisms.

Disease cycle

The bacterial pathogen is seed-borne beneath the seed coat. The bacterium also survives in the soil on plant debris for up to 2 years. Prolonged leaf wetness favors infection. The bacterium enters the leaf through respiration pores (stomates), water-excreting pores (hydathodes), or wounds. Infections spread from leaf to leaf by splashing rain, human activity, and cucumber beetles.

Control

To reduce the likelihood of infection, rotate out of vine crops for at least 2 years and use disease-free seed. In greenhouse cucumbers, lowering the humidity to 80–90% will reduce the spread of the disease. Hot water and chemical seed treatments are not effective for totally eliminating the pathogen on infested seed.

Breeding efforts in the last several years have resulted in a large selection of cucumber varieties that are tolerant to angular leaf spot and these should be planted whenever possible. In some of these varieties, tolerance to the disease is most strongly expressed in the fruit, while significant leaf infection can occur during cool, wet weather. The fol-



Lesions enlarge until leaf veins limit expansion.



Mature lesions often fall out of the leaf, giving the foliage a tattered appearance.

lowing list identifies some of the currently available varieties.

Copper fungicides applied every 5–10 days may be helpful, particularly after rain or wind storms.

| Cucumber varieties with tolerance to angular leaf spot | | |
|---|-------------------|----------------|
| Slicing | Autograph | Indy |
| | Cobra | Intimidator |
| | Dasher II | Prancer |
| | Daytona | Raider |
| | Diva | Speedway |
| | Fanfare | Stonewall |
| | Greensleeves | Thunder |
| | Impact | |
| Pickling | Calypso | Olympian |
| | Carolina | Patio Pickle |
| | Eclipse | Patton Classic |
| | Eureka | Patton Supreme |
| | Fancipak M | Regal |
| | Jackson | Royal |
| | Jackson Classic | Vlasstar |
| | Jackson Supreme | Wellington |
| | Lafayette Classic | Zapata |
| | Napoleon Classic | |



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