

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

Angular Leaf Spot: Perennial Problem of Cucurbits – Teresa Rusinek, CCE ENYCHP

Every year the first disease that we see in cucurbits, particularly summer squash under row covers, is Angular Leaf Spot (ALS), a bacterial disease caused by *Pseudomonas syringae*. Initially leaf symptoms appear as small, irregularly shaped, water-soaked lesions. The spots expand until they are limited by larger veins, giving them the angular appearance which the disease is named for. Under our current humid conditions, the water-soaked spots can be covered by a bacterial ooze, which can dry and give the leaf area near the spot a crusty appearance. This can also happen on the underside of the leaf. As the spots dry, they shrink and tear away from the healthy tissue leaving large, irregular holes and giving the leaf a ragged appearance. Squash and watermelon leaf lesions are more variable in size than cucumber lesions which are usually smaller. The squash and melon lesions can be surrounded by a yellow halo. Lesions can appear on the fruit as well but will be more circular and are smaller than on the leaf. If left untreated, the ALS lesions will crack open, allowing secondary fungi and bacteria to invade possibly resulting in a slimy, foul-smelling fruit rot.

The *Pseudomonas* bacterium is a seedborne pathogen, but it can also overwinter in infested crop residues. The disease is widespread and is especially damaging when there are extended and frequent summer rains when daily temperatures range between 75 and 82° F. The warm, moist conditions under row covers tend to be perfect for disease development. Dry conditions, caused by either dry weather or the removal of row cover, tend to slow or stop the disease, once it's present. Of course, prevention is the best cure.

Strive to plant certified, pathogen-free seed. There are resistant cucumber varieties, but no squash or melons are resistant. A cucurbit rotation should avoid replanting in the same field for at least 2 years as the bacteria can survive for that same duration. Do not over fertilize and avoid overhead irrigation as well as handling plants while they are wet. This includes cultivation, harvesting etc. Harvest clean plantings first and any infected plantings last as this will help slow the pathogen down. Plow under or burn infected crop debris immediately after harvest. Apply OMRI approved copper alone in organic production. Conventional growers can apply copper along with a fungicide like mancozeb that can protect from secondary infection. Copper will help slow disease spread during particularly wet periods but can be dropped if dry weather continues for 2 weeks.

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program



Left Photo: Zucchini with lower leaves infected with *P. syringae*. Right Photo: close-up of ALS disease symptoms on Zucchini leaf.

Images: C. Bornt



Left Photo: Winter Squash seedlings infected with *P. syringae*. Right Photo: ALS disease symptoms on winter squash planted in the field on white plastic.

Images: T. Rusinek