

## Alternaria Leaf Spot of Cabbage

### Symptoms

The first symptoms of the disease are minute yellow specks on the oldest leaves and stems. The spots darken and enlarge into circular, tan to dark brown spots (Fig. 1). Alternating light and dark concentric rings give the spots the appearance of a target (Fig. 1); a yellow halo may surround the lesion. Older spots may be black, brown, or tan in color, papery in texture and may fall off, giving the appearance of a shot-hole (Fig. 2). Infection of seedling stems may result in damping-off or stunted plants. As the disease progresses, it spreads to all aerial parts of the plant (Fig. 2). If humid, lesions can produce spores.



Figure 1. Leaf spot caused by *Alternaria brassicae* on cabbage. Photo: Tom Isakeit.

### Causal Agent

Two fungi in the genus *Alternaria* cause this disease: *Alternaria brassicae* and *A. brassicicola*. Besides cabbage, these pathogens infect broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, kohlrabi, kale, rutabaga, and turnip.



Figure 2. Advanced symptoms of Alternaria leaf spot on cabbage. Photo: Tom Isakeit.

### Inoculum Source and conditions

The fungus is primarily seedborne, but can also originate from plant residue, cull piles, volunteer hosts or weeds. Spores are spread by wind, water-splash, people, and equipment. The disease is favored by moist and warm weather (75-82 °F). Under those conditions, spores can be produced within a week, and start a new disease cycle. Several disease cycles can be completed in a season under favorable conditions.

### Management

Use certified seed or treat seed (hot water or chemical treatment) to get rid of the pathogen. Reduce fungal inoculum source by incorporating plant debris into the soil and destroying cull piles. Rotate with non-brassica crops, and control brassica weeds. Avoid overhead irrigation during head development. Apply fungicides (organic/inorganic) regularly to protect the head wrapper leaves, when conditions are favorable for disease development.

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September 14, 2011

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