



# onion disorder: Purple blotch

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Purple blotch causes onion leaves to become blighted and die prematurely. The result is reduced yields from undersized and immature bulbs. In storage, diseased bulbs rot. The destructiveness of the disease varies widely with locality and season, and depends upon how often and how long onion foliage is wetted by dew, fog, or rain. Purple blotch affects onions, garlic, leeks, and false shallot. The fungus that causes purple blotch (*Alternaria porri*) is closely related to the species that causes early blight on tomatoes and potatoes (*Alternaria solani*).

## Symptoms and effects

Small, water-soaked, brownish lesions appear on leaves, flower stalks, and flowers of onions 1–4 days after infection occurs. As the spots enlarge, they assume a bull's-eye appearance and become somewhat sunken and purplish in color. The border of the lesion is reddish or purple with a yellow halo that extends for some distance above and below the center of the lesion. Lesions may girdle the entire leaf. In moist weather, a dense purplish-black mold growth covers the diseased areas. If conditions are favorable for disease development, affected leaves and stems may turn yellow and die within several weeks after the first lesions appear.

Onion bulbs may be infected at harvest or in storage through the neck or through wounds in the bulb scales. The rotting bulb is semi-

watery and yellow at first but later becomes wine red and finally dark brown or black. Diseased bulb tissue gradually dries and becomes papery.

## Disease cycle

The purple blotch fungus overwinters on infected plant debris. Spores are produced under wet conditions in the spring and are carried to onion plants by wind, rain, and farm equipment. Rain or persistent moisture is necessary for infection.

## Control

Use onion seed or sets that are free from pathogen contamination. Plant into well-drained soils in fields with good air circulation. Avoid overcrowding and excessive nitrogen fertilizer. A 4-year crop rotation will reduce the buildup of the fungus in the soil. Eradicate weeds and volunteer onions close to the field and incorporated plant debris immediately after harvest.

Yellow storage onions are less susceptible to purple blotch than sweet Spanish varieties. Varieties with very waxy foliage have some tolerance to purple blotch.

In years when the disease is severe, a fungicide may be needed to slow disease spread. Several fungicide options are currently available and others are under development. Refer to Extension publication *Commercial Vegetable Production in Wisconsin* (A3422) for fungicide recommendations.



**The sunken bull's-eye lesion caused by purple blotch.**



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