



Target spot (early blight) of potatoes

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Target spot, or early blight is one of the most common diseases attacking leaves and stems of potatoes. It usually spreads during autumn and is welcomed by some growers as a haulm killer. It can, however, cause losses if outbreaks occur early in the season, or in late maturing crops.

Cause

The disease is caused by the fungus *Alternaria solani*. The same organism attacks tomatoes, capsicums and related plants.

Symptoms

On the leaves the disease starts as small circular to oval dark brown to black spots. These spots enlarge, becoming oval to angular, and are normally confined within the main veins of the leaflets. They are up to 6 mm in diameter.

Under very favourable conditions individual spots can grow to 10-12 mm. They become leathery looking, and the development of close concentric rings within each spot gives the disease its name, target spot. When the disease is severe, spots can unite and cause an upward rolling of the leaf tips and death of leaves.

Spots that develop on stems are more elongated than those on the leaves.

Target spot can sometimes infect the tubers. It appears as small dark, slightly sunken, circular to irregular-shaped lesions (10 to 20 mm in diameter), with slightly raised margins. A brownish, corky dry rot up to 6 mm deep develops in the tissue beneath the lesion. Affected tubers are prone to attack from other soil fungi which can cause complete rotting of the tuber.

Disease cycle

The target spot fungus is carried over between seasons on plant refuse in the soil. This is because of the widespread infection that generally occurs in crops before harvest.

During the spring spores are produced which are spread by wind, rain and insects. When spores fall on potato leaves they remain on the surface until conditions are favourable. They then germinate and penetrate the plant and an outbreak of disease occurs. High temperatures and high humidity favour the development of target spot.

The disease attacks plants that lack vigour. It often spreads toward the end of the season when the plants have stopped growing. It often kills the tops of the plants and when defoliation is premature this means lower yields of tubers.



Figure 1. Target spot in potato leaves



Figure 2. The concentric rings of target spot

Control

Effective control of target spot involves a combination of measures:

- Practise crop rotation - this helps in reducing initial levels of the disease.
- Plant healthy seed - don't infect a clean paddock.
- Keep plants growing vigorously - plants with adequate nutrition and water, and free from other diseases, are less prone to infection.

- Apply fungicide sprays - sprays can be combined with insecticides or other fungicides. Many of the sprays for late blight *Phytophthora infestans*, are effective against target spot.
- Burn dead haulms - when infection is bad, burning trash after harvest will reduce carry over to the next season.

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