**Early Blight**

Early blight and late blight, two serious diseases of potato, are widely distributed. Both are found everywhere potatoes are grown. The terms “early” and “late” refer to the relative time of their appearance in the field, although both diseases can occur at the same time.

Early blight of potato is caused by the fungus, *Alternaria solani*, which can cause disease in potato, tomato, other members of the potato family, and some mustards. This disease, also known as target spot, rarely affects young, vigorously growing plants. It is found on older leaves first. Early blight is favored by warm temperatures and high humidity.

**Symptoms**. Spots begin as small, dark, dry, papery flecks, which grow to become brown-black, circular-to-oval areas. The spots are often bordered by veins that make them angular. The spots usually have a target appearance, caused by concentric rings of raised and depressed dead tissue. A yellowish or greenish-yellow ring is often seen bordering the growing spots. As the spots become very large, they often cause the entire leaf to become yellow and die. This is especially true on the lower leaves, where spots usually occur first and can be very abundant. The dead leaves do not usually fall off. Dark brown to black spots can occur on stems.

Tubers are affected, as well, with dark, circular to irregular spots. The edges of the spots are often raised and purple to dark metallic gray in color. When the tuber is sliced open, the flesh under the spots is usually brown, dry, and leathery or corky in texture. As the disease advances, the potato flesh often becomes water soaked and yellow to greenish yellow. Early blight spots are less likely to become rotted by secondary organisms than the other tuber rots.

**Prevention.** Varieties resistant to this disease are available. In general, late maturing varieties are more resistant than the earlier maturing varieties. Keep plants healthy; stressed plants are more predisposed to early blight. Avoid overhead irrigation. Do not dig tubers until they are fully mature in order to prevent damage. Do not use a field for potatoes that was used for potatoes or tomatoes the previous year. Keep this year’s field at least 225 to 450 yards away from last year’s field. Surround the field with wheat to keep wind-blown spores from entering. Use adequate nitrogen levels and low phosphorus levels to reduce disease severity. See current recommendations for chemical control measures.

**Late Blight**

Late blight of potato is a serious disease caused by *Phytophthora infestans*. It affects potato, tomato and, occasionally, eggplant and other members of the potato family. Late blight is the worst potato disease. It was first reported in the 1830s in Europe and in the US. It is famous for being the cause of the 1840s Irish Potato Famine, when a million people starved and a million and a half people emigrated. Late blight continued to be a devastating problem until the 1880s when the first fungicide was discovered. In recent years, it has reemerged as a problem. It is favored by cool, moist weather and can kill plants within two weeks if conditions are right.

**Symptoms.** Leaf spots begin as small, pale to dark green, irregularly shaped spots. The spots often have pale green to yellow rings surrounding them. The spots are not bordered by veins but can grow across them. In cool, moist weather, the spots grow rapidly into large brown to purplish black areas. The disease may kill entire leaflets or grow down the petioles and into the stem, killing the plant above it. When the weather is moist, a white fungal growth appears on the edges of the dead areas, usually on the undersides of the leaves. In the field, plants often give off a distinctive fetid or decaying odor.

On susceptible potato varieties, the tubers can become infected. Small to large, slightly depressed areas of brown to purplish skin can be seen on the outside of the tuber. When the tuber is cut open, there is a tan-brown, dry, granular rot, which extends ½” to ¾” into the tuber. The border of this area is indistinct. If potatoes are stored under warm or humid conditions, the rot will continue to progress. Often secondary rot organisms set in and completely destroy the tubers.

**Disease Identification.** White, fluffy fungal growth is present on the bottoms of leaves in moist weather. Leaf spots are not bordered by veins.

**Prevention.** Use disease-free seed potatoes. Keep cull/compost piles away from potato growing areas. Destroy any volunteer potato plants. Keep tubers covered with soil throughout the season to prevent tuber infection. Remove infected tubers before storing to prevent the spread of disease in storage. Kill vines completely before harvest to avoid inoculation of the tubers during harvest. Resistant varieties are available, although some fungicides must still be applied to resistant cultivars. See current recommendations for chemical control measures

**3. Potato Healthy**

* **No symptoms of disease**.
* Plants exhibit strong, vigorous growth with bright green leaves.
* Tubers develop without blemishes or signs of rot.
* Healthy plants benefit from balanced fertilization, consistent watering, and regular pest control measures.
* Proper crop management practices like crop rotation, mulching, and proper irrigation help maintain healthy plants.