

COSUBAN NON-TOXIC FUNGICIDE 100%

ELIMINATES THE FOLLOWING DISEASES:

Blight When plants suffer from blight, leaves or branches suddenly wither, stop growing, and die. Later, plant parts may rot.

Fire blight: This bacterial disease affects apples, pears, fruit trees, roses, and small fruits. Infected shoots wilt and look blackened.

Alternaria blight (early blight): This fungal blight infects ornamental plants, vegetables, fruit trees, and shade trees worldwide. On tomatoes, potatoes, and peppers, it is called early blight. On leaves, brown to black spots form and enlarge, developing concentric rings. Heavily blighted leaves dry up and die as spots grow together. Lower leaves usually show symptoms first. Targetlike, sunken spots will develop on tomato branches and stems. Fruits and potato tubers also develop dark, sunken spots. Alternaria spores are carried by air currents and are common in dust and air everywhere. They are a common cause of hay fever allergies. Alternaria fungi overwinter on infected plant parts and debris, or in or on seeds.

Phytophthora blight (late blight): Lilacs, rhododendrons, azaleas, and holly infected by Phytophthora fungi suffer dieback of shoots and develop stem cankers. Prune to remove infected branches and to increase air movement. On peppers, potatoes, and tomatoes, Phytophthora infection is known as late blight. The first symptom is water-soaked spots on the lower leaves. The spots enlarge and are mirrored on the undersurface of the leaf with a white downy growth. Dark-colored blotches penetrate the flesh of tubers. These spots may dry and appear as sunken lesions. During a wet season, plants will rot and die.

Bacterial blight: This bacterial disease is particularly severe on legumes in eastern and southern North America. Foliage and pods display water-soaked spots that dry and drop out. On stems, lesions are long and dark colored. Some spots may ooze a bacterial slime.

Cankers Cankers usually form on woody stems and may be cracks, sunken areas, or raised areas of dead or abnormal tissue. Sometimes cankers ooze conspicuously. Cankers can girdle shoots or trunks, causing everything above the canker to wilt and die. Blights and diebacks due to cankers look quite similar.

Cytospora canker: This fungal disease attacks poplars, spruces, and stone fruits. The cankers are circular, discolored areas on the bark.

Nectria canker: This fungus attacks most hardwoods and some vines and shrubs. It is most damaging on maples. Small sunken areas appear on the bark near wounds, and small pink spore-producing structures are formed. It kills twigs and branches and may girdle young trees.

Rots **rots** are diseases that decay roots, stems, wood, flowers, and fruit. Some diseases cause leaves to rot, but those symptoms tend to be described as leaf spots and blights. Rots can be soft and squishy or hard and dry. They are caused by various bacteria and fungi. Many are very active in stored fruits, roots, bulbs, or tubers.

Fruit rots: Grapes infected with black rot turn brown, then harden into small, black, mummified berries. Brown rot of stone fruits causes whole fruit to turn brown and soft.

Mushroom and wood rots: These rots can damage or kill trees. Some of them form obvious mushrooms or other fungal growths. Cutting out infected areas can provide control.

Coffee Rusts Rusts are a specific type of fungal disease. Many of them require two different plant species as hosts to complete their life cycle. Typical rust symptoms include a powdery tan to rust-colored coating.

Other rusts: Wheat rust, cedar-apple rust, and white pine blister rust require alternate hosts. Wheat rust needs barberry to survive, cedar-apple rust needs both juniper and an apple relative, and white pine blister rust needs a susceptible member of the currant family.

Wilts Plants wilt when they don't get enough water. When fungi or bacteria attack or clog a plant's water-conducting system, they can cause permanent wilting, often followed by the death of all or part of the plant. Wilt symptoms may resemble those of blights.

Stewart's wilt: This bacterial disease is widespread on sweet corn in eastern North America. It overwinters in flea beetles and infects corn when they begin feeding on its leaves. Infected leaves wilt and may have long streaks with wavy margins. Bacterial slime will ooze out if the stalks or leaves are cut. Plants eventually die or are sufficiently stunted that no ears are produced.

Fusarium and Verticillium wilt: These fungal wilts attack a wide range of flowers, vegetables, fruits, and ornamentals. Plants wilt and may turn yellow. To control, plant resistant cultivars. Rotate crops, or do not replant in areas where problems have occurred.

Anthracnose: Anthracnose, or bird's-eye spot, is a fungal disease. It causes small dead spots that often have a raised border and a sunken center, and that may have concentric rings of pink and brown. Bean anthracnose infects beans and other legumes. The symptoms are most obvious on the pods as circular, black, sunken spots that may ooze pink slime and develop red borders as they age.

Club root: Club root affects vegetables and flowers in the cabbage family. Plants infected by the fungus wilt during the heat of the day, and older leaves yellow and drop. Roots are distorted and swollen. Avoid club root by choosing resistant cultivars and raising your own seedlings.

Damping-off: Damping-off is caused by a variety of soilborne fungi. Seeds rot before they germinate, or seedlings rot at the soil line and fall over. It can be a problem with indoor seedlings and also in garden beds. Prevent damping-off by keeping soil moist, but not waterlogged. Provide good air movement in seed-starting areas. Wait until soil is warm enough for the specific plant before seeding. Sterilseed-starting mix or a mix that includes compost can help prevent problems, too.

Downy mildew: Downy mildews are fungal diseases that attack many fruits, vegetables, flowers, and grasses. The primary symptom is a white to purple, downy growth, usually on the undersides of leaves and along stems, which turns black with age. Upper leaf surfaces have a pale color. Lima bean pods may be covered completely, while leaves are distorted.

Galls: Galls are swollen masses of abnormal tissue. They can be caused by fungi and bacteria as well as certain insects. If you cut open a gall and there is no sign of an insect, suspect disease. Crown gall is a serious bacterial disease that infects and kills grapes, roses, fruit trees, brambles, shade trees, flowers, and vegetables. Galls are rounded with rough surfaces and are made up of corky tissue. They often occur on the stem near the soil line or graft union but can also form on roots or branches.

Leaf blisters and curls: Leaf blister and leaf curl are fungal diseases that cause distorted, curled leaves on many trees. Oak leaf blister can defoliate and even kill oak trees. Blisters are yellow bumps on the upper surface of the leaves, with gray depressions on the lower surface. Peach leaf curl attacks peaches and almonds. New leaves are pale or reddish and the midrib doesn't grow along with the leaves, so the leaves become puckered and curled as they expand. Fruit is damaged, and bad cases can kill the tree.

Leaf spots: A vast number of fungi can cause spots on the leaves of plants. Most of them are of little consequence. A typical spot has a definite edge and often has a darker border. When lots of spots are present, they can grow together and become a blight or a blotch.

Blackspot is a common disease on roses. The spots appear on the leaves and are up to 1/2 inch across with yellow margins. Severe cases cause leaves to drop.

Molds: Molds are characterized by a powdery or woolly appearance on the surface of the infected part. Gray mold, or botrytis, is a common problem on many fruits and flowers. It thrives in moist conditions and is often seen on dropped flower petals or overripe fruit. It appears as a thick, gray mold or as water-soaked, blighted regions of petals, leaves, or stems. In most cases it first infects dead or dying tissue, so removing faded flowers and blighted buds or shoots will control the problem. Peonies, tulips, and lilies can be severely damaged in wet seasons.

Powdery mildew: Mildews are one of the most widespread and easily recognized fungi. They are common on phlox, lilac, melons, cucumbers, and many other plants. Mildew forms a white to grayish powdery growth, usually on the upper surfaces of leaves. Small black dots appear and produce spores that are blown by wind to infect new plants. Leaves will become brown and shrivel when mildew is extensive. Fruits ripen prematurely and have poor texture and flavor.

Scabs: Scabs are fungal diseases that cause fruits, leaves, and tubers to develop areas of hardened, overgrown, and sometimes cracked tissue. Fruit scab can be a major problem on apples and peaches. Control by disposing of fallen leaves and pruning to increase air movement.

Smuts: Smuts are fungal diseases. They are most commonly seen on grasses, grains, and corn. Enlarged galls are soft and spongy when young but change to a dark, powdery mass as they age. Corn smut can form on kernels, tassels, stalks, and leaves. Smut galls ripen and rupture, releasing spores that travel through the air to infect new plants and overwinter in the soil, awaiting future crops.

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