

GERANIUM DISORDERS

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Geraniums are plagued by a number of diseases caused by bacteria, fungi, viruses and unfavorable environmental conditions.

Alternaria Leaf Spot--The symptoms of leaf spot are a water soaked area less than one millimeter in diameter on underside of leaf. By holding the leaf to light, small dark brown spots surrounded by yellow bands can be seen. The spots may coalesce to cover the entire leaf which may fall from the plant.

Bacterial Blight (Bacterial leaf spot, stem rot or wilt)--The bacterium can be found in leaves, stems and cuttings. The symptoms may be small water soaked spots in the leaves. These spots are about 1/16 to 1/8 inch in diameter and do not coalesce. The leaves can also wilt or hang from the plant for a week or two. The spots turn tan, brown or black and become hard and dry. Angular pie shaped sections develop from the spots between the veins. After the leaves become infected, the bacteria may invade the vascular tissues of the stem which will become brown in color. In the stem rot phase the vascular bundles become full of bacteria which can be squeezed from the stem. When the total plant is infected, the plant is grayish-green and limp looking. The plant eventually shrivels up. In the final stage, the plant may be topped with tufts of small green leaves on blackened stems.

Black Leg--This problem is caused by several fungi. The rot starts at the base of the stem and the affected plant dies. The

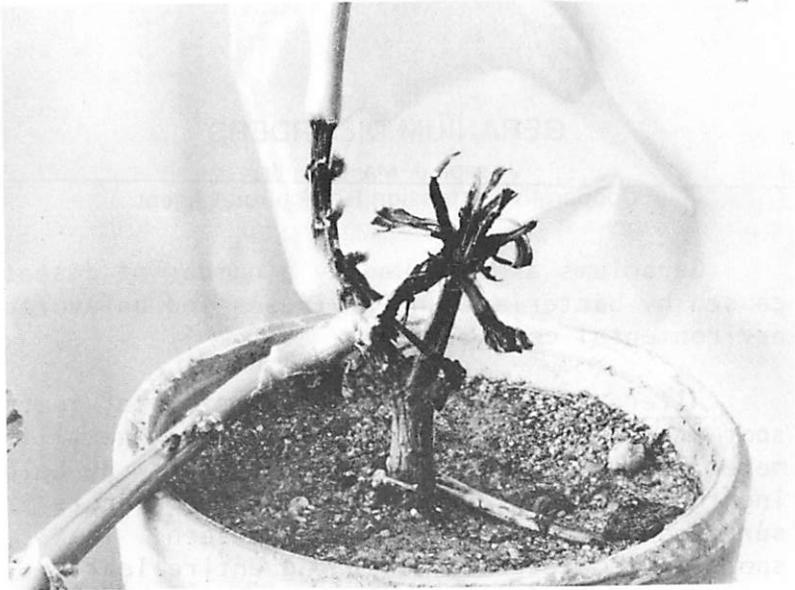


Figure 1. Black leg on geranium caused by Fusarium. Several fungi may cause similar symptoms.

entire stem and petioles may blacken, shrivel and rot (Figure 1). The wet, shiny coal-black appearance of the fungus infected area distinguishes this from Bacterial Blight which is dull brownish black and drier in appearance and Botrytis or Rhizoctonia which are also brownish.

Botrytis Blight--This fungus infects blossoms and stems of geraniums. If cool temperatures and adequate moisture are present, this fungus will grow in plant parts. Old petals are readily attached and may fall on leaves which are in turn affected. The spots on leaves or stems are usually brown in color and covered with "whiskers" bearing the spores of the fungus.

Crinkle or Leaf Curl--Young leaves are wrinkled and deformed with light spots, or leaves are slightly thickened. The light spots appear

translucent when held to the light. This virus is most severe in the winter months and plants, although somewhat stunted, outgrow the symptoms which are masked in the warmer weather.

Leaf Breaking--Leaves are reduced in size and veins are usually spotted with purple spots. This virus suppresses the formation of the zone on the leaf which is replaced by purple spotting along the veins. This is most severe in dark winter days. Long days promote healthy leaf structures.

Fasciation--Many short, fleshy, thick, aborted stems and leaves at the soil line (Figure 2). The plant is sometimes stunted and less vigorous.

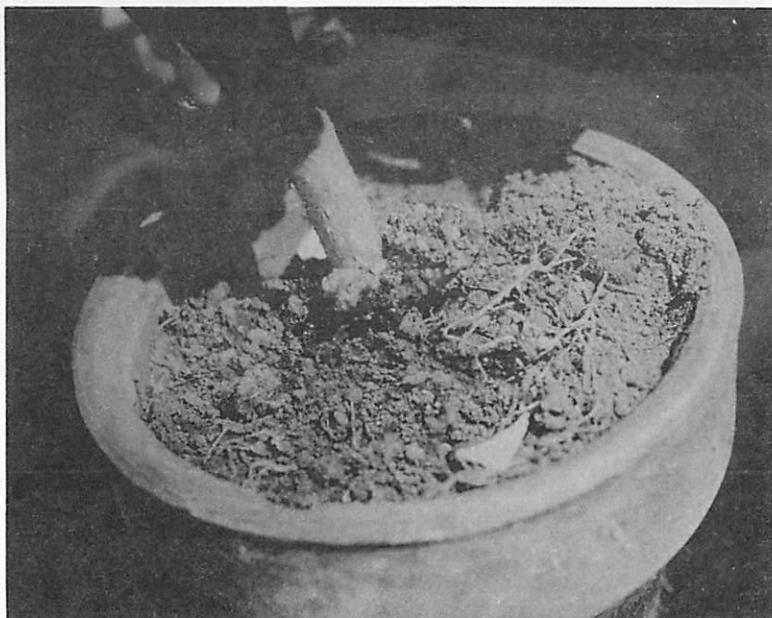


Figure 2. Fasciation caused by Corynebacterium fascians on geranium. In this picture it appears similar to crown gall caused by Agrobacterium tumefascians.

Oedema--This nonparasitic disorder is related to transpiration and soil moisture. The plant imbibes too much water and cells in the leaves rupture causing soaked spots on the underside of the leaves which dry and become corky (Figure 3). The problem occurs in late winter or early spring, especially when heavy soil mixes are used and ventilation is inadequate.

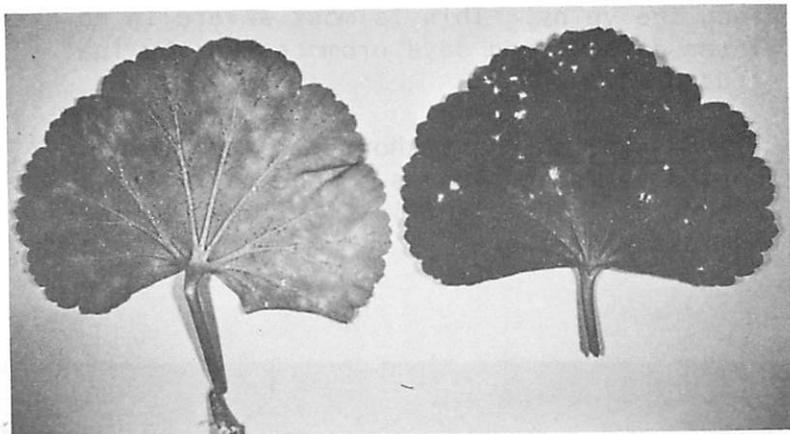


Figure 3. Oedema on geranium.

Rust--Rust colored "pustules" or circles appear on the underside of the leaf (Figure 4). This fungus survives in dry leaves as well as fallen leaves. It can reenter stomata if moist conditions persist.

Geranium problems are many. Observation of plants, recognizing symptoms, roguing infected plants and propagating only healthy cuttings will help keep geranium problems to a minimum.

Human nature what it is, slip-ups can occur.

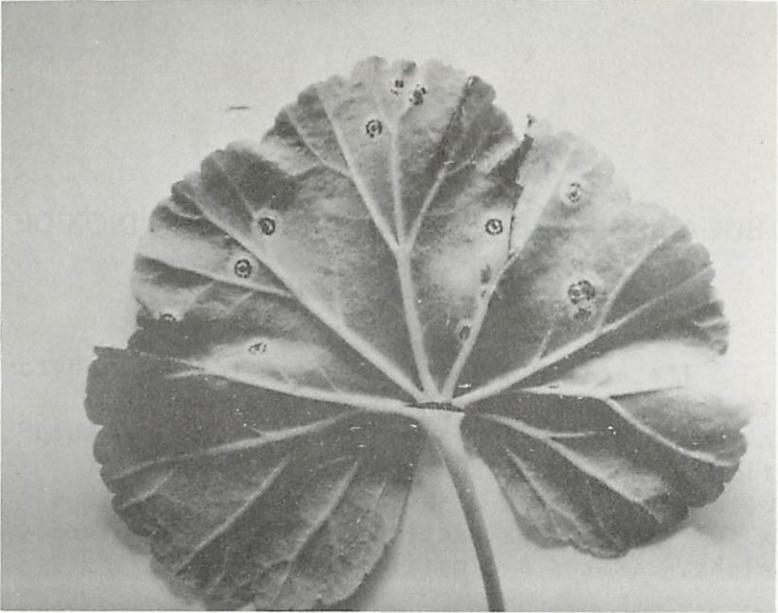


Figure 4. Rust pustules caused by *Puccinia pelargonii-zonalis* on geranium.