



This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

Cabbage

Black rot caused by *Xanthomonas campestris* pv. *campestris* is one of the most damaging diseases of crucifers worldwide. Yield and quality losses may be high when environmental conditions are conducive for disease development. Symptoms can appear on plants at any growth stage. On seedlings, cotyledons may turn black and drop off. On true leaves, lesions appear along the leaf edge as yellow, V-shaped spots, with the base of the V usually directed along a vein. As the lesions expand toward the base of the leaf, the tissue wilts and becomes necrotic. The infection may move up or down the petiole and spread through the stem into the roots. The veins of infected leaves, stems, petioles, and roots become black as the bacterium multiplies and shuts off the flow of nutrients to plant parts. When affected stems are cut crosswise, the vascular ring appears black. Yellow bacterial ooze may exude from cut tissues. The use of clean seed is important in preventing the disease. Seedling rates should not be too high as the dense foliage aids in disease development. Sprinkler irrigation should be avoided. Fields should only be worked when the foliage is dry. Transplants or seed should not be grown in a spot that has been in crucifers the last 3 years. Plants with visible symptoms should be pulled up and removed from the vicinity of the field. Deep plowing helps break down crop residue faster and should be practiced where practical.

Apple

What a nuisance! Adult Japanese beetles are 3/8 inch long metallic green beetles with hard, copper-brown wing covers. Five small white tufts project from under the wing covers on each side, and a sixth pair at the tip of the abdomen. These white tufts help to distinguish them from similar metallic green or coppery colored beetles. They feed on over 300 species of plants and can do serious damage. Japanese beetles feed in groups as a rule, starting at the top of a plant and working their way downward. They are difficult to kill. Sevin, malathion,

permethrins, and direct hits with insecticidal soaps will kill them. Grub control in the lawn reduces numbers as they generally fly only short distances to food. Traps if used should be located well away from plantings. Studies have shown that they can attract thousands of beetles that won't necessarily go into the trap, but feed on plants in the vicinity, thereby causing the homeowner to be in worse case than before.



Black rot

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Japanese beetle on apple

Rick Cartwright University of Arkansas Cooperative Extension



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Japanese snowball

Several members of the viburnum family are commonly known as Japanese snowball. Japanese snowballs are beautiful, deciduous shrubs which makes excellent specimen plants for a sunny shrub or mixed border. Japanese snowball grows well in sun to part shade and any moist soil. It transplants well, has a moderate growth rate and grows to a mature height and spread of 8 to 10 feet. The white flowers occur in ball-shaped clusters in late spring. This shrub is a personal favorite with its beautiful, spreading shape with lovely tiered branches clothed in dark green leaves, which turn reddish purple in the autumn. Japanese snowball is seldom seriously bothered by insects or diseases. Phoma leaf spot is a minor disease that is usually worse looking than damaging. Clean up fallen leaves. Spray with an ornamental fungicide.



Sherrie Smith University of Arkansas Cooperative Extension



Japanese Snowball

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Southern pea

Septoria leaf blotch, *Septoria pisi*, is usually considered a minor disease of pea. The disease is usually found first on lower leaves. Symptoms start as large yellow angular to round spots that turn brown with age. Tiny black fruiting bodies can be seen in the center of the lesions. Destroying pea stubble by cultivation or grazing helps reduce inoculum. Chlorothalonil and Quadris are labeled for peas.



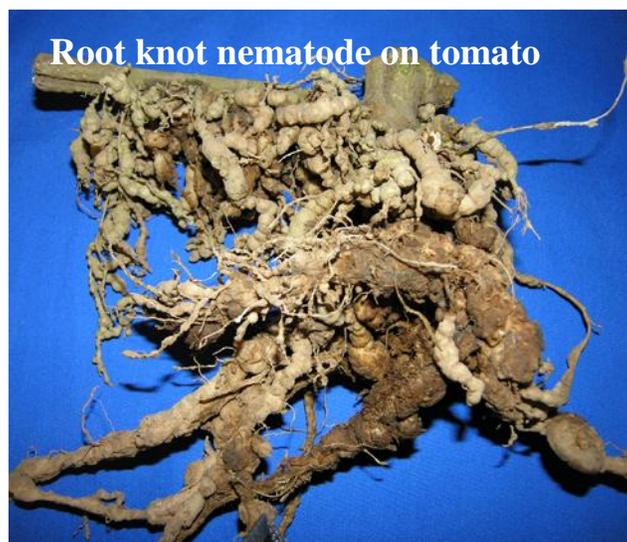
Septoria blotch

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Tomato excerpts from article by Ronnie Bateman

Root knot nematode, *Meloidogyne incognita*, attacks a number of field crops, vegetables and ornamentals. Above ground symptoms on tomato are a general stunting, and yellowing. Below ground, large knots and swellings appear on the roots. These galls are produced by plant responses to the nematodes feeding in the roots. If the nematode load is heavy, the plant may wilt and die during hot, dry weather. Control is achieved through the use of resistant cultivars, and crop rotation with grasses, marigolds, or onion. Soil solarization is helpful also. In late summer, the ground should be tilled, irrigated to good planting moisture, and then covered with clear plastic for six to eight weeks. Nematodes in the upper six to eight inches of soil will be destroyed as well as many other harmful organisms by the heat generated. Effectiveness of soil solarization can be improved by placing a soaker hose under the plastic so that the soil can be kept moist. The plastic can either be removed so a cover crop can be planted, or it can be left in place all winter to prevent erosion and allow the soil to warm up quicker in the spring.



Root knot nematode on tomato

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Soybean

We are seeing a number of soybean fields under stress at this time. The main culprits are root scald, high levels of salts, and Fusarium root rots.



Salt damage

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Root scald

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Fusarium root rot



photo by H.F. Schwartz, CSU