



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.

Butterfly bush

Cucumber mosaic virus (CMV) affects some 775 plant species world-wide. Many of our favorite ornamentals, as well as vegetables such as tomato, pepper, potato, eggplant, cucumber, melon, and bean are susceptible to Cucumber mosaic virus. Butterfly bush is one of the ornamentals susceptible to CMV. Extreme shoe stringing or elongation of leaf blades is the most common symptom. Infected plants may also be stunted and bushy with deformed, or downward turning and distorted leaves. Cucumber mosaic virus is transmissible through infected seed, and by the parasitic weed dodder, and in a non-persistent manner by many species of aphid. Infections can also persist on overwintering weed hosts. Virus is not curable. Management consists of using virus free seed, eradication of weed hosts, aphid control, and the use of resistant cultivars. Any plant with a confirmed virus should be removed from the planting to prevent spread of the virus to healthy plants.

Butterfly bush-Cucumber Mosaic Virus (CMV)



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Butterfly bush-Cucumber Mosaic Virus (CMV)



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Pansy

Pythium root rot can be very damaging to ornamentals, especially seedlings, cuttings, bedding plants, and potted plants. Symptoms are stunting, yellowing, wilting, slow growth, and death. Often damaged roots will dissolve in your hand when washed under a stream of water. Roots usually appear brown to black, and mushy. Sometimes the rotted outer core of the roots may be easily pulled off, leaving the white inner core. The rot may include crown or stem tissue as well as roots. Pythium root rot is only a problem on soils that stay consistently wet. Potted plants should never be allowed to stand in water. Too much nitrogen makes plants more susceptible. Good drainage and proper watering are the best defense against pythium infections. Use



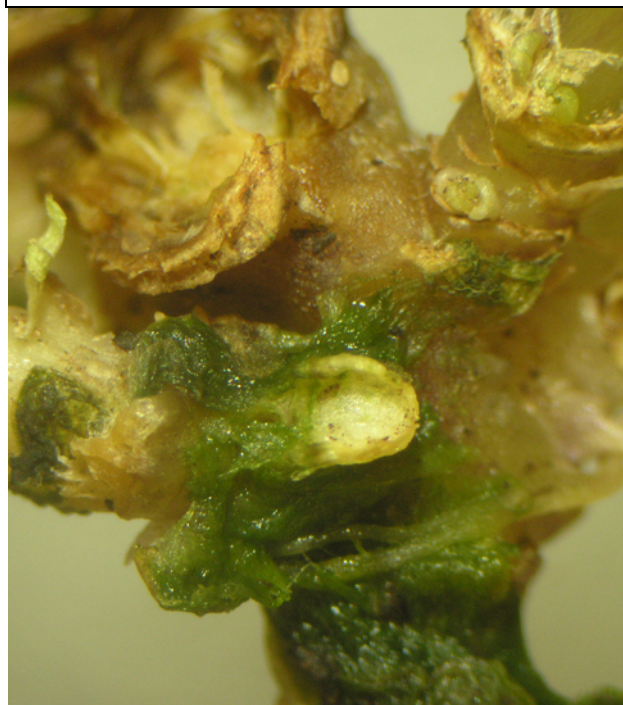
balanced fertilizers instead of high doses of nitrogen alone. Space plants to provide good air circulation. Clean up all crop debris at the end of the season. Many chemicals are labeled for control of pythium. However, they will be ineffective as long as the plants are subjected to prolonged wet conditions. Aliette, Subdue Maxx, Adorn, Hurricane, Fenox, Stature, and Segway are chemicals available to commercial operations. Homeowners generally find the application of chemicals to treat pythium root rot cost prohibitive, and must rely on cultural management alone.

Pansy Pythium root rot-*Pythium* spp.



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Pansy Pythium crown rot-*Pythium* spp.-note the algae growing due to excess water and soft brown discoloration of the crown.



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Cedar

Cedar-quince rust, caused by *Gymnosporangium clavipes*, has a life cycle similar to Cedar-apple rust. In the spring perennial, spindle shaped swellings on cedar produce masses of gelatinous orange-brown teliospores. The teliospores produce basidiospores which are carried to members of the rose family, such as quince, pear, apple, crabapple, and hawthorn. The fungus stops producing the basidiospores about 30 days after the apples stop blooming. Galls on both cedar and the alternate host can cause stems to die if they are completely encircled. Unlike Cedar-apple rust, cedar-quince rust is more likely to attack the fruit and stems than the leaves. Aeciospores develop in the fruit and stem lesions and are blown to cedars where the cycle



begins again. Each year the perennial rust galls become larger and more noticeable. Fruit from the alternate host infected with Quince rust are covered with protruding off-white aecia of the fungus. The fruit eventually dry out and drop from the plant. Old galls are dark brown to black in color. Prune out any galls found on alternate hosts junipers and cedars. During the winter, prune out all quince galls remaining on branches, and twigs of apples, crabapples, quince, hawthorn, and pears. Preventive fungicide applications may be required in locations where hawthorn and quince rusts are problems. Fungicide timing is similar to that for cedar-apple rust. Make the first application to valuable orchard and landscape plants when the orange telial galls on junipers become noticeable, (usually at flower bloom on rosaceous species), and make additional applications at regular intervals to protect newly developing growth. Applications of a triazole fungicide such as propiconazole, (Banner Maxx), myclobutanil, (Immunox), or triadimefon, (Bayleton, Strike, Green Light Fung-Away, Monterey Fungi-Fighter), at three-week intervals beginning shortly after bloom is effective in suppressing Quince rust.

Cedar Quince rust-on cedar twig-*Gymnosporangium clavipes*



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