



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.

Onion

Black Mold, caused by *Aspergillus niger*, is a common problem on onions during transit or storage. Symptoms are a black discoloration on the neck, shallow black lesions on the outer scales, and streaks of black underneath the outer scales. In extreme cases, the entire surface of the bulb turns black and shrivels. Infection usually starts in the neck, the fungus gaining entry through wounds as the tops break over or are cut at maturity. Infection may also occur through infected onion seed. Occasionally, there are no outward symptoms, but when a bulb is sliced in two, a black or gray discoloration is seen in the center areas of the bulb, usually extending from the neck to the center. Opportunistic bacteria will sometimes follow Black Mold infections causing a soft rot. Careful handling of bulbs to avoid bruising when harvesting, transporting, or storing, greatly reduces infection. Existing Black mold will not spread if onions are stored at 34°F to 59°F.

Onion Black Mold-*Aspergillus niger*



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Onion Black Mold-*Aspergillus niger*



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Onion

Smudge of onion is a fungal disease caused by *Colletotrichum circinans*. Smudge is more commonly found on white onions, but no varieties are immune. Symptoms are black circular lesions with concentric rings on the dried wrapper scales of the onions. The fruiting structures of the fungus have stiff bristles (setae) that may be seen with a hand lens. Smudge may induce premature sprouting of the onion in storage, as well as negatively impacting marketability due to the unsightly dark lesions. Control involves a multi-pronged approach. Crop rotations with at least 3 years between onion crops is recommended. Good field drainage, clean seeds and transplants, proper drying and storage reduce Smudge. Onions should be stored at 32°F with less than 70% relative humidity. Boscalid+pyraclostrobin (Pristine), Chlorothalonil (Bravo Ultrex, Bravo Weatherstik), and Pyraclostrobin (Cabrio) are labeled for use on onion.

Onion Smudge-*Colletotrichum circinans*



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Squash

A common and widespread disease of squash and other cucurbits is powdery mildew, caused by *Podosphaera xanthii*, previously known as *Sphaerotheca fuliginea*. *Erysiphe cichoracearum* also causes powdery mildew on cucurbits, but is less common. Symptoms usually begin on the undersides of crown leaves and on shaded lower leaves as white powdery spots or patches. Often, yellow spots form on the upper surfaces opposite the powdery mildew colonies. Eventually both surfaces of the leaves become covered with powdery mildew as well as stems and petioles. Badly infected leaves wither and die. Fruit production may be reduced in both quality and quantity. Dense plant growth along with low-intensity light and high relative humidity is favorable for initial infection. Dry conditions favor sporulation. The best defense is the use of resistant cultivars and the use of fungicides. Fungicide applications must begin at the first sign of disease. Fungicides containing trifloxystrobin (Flint 50WG), or tebuconazole (Folicur 3.6F), or chlorothalonil (Bravo Ultrex), or azoxystrobin (Quadris 2.08F), or boscalid+pyraclostrobin (Pristine), or wettable sulfur (Microthiol Disperss), are labeled for treatment of powdery mildew on squash. Homeowners may use a garden fungicide containing chlorothalonil.

Squash Powdery mildew-*Podosphaera xanthii*



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Squash Powdery mildew conidia-*Podosphaera xanthii*



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Squash Powdery mildew conidia-*Podosphaera xanthii*



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Green Bean

Root and stem rots caused by *Rhizoctonia solani* are common wherever beans are grown. *Rhizoctonia* may also cause damping off of seedlings, either preemergence or postemergence. Symptoms are small, elongate, sunken, reddish-brown lesions on hypocotyls and roots. Severe infections stunt the plant and reduce yields. As the lesions grow, hypocotyls and stems may be girdled, resulting in death of the plant. The pathogen overwinters as sclerotia or mycelium in the soil, or in infested plant debris, or on perennial plants. It may also be seedborne. Cultural practices such as the use of certified seed, treated seed, rotation with non-host crops, and the use of fungicides may reduce damage. Mefenoxam + PCNB (Ridomil Gold PC GR), trifloxystrobin + metalaxyl (Trilex 2000), or fixed copper (Basicop WP, Champ 4.6F, and Tenn-Cop 5E), are labeled for *Rhizoctonia* damping off. For root and stem rots, PCNB (Terraclor 75WP and Terraclor 4FI) may be applied in furrow at planting. Homeowners may use soil solarization and crop rotation in conjunction with good sanitation.

Green bean damping off- *Rhizoctonia solani*



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Green bean damping off-

Rhizoctonia solani



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