



## **Arkansas Plant Health Clinic Newsletter**

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### **Turf Snow Mold**

Pink Snow Mold (*Microdochium Patch*) caused by the fungus *Microdochium nivale* (formerly *Fusarium nivale*) typically occurs during cool to cold weather and is favored by snow cover. The disease gets its common name of Pink Snow Mold from the occurrence of spores in a pink mix of mycelium and sporodochia. Although common under snow-covered turf, Pink Snow Mold can occur year-round during cool, humid weather. Symptoms first appear as small water-soaked spots which turn orange-brown to dark reddish-brown before fading to light gray or tan. These spots are usually less than 8 inches in diameter with a water-soaked, gray-black margin. Under snow cover or in very wet conditions, spots may be covered with a fluffy white mycelium. As the snow melts, spots appear bleached white to tan, often with a pink margin. Snow Mold grows rapidly under overcast, wet conditions during temperatures ranging between near freezing and 60° F. when in excessively thatched turf that is growing slowly in unfrozen soil covered by snow. The disease is favored by repeated frosts, cold fogs, slow drizzling rains, high nitrogen levels, compacted soil, and matted foliage. There is some resistance to Pink Snow Mold with

Colonial Bent Grass. Certain cultivars of Kentucky Bluegrass are among the least susceptible. Cultural practices are the best method of limiting this disease. Avoid applications of Nitrogen in late fall. Continue mowing the turf as long as it is actively growing. Avoid excessive thatch. Aerate compacted areas. A soil pH of 6.5-6.9 and adequate levels of potassium will discourage Pink Snow Mold. In turf with a history of the disease, preventative fungicides should be used in late fall before leaf growth stops. Bio Advanced Science Based Solutions for Lawns; Scotts Lawn Fungus Control; Scotts Disease Ex; Bonide Infuse Systemic Disease Control for Lawns and Landscape; and Ferti-lome F-Stop for Lawn are labeled for homeowners for control of Snow Mold. Commercial applicators may use products containing azoxystrobin, or chlorothalonil, or iprodione, or mancozeb, or myclobutanil, or propiconazole, or triadimefen among others.

### **Pink Snow Mold-*Microdochium nivale***



**Photo by Keiddy Esperanza Urrea-Morawicki, University of Arkansas Cooperative Extension**

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## Pink Snow Mold-*Microdochium nivale*



Photo by Keiddy Esperanza Urrea-Morawicki, University of Arkansas Cooperative Extension

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## Tulip Bulb and Shank Rot

Several species of *Phytophthora* attack tulip bulbs. Bulbs that are planted in heavy, continually wet soils are most susceptible to infection. The zoospores of the pathogen are attracted to the bulb as soon as it produces roots. *Phytophthora* moves from the roots through the basal plate of the flowering stem. If this occurs early, no stem is produced. If infection of the flower stalk occurs after the stalk is up, no flower is produced because the stalk becomes rotted at the base (shanking). If a flower is produced, it will be of poor quality. The entire bulb becomes colonized with *Phytophthora* and rots in the ground. It is very important that tulips be planted in soils with excellent drainage. They should NOT be planted in a bed with a history of the disease. There are no chemical treatments effective for bulbs already rotted. Homeowners may use Actinovate Lawn and Garden Biological Fungicide as a preventative but will probably have to order it over the internet. Commercial growers may use Subdue Maxx, or Aliette, or Segway, or Stature, or Banrot, or Fenstop, or Hurricane, or Adorn, or Segovis, or Insignia, or Alude, or Compass O, or Strike Plus.



## Tulip *Phytophthora* Bulb and Shank Rot-*Phytophthora* sp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Tulip Fire

Tulip Fire, caused by the fungus *Botrytis tulipae*, only affects tulips. Leaves newly emerging from the soil may be distorted and twisted and wither. If leaves survive emergence, they may have brown lesions that under wet environmental conditions enlarge to large, blighted scorched areas, hence the common name "Tulip Fire." Small oval spots may appear on flowers. During wet weather, damaged leaves, stems, and flowers will become covered with a fuzzy, grey mycelial mat. Eventually, small black sclerotia (seed-like structures) form on the dead tissue.

These are the survival stage of the fungus and can persist for long periods of time in the soil and on debris. Tulips should not be planted for at least three years in a site where the disease has occurred. All bulbs should be checked carefully for signs of decay and the small black sclerotia. This is a very difficult disease to control, and chemicals are not always effective. It is more effective to plant in a different location. Do not save bulbs from an infected crop.

## Tulip Fire-*Botrytis tulipae*



Photo by Sandra Jenson, Cornell University, Bugnet.org



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## Tulip Fire sclerotia-*Botrytis tulipae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Tulip Fire leaf lesions-*Botrytis tulipae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Daffodil

Daffodils are among the earliest spring bloomers. We know spring is just around the corner when we begin to see their cheery flowers. It is frustrating when they fail to bloom. There are many possible reasons for failure to

set flowers. Improper fertilization or no fertilization for several years may prevent bloom. Daffodils need to be fertilized using a complete fertilizer, such as 5-10-10, at planting, when leaves emerge, and at bloom. High nitrogen fertilizers should be avoided as they encourage leaf production at the expense of flowers. Too much shade also inhibits bloom. Daffodils need at least six hours of full sun for best bloom. In crowded plantings, the bulbs may not be able to compete for available water and food with aggressively growing species. Soggy soil conditions promote bulb rots, hence no flowers, followed eventually by death of the plant. Viruses can also be a problem. Narcissus Yellow Stripe Virus and Narcissus Mosaic Virus will weaken the plant, causing loss of vigor and bloom. Symptoms of Yellow Stripe Virus are fine streaks of yellow the length of the leaves. Infected plants of most daffodil cultivars show yellow stripes on leaves and flower stalks, reduced bulb size, and eventually severe stunting; the chlorosis (yellowing) in some cultivars is less conspicuous than in others. Symptoms of Narcissus Mosaic Virus are white blotches on the yellow flowers. Viruses are not curable. Any plants with virus symptoms should be dug up and thrown away. Daffodils may also fail to bloom the first year after being transplanted as the bulbs are re-growing roots and trying to establish themselves. Another reason daffodils fail to bloom is an early heat wave that may shut down bulb replenishment too soon. The Plant Health Clinic occasionally receives a sample of daffodils with what is known as Bud Blast. Extreme environmental conditions, such as a hard freeze or hot spell at a critical time, may

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cause the buds to dry out and turn brown before opening. Drought conditions during the growing period may contribute to the problem. Slow-release fertilizers rich in potassium that are applied in the fall will help prevent Bud Blast. If this becomes a chronic problem in your garden, look for daffodils which are resistant to blast, such as: 'Tahiti', 'Unique', 'Sir Winston Churchill', and others. Occasionally, we hear complaints of daffodils failing to set buds altogether. This occurs when bulbs are set too shallowly. Shallow planting encourages the bulb to offset small bulblets that are too small to flower. Daffodils should be planted 6-9 inches deep and covered with several inches of mulch to protect against ground heaving during freezes. Many people buy a pot of blooming daffodils in the spring and leave them in the pot all year, exposed to extremes of heat and cold and not properly fertilized. By far, the most common cause of failure to bloom is cutting the leaves of the daffodils off too soon. The leaves should not be blocked from the sun by being tied in bundles or cut off until they lose their green and turn yellow. The bulbs need the foliage for about six weeks after bloom to replenish the bulb. Finally, bulbs that have been growing in the same spot for many years need to be lifted, divided, and replanted. The time for dividing and replanting is after the foliage has yellowed in the spring. Separate the clumps into individual bulbs and replant them 6-9" deep and 6" apart. Don't water them until fall if you replant immediately, as this can cause bulb rot. If you can't replant them immediately, dry the bulbs in the shade, store in mesh bags, and replant in the fall.

### **Daffodil Bud Blast-Abiotic**



Photo by Carla Vaught, formerly of the University of Arkansas Cooperative Extension

### **Daffodil bulbs too crowded to bloom-Abiotic**



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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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.

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