



## Watch for Bulb Diseases

*Dr. Nick Goltz, UConn Home & Garden Education Center; UConn Plant Diagnostic Lab*

Gardens in New England come to life in spring thanks, in large part, to bulbs! Spring bulbs are reliable, perennial color-bringers and seem equally at home in landscapes and containers. Daffodils (*Narcissus spp.*), grape hyacinth (*Muscari spp.*), and tulips (*Tulipa spp.*), are just some of the bulb plants that grace our gardens this time of year, and they remind us that the blooms of summer alliums aren't far behind. While these plants might seem effortless to grow, they are not without their fair share of disease issues!

One common disease of bulbs we see here in Connecticut is *Fusarium* wilt and bulb rot. Bulbs generally prefer average to loamy soil with good drainage. When planted in clay soils or following long periods of rain in early spring, however, they are susceptible to rot diseases caused by fungal pathogens such as those in the genus *Fusarium*. The various wilt and rot diseases caused by *Fusarium* species can be destructive and sometimes difficult to control. Symptoms include wilting, brown lesions at and below the soil line, vascular discoloration, bulbs that are soft or spongy, and, especially with garlic (*Allium sativum*) and relatives, a purple-red discoloration of bulb tissue. Plants affected by this soil-borne fungal disease do not recover, so it is wise to be proactive with management and prevention.



*Purple streaking and weak root systems are symptoms associated with Fusarium rot. Ed Kurtz, budwood.org*

If your bulb plants do not emerge properly in the spring or emerge but wilt soon after, fail to flower, or display other symptoms associated with root rot diseases, pull them up and throw them away! *Fusarium* and similar fungal pathogens often survive the winter in the soil on diseased plant tissue from the year before, so it is important to keep your garden clean and to not compost diseased plant tissue, as most home compost bins do not reach temperatures necessary to kill pathogens. Fungi like *Fusarium* thrive in soggy soils, so do your best to prevent flooding and standing water where bulbs are planted. There are no fungicides that will completely control or eradicate *Fusarium* in a landscape, but some are helpful with preventing infection of healthy plants. Remember to always wear protective equipment and follow label rates and instructions if you choose to apply fungicides.

Another common fungal disease of bulbs grown here in the Northeast is *Botrytis* gray mold or tulip fire. Fungi in the genus *Botrytis* cause disease symptoms on many different host plants. Though it is often called “gray mold” when associated with other plants, for tulips, the disease is usually called “tulip fire” due to the spots it causes on leaves and flowers, often with dark borders resembling a burn.

*Botrytis* fungi are very common and are capable saprophytes, meaning they feed on dead or decaying tissue and contribute to nutrient cycling in the environment, but can be problematic in managed landscapes. To cause disease, *Botrytis* fungi must first colonize and get nutrients from dead or declining plant tissue, such as fading flower petals, over-ripened fruit. Once the fungus is established in its host plant, it becomes more aggressive and invades healthy plant parts, causing brown lesions and decay.



*Symptoms of tulip fire, Botrytis tulipae, include leaf spots on leaves and flowers, often with dark borders resembling burn injury, lending the common name. Sandra Jensen, Cornell University, Bugwood.org*

To prevent *Botrytis* gray mold and tulip fire, try to encourage good airflow around your plants. Many people plant their bulbs closely together, like eggs in a carton, but this can make bulbs susceptible to tulip fire over time when treated as perennials. Dig up your tulips when they appear crowded, and each year when dealing with a potential disease issue. Inspect bulbs before you plant them again, and discard bulbs that are not firm, discolored, or otherwise do not appear healthy. Rotate to new locations and avoid planting consecutively in the same spot if there has been a history of disease there.

If you have questions about growing bulb plants, are dealing with a plant health issue, or regarding other gardening topics, feel free to contact us, toll-free, at the UConn Home & Garden Education Center by emailing [ladybug@uconn.edu](mailto:ladybug@uconn.edu). You can also call us at (877) 486-6271, visit our website at [www.homegarden.cahnر.uconn.edu](http://www.homegarden.cahnر.uconn.edu), or contact your local Cooperative Extension center.