

# GROWERTALKS

## Columns

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## Growing With Griffin Preventative Fungicides for Fall-Planted Flower Bulbs

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As autumn draws near, many growers prepare to plant fall flower bulbs. These beautiful crops are susceptible to a few common diseases. Fortunately, early sanitation, combined with good culture and preventative fungicide treatments, can greatly reduce the risk of disease.

*Pictured: Trichoderma viride is a fungal pathogen that infects tulip roots.*

Sanitation efforts should begin prior to planting. Eliminating existing pathogens through proper sanitation greatly reduces the risk of disease development in the pending crop. Pots, flats, trays, tools and rooting rooms should always be thoroughly cleaned and sanitized prior to use. Note that this is a three-step process: physical cleaning to remove larger debris, chemical cleaning to eliminate fine debris and residues, and sanitation to destroy pathogens. This is also a good time to ensure that the environmental controls in the production spaces are in good working order. Key environmental factors, such as relative humidity and temperature in storage and rooting rooms, can impact flower bulb health.

Give some thought to the media used for planting. Well-drained soilless media is required for success. The optimum pH range for soilless media is 5.5 to 6.5, with low soluble salts. Furthermore, the media should be moist prior to planting bulbs with an ideal soil temperature of 50 to 63F (10 to 17C). Lightweight mixes may be vulnerable to pots tipping over at maturity. Some bulb suppliers advocate adding some sand to the potting media. If this method is used, be certain to use horticultural quality sand from a reputable supplier to avoid the risk of introducing pathogens.

A watchful eye and careful physical inspection of bulbs upon arrival is the next step in disease management. Bulbs have often been in transit for several weeks; how they were packed can impact quality. Upon opening your shipment, inspect for wet packaging and strong odors, both of which indicate a greater need for bulb inspection. Carefully inspect bulbs for any signs of visible mycelium, colored spores, soft rot, discolored bulb

scales or a sour odor. If any signs or symptoms of disease are detected, be sure to notify your bulb supplier immediately. Do not plant infected bulbs.

Bulbs dipped or drenched with fungicides prevent many bulb diseases from developing and are strongly recommended. Bulb dips for Fusarium, Penicillium and Rhizoctonia can be accomplished using properly labeled thiophanate-methyl-based fungicides, such as Cleary's 3336. Kleengrow is also effective as a bulb dip. Product labels provide instructions for concentrations, dip times and use patterns.

Some growers prefer a fungicide drench over a bulb dip. Products labeled for Rhizoctonia and Fusarium control include Terraguard, Medallion and thiophanate-methyl-based fungicides, such as Cleary's 3336. Biofungicides, such as RootShield, also can be effective. The granular products should be incorporated into media pre-planting. Biofungicides in the wettable powder form may be used for bulb dips, dusts or drenches depending on the product label. Consult product label's treatment recommendations and rates.

*Trichoderma viride* is a fungal pathogen that infects tulip roots. Infected plants become symptomatic in the greenhouse, not in the cooler. *T. viride* occurs on the lower portion of the roots. Watch for "glassy" looking roots, which can become covered in white fungal hyphae. In cases of advanced disease, the roots begin to rot and turn light to dark brown in color. Advanced infection does not respond to treatment. As a preventative measure, apply Kleengrow as a media drench at a rate of 38 oz. per 100 gal. when the tulips are first removed from the cooler. Apply a second Kleengrow drench two weeks later at a rate of 25 oz. per 100 gal. Strong sanitation, a sharp eye at planting and use of preventative fungicides will help you avoid most diseases in bulb crops, setting you on course for production of a high-quality crop.

Read and follow all label directions. Not all products are registered for use in all states or for all crops. Products other than those mentioned may also be safe and effective. **GT**

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