

Greenhouse Pest Message, February 25, 2025
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Cutting dips are frequently used to apply insecticides and rooting hormones, and in some cases they are used to apply fungicides. This method of application has many advantages, such as ease of use, uniformity, and efficiency. One of the main disadvantages of cutting dips is the potential to spread pathogens in the dip water. If even a small number of cuttings with bacteria or fungal sporulation are dipped, the pathogens easily spread to the following submerged cuttings. Bacteria that cause soft rot are notorious in dip water. Some growers have also been hesitant to use dips due to the worker protection standard and safety for workers.

There is limited research on using fungicide dips to control diseases on flower seedlings and cuttings. As protection against incoming insects, the insecticide dip method provides control (see links below). Limited work has been done showing effectiveness as a fungicide treatment. Dips have been used to control diseases and nematodes in the past, but the treatment is more common on flower bulbs, liners, and as a postharvest flower shelf-life treatment. For example: hot water bulb dips have been used to control nematodes on narcissus, tulips, and gladiolus. This is a treatment where the dip water is heated at a very specific temperature to control nematodes without damaging the crop. For control of stem nematode (*Ditylenchus*), the hot water dip had to be made once the bulbs went dormant, and timing and accurate temperature control were important. Presoaking bulbs in water + surfactant before the dip for 3 h improved the effectiveness of the hot water treatment. Cost and equipment availability may prohibit this treatment. In other work, dips in a fungicide were effective to control *Fusarium* basal rot of bulbs (narcissus, tulips, iris) when applied within 2 days after digging and the effectiveness went down with delays of 7 or 48 days post digging. Dips in systemic fungicides were used on pine tree liners before storage to control root rots in the field, however, the very hardy plants could withstand the high rates tested.

Postharvest dips to extend cut flower life have also been tested to prevent disease and improve quality. Researchers in Poland looked at dipping asparagus fern in four different preparations and conditioners to extend postharvest shelf-life but found no consistent improvement in green color or vase life. With roses postharvest life has been extended and *Botrytis* blight reduced after the roses were dipped in calcium chloride at 2g/L. Hydrangea blooms showed reduced disease postharvest after the flowers were dipped in fludioxonil and the biofungicide *Aureobasidium pullulans*.

Generalizing on fungicide dip control for all ornamentals is difficult, as the dip treatment is less common with fungicides. Some potential concerns include: is the material systemic; is the plant material waxy; is the fungus you are treating for present; and will phytotoxicity develop? It is clear from previous work that timing is very important in order for the treatment to be taken up into the plant tissue (dormant vs non dormant bulbs). An especially susceptible plant stage may

also respond better to treatment than a healthy plant (i.e. postharvest flowers). If the fungicide dip is being used for preventive management there may be a different result than if it is for curative treatment. Similarly, the length of the dip, and whether or not the plant material has roots or is an unrooted cutting may affect the performance and uptake.

Be sure to read the label prior to applying a fungicide dip. Some fungicide labels do not list dip application, and a heavy spray to seedling flats or rooted cuttings is used instead. The dip method requires strict attention to sanitation and disinfecting holding containers. Even if you are dipping a fungicide, water contamination can still occur.

Some **best management practices** include:

- Inspect incoming plant material and discard any diseased plants.
- Ensure cuttings and seedlings are healthy and not wilted when dipped.
- Mix fungicides and adjuvants into the water and ensure completely suspended.
- Dip the cuttings to ensure they are completely submerged and uniformly wet.
- Allow cuttings to air dry before sticking.

Additional references:

This article discusses dip methods to apply various insecticides and rooting hormones:
<https://www.growertalks.com/Article/?articleid=23997>

Dips for insect control: <https://www.e-gro.org/pdf/2024-13-05.pdf>

Recommendations from Bioworks: https://bioworksinc.com/wp-content/uploads/Dips_CleanupUp_CA.pdf



Photos: Dipping and draining technique.



Photo: Seedling that could benefit from a fungicide dip. Photo by L. Pundt.