

TOXICITY OF GROWING MEDIUM DRENCH FUNGICIDES¹

We have recently received reports of plant stunting and leaf burn that appear following fungicide-drench-treatment of growing media. The situations are somewhat perplexing because the same treatments by the same growers at other times did not cause any trouble. The offending products seem to be metalaxyl (Subdue) and etridiazole (Terrazole, Turban, Banrot) products.

Recent evidence suggests that many of these growing medium drench fungicides interfere with bacteria involved in the nitrification cycle in growing medium. In fact, a formulation of etridiazole was once sold as a fertilizer additive to slow the conversion of ammonium fertilizers used on field crops. The use of these products on our greenhouse crops results in similar activity. Under certain conditions, ammonium can build up in treated growing media. This can reach toxic levels and may explain the resulting phytotoxicity.

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Why the recent reports of damage? We suspect that the hot weather we have been having has resulted in our crops drying out more quickly between irrigations. These drying episodes may increase ammonium concentration in the growing medium solution, resulting in the stunting and leaf burn.

Slight stunting and slowing of plant growth has routinely been noted in our research with growing medium drench fungicides over the years. It is for these reasons that we caution growers to use growing medium drench fungicides carefully and with proper dosage calculation. We generally advise using the lowest labeled dosage in a preventive program. Higher doses may be warranted in curative situations. Frequency of application should be minimized as well. Most of our recommendations specify monthly applications. However, many growers apply drench fungicides less frequently, especially during seed germination or on bedding plant crops. A watering-in treatment at transplanting and a second treatment a month or so before finishing the crop seems to be a good program for many.

The method of application of growing medium drench fungicides is also important in avoiding phytotoxicity. Always apply the products properly diluted in sufficient water to wet the growing medium thoroughly to the bottom of the container. Use them when the crop is in moderate need of an irrigation. Do not treat excessively dry potting medium. Do not use concentrates and then water in later.

¹ From: Ohio State Flower Grower's Hotline, volume 1, September 1988.

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