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Tips on PGR liner dips

Tips on plant growth retardant liner dips

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The practice of dipping plugs or liners into a solution of plant growth retardant (PGR) before transplant is increasingly being used by growers to control plant height of aggressive annuals. This technique is commonly referred to as a liner dip or liner soak, but it applies to seedling plugs as well. Liner dips are particularly useful if a grower is interested in regulating the initial growth of plants in mixed containers. Aggressive species can be treated with a liner dip before transplant, which can allow less aggressive, untreated plants to become established before aggressive plants take over.

In the past few years, the Floriculture Research Team at MSU has conducted experiments to identify suggested rates of chemicals containing uniconazole (the active ingredient in Sumagic and Concise) and paclobutrazol (the active ingredient in Piccolo, Bonzi and Paczol). We've placed liners in PGR solutions for approximately 30 seconds, and then transplanted the liners several hours later or the following day. Plants were grown until flowering, and then plant height data was collected. Additional studies have been performed at the University of Florida that provides additional useful information.

There are several factors to consider when choosing a liner dip concentration, including:

1. Chemical
2. Plant species
3. Magnitude of the desired response
4. Media moisture content
5. Growing conditions and location.

During spring conditions in Michigan, typical rates of paclobutrazol used as a liner dip on aggressive vegetative annuals range from 4 to 8 ppm, including crops such as petunia, scaevola, argyranthemum and calibrachoa, and 8 to 12 ppm for verbena. Lower rates are generally used for products containing uniconazole, such as 1 to 2 ppm for petunia, 2 to 4 ppm for calibrachoa, and 3 to 4 ppm for argyranthemum, scaevola and verbena. These rates generally provide a long-lasting response (six to eight weeks), and lower rates should be used if a shorter response period is desired. In locations with warmer, sunnier weather, higher rates may be needed to achieve the desired response.

Finally, the media moisture content can have a significant impact on the uptake of the liner dip solution, and thus the plant response. If the media is moist, not much PGR solution will be absorbed by the media, and thus a smaller response will be attained. Conversely, if the media is very dry, much more PGR solution will be absorbed, producing a stronger response. We suggest that growers ensure that the media of liners and plugs is slightly moist, and not wet or dry, at the time of application. This will ensure a more uniform response within the plug tray and from one application date to another.

For much more information, you may wish to review two articles that appeared in GPN magazine:

PGR Liner Dips On Bedding Plants, by Matthew Blanchard and Erik Runkle, Michigan State University.

Reducing PGR Liner Dip Variables, by Rebecca Schnelle and Jim Barrett, University of Florida.

As with all plant growth retardants, we strongly encourage growers to conduct their own trials on a small scale to determine the most appropriate rates for their crops and growing conditions.

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