GROWERTALKS

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Using Florel in Belgian Mum Production

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The 2010 garden mum season is approaching quickly. This is the best time to revisit last year's growing schedules and make the necessary adjustments. Most growers experienced some type of premature budding on their mums two years in a row due to cold and rainy summers. Last year, some early varieties flowered two to three weeks earlier than expected and markets were saturated with short-bloomed mums in early August. Any sign of excessive color on garden mums at the wholesale level is a sign of trouble; most customers refuse to pay for fully opened, short-lived flowers. Rather than hope for normal growing conditions, growers have tools available to prevent these weather-related variables. Florel appears to be a key to success among some growers who deliver uniform mum crops year after year, regardless of weather conditions.

Getting started

Variety selection should be the first step. In general, Belgian mums appear to resist early budding. Branching power and a high level of stress tolerance allow them to be more predictable than other varieties under cold and rainy conditions. Belgian mums also respond well to Florel in preventing early budding.

When it comes to garden mums, the first several weeks after planting will determine the final outcome of the crop. This is the vegetative stage when plants increase in size rapidly and need high levels of moisture, nutrition and light. As a result of breeding, the new generation of garden mums needs only a few leaves in order to initiate terminal buds, even under long days. To prevent any premature budding in propagation and during the first weeks after transplanting, growers have the option of using a 4- to 6-hr. night interruption and keeping the temperature above 68F (20C) or applying Florel and maintaining a high nutrition level in the growing media.

Cuttings, liners, lights and Florel

Most of the large- and mid-sized growers purchase unrooted cuttings and stick them directly into the finished pots or in plug trays. Small growers prefer rooted liners and purchase them from rooting stations that specialize in plug production. The summer-shaded mums for July and early August sales are always started and finished inside; later crops for mid August and early September are finished outside as well as inside. The majority of natural-day crops are planted directly outside from rooted liners.

The effect of a single 500 ppm Florel treatment applied during the plug stage, seven days before transplanting (on the left). Untreated plants on the right. Picture taken on August 20.

Growers who specialize in shaded crops receive plant material early in the season and use night interruption from the time the cuttings are stuck until the time they begin using black cloth. Using lights combined with higher night temperatures inside the greenhouse works well to prevent early budding. In this case, no Florel is necessary. In fact, one additional week of shading is needed to bring them to flower.

The natural-day crops, on the other hand, are more vulnerable to weather conditions. Garden mums planted or moved outside too early are subjected to cold nights or marginally short days in places like southern Florida. It's rather difficult to light a large number of plants outside, so Florel could be used as an inexpensive alternative in preventing premature budding. Be aware that Florel could restrict growth when combined with cold temperatures in the North, so it's best to wait until mid June before planting mums outside.

Unrooted Belgian mum cuttings for natural-day crops should always be stuck under lights, regardless of the season. As an additional insurance, 500 ppm of Florel should be applied on Day 10 after sticking when cuttings develop their first roots, five to six days after transplanting into the final container, and then every 14 days until two weeks before the desired flower initiation date or seven to eight weeks before first color date. Natural-season mums initiate in mid July, so avoid spraying Florel after July 1 to prevent flower delay.

Growers who receive rooted cuttings should check with their suppliers if night interruption and Florel are included in their rooting process. Most rooted liners are delivered in boxes, so plants are kept in dark and somewhat stressful conditions for several days. This could be enough to trigger flower initiation even if the cuttings were lit. Plugs that were treated with Florel in propagation have a better chance of staying vegetative after transplanting.

In most cases after receiving rooted liners from an unknown source, growers can apply 350 ppm of Florel upon arrival and 500 ppm 14 days later in the finished container, but no later than July 1. Florel application will not remove visible terminal buds, so a soft pinch might be needed in this case. Liners that look wilted or stressed should be allowed to recover before Florel is applied.

Florel should be sprayed to the point of run-off in the morning or late afternoon so the foliage stays wet for three to four hours. This ensures the plants absorb enough of the active ingredient. Fill a spray tank with cool water (less than 75F/24C) to reduce the amount of ethylene released from the spray solution and add a spreader to the spray tank to prevent water droplets. Since Florel is not systemic when applied as a spray, try to obtain uniform coverage on the plants. If the treated plants dry off within four hours of the application, lightly mist the foliage to re-activate the Florel. Apply only a light misting to prevent washing the Florel off the foliage. Florel will photo-degrade rapidly if exposed to high-intensity sunlight, so apply early in the morning or late afternoon. For best results, the pH of the Florel spray solution must be between 3.5 and 4.5. There is an acid in the Florel concentrate that will reduce the pH of the spray solution, but it may not be adequate when filling the spray tank with high alkalinity water. When needed, add a buffering solution, such as citric acid, pHase5

or Indicate5, to reduce the pH of the water to 5.0 before adding Florel to the spray tank.

Florel is an excellent tool for managing premature budding on Belgian mums only if used in combination with proper nutrition and scheduling. Garden mums are heavy feeders and growers should apply 300 to 400 ppm of nitrogen from phosphorous-rich fertilizers in the first weeks after transplanting, when irrigation frequency is lower and nutrition requirements increase rapidly. Growers who don't have prior experience with using Florel on garden mums should start with one application during the plug stage and use a second application shortly after transplanting no later than July 1 for natural-day crops. **GT**

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