

# Garden Mum Cultural Tips

---

*Richard J. McAvoy*

*Assistant Professor and Extension Specialist  
Greenhouse Crops*

In recent years, a few new techniques have been added to the old reliable and long-used method of garden mum production. These cultural practices have been developed to reduce cropping time and/or the amount of labor invested in pinching the fall crop. Late plantings with two cuttings, fast cropping and the use of Florel as a branching and scheduling agent represent the most important new developments in garden mum production. In this article I will first review the basics of fall garden mum production in containers and then address these new cultural techniques.

## **Early Crop Care is Vital to a Good Finish**

As with most crops, the way mums are handled when they first arrive and the amount of stress they are subjected to during the early stages of development will have a dramatic effect upon the final product. Plants that are allowed to wilt at initial transplant tend to branch poorly, and growth is reduced throughout the cropping cycle.

Cuttings should be planted as soon as they arrive. If this is not possible, they can be stored at 33° to 40°F for several days. Check cuttings before storing to make sure they are not dehydrated. If cuttings are dry, water prior to storing.

Moisten potting media before planting, and water immediately after transplant. This step is critical to establishing a good root system, good early crop vigor and satisfactory branching. Repeated irrigations are generally best for settling-in newly transplanted cuttings. A liquid feed applied at transplant will help stimulate early crop vigor. Use a 15-15-15 or 20-20-20 formulation at a rate of 200 ppm N.

Do not allow newly transplanted cuttings to wilt. If necessary, mist crop frequently during the first few days following transplant to avoid water stress. This is especially critical for

crops planted under summer heat conditions in late June and July.

### **Media, Fertilization and Irrigation**

Use a well-drained medium. Most mums are grown outdoors, and it is important that excess water from irrigation or rain drains from the pot. A pH in the 5.5 to 6.0 is ideal for soilless media, and 6.0 to 6.5 is best for soil based media.

Mums respond best to 1-1-1 fertilizer formulations such as 15-15-15, 20-20-20 or 14-14-14. A constant liquid feed program (250 ppm N) can be used to produce a fine fall crop, however, most growers find that a slow-release program is more convenient to use. Liquid fertilizer should be delivered directly to each container through a drip system. Overhead delivery of liquid fertilizers is wasteful. Slow-release fertilizers, formulated to release over a three- to four-month period, must be reapplied halfway through the crop. Apply 1 tsp per 6" pot one to two weeks after transplant and apply the second dose in five to seven weeks. Many Connecticut growers find that a single dose with an eight- to nine-month formulation is adequate to finish the crop.

Avoid overhead irrigation late in the day. If foliage is wet during the evening hours, a grower can expect problems with disease, especially late in the crop when nights are cool. Water stress late in the crop can be used to induce early flowering, to harden the plants and to control plant height.

### **Pinching and Scheduling**

Plant cuttings for a regular fall crop any time from early May to mid-June. If a large final product is desired, such as a two-gallon container, plant cuttings in early to mid-May. If growing a six-inch mum, plant before mid-June. Early plantings require more pinching than later plantings. Typically mums are pinched two to three times during the crop, but some growers pinch as many as five times. The initial pinch should be done after mums produce 1" to 1 1/2" of new growth. This usually takes place seven to 14 days after planting; the exact time depends on the weather conditions. Remove the top one-half inch of new growth with each pinch. Subsequent pinches are made after two to four inches of new growth is produced or at approximately two- to three-week intervals.

The last pinch should normally occur in early to late July. Garden mums require six to seven weeks to flower following the last pinch. Therefore, plants pinched no later than July 4 will flower in mid- to late August. Pinching up to July 20 or later (i.e. July 30) will delay flowering until mid- or late September.

### **Premature budding**

Flowering in garden mums is not totally controlled by day-length. Stress, in the form of cool nights or low water and fertilizer levels, will slow plant growth and cause mums to develop flower buds sooner than they would under more favorable growing conditions. With some cultivars, flower buds may even be present on cuttings. Growers need to understand how stress affects bud development in order to optimize crop response.

To prevent premature budding, developing mum plants must be well watered and well fertilized (high nitrogen). With cultivars that develop terminal buds prematurely, use a hard pinch after planting and then make sure the plants are fertilized and watered adequately. If vigorous growth is maintained, premature budding will not be a problem. If cool nights in June cause premature bud formation, pinch off the buds and continue to water and fertilize the crop.

### **Spacing**

Spacing will typically range from 12" to 24" centers. Large plants in large containers require more space than mums in small pots. For 6" pots, space mums on 15" to 16" centers. Fast crop mums in 6" pots can be spaced on 12" centers. Space 8" pots on 18" to 24" centers. In the field, mums are spaced 18" to 24" in rows with 30" to 36" between rows.

### **Plant Growth Regulators for Height Control**

B-Nine and Bonzi can be used to control mum height. Spray treatments are applied two to three weeks after the last pinch (when breaks are 1 1/2" to 2" long), and applications can be repeated two weeks later if necessary. Do not apply plant growth regulators after buds develop to pea size. Use 2,500 ppm B-Nine or 50 ppm Bonzi. At these rates, Bonzi will provide more height control than B-Nine, 10% to 20% on average. The exact response will vary from cultivar to cultivar.

### **Scheduling with Florel**

Florel is a plant growth regulator. Applications of Florel cause flower buds to abort and stimulate lateral branching. Therefore, Florel can be used in place of a pinch to stimulate break development and to delay flowering. For example, with a regular two-pinch crop, a grower may stick cuttings on about June 1, pinch on June 22 and apply a second pinch in mid-July for a mid-season flowering date. Using Florel instead of a pinch, a grower would stick cuttings on the same date, apply Florel on about June 22 and apply a second application of Florel on July 6 to reach the same mid-season flowering date.

Mums normally require six to seven weeks to flower following a pinch. With Florel, an additional three to five days may be necessary. To produce mums that flower in mid- to late August, pinch no later than July 4 or apply Florel no later than July 1. For late-flowering mums, pinch no later than July 20 or Florel no later than July 15.

### **Fast Cropping Fall Mums**

The fast crop is designed to save time and labor. Rooted cuttings are planted in mid- to late July on a tight spacing (i.e. one cutting per pot with pots on 10" to 14" centers). Plants are not pinched, and no plant growth regulators are applied. Plants are fertilized and watered immediately and then on a regular basis to push the crop along. Salable mums are produced in nine to 10 weeks.

### **Late Plantings with Multiple Cuttings**

Another fast crop technique involves planting two cuttings per pot during the first week in July. Plants are given a single pinch, seven to 14 days after planting and finish off the size of a regular two-pinch, single cutting crop. Flowering time is the same for a regular crop that is last pinched in mid- to late July. The production scheme requires twice the number of cuttings but involves about one-third the pinching of a regular crop. The late planting date eliminates the work load in May and June and reduces the incidence of premature budding that occurs during cool nights in early June.

## Scheduling Mums in Baskets

Mums can be grown in Belden or moss-lined baskets. An 8" Belden basket requires eight cuttings; 10" Beldens require 10 cuttings. A 10" moss basket requires 13 cuttings.

Cuttings are planted during the last week in June or the first week in July. Cuttings are pinched once, approximately two weeks after transplant. Growth can be controlled with B-Nine, applied at a rate of 2,500-3,750 ppm starting two weeks after pinching and continuing as needed until buds reach pea size. This schedule will produce a flowering basket in late September.

For earlier baskets, plant cuttings during the first week of June and take a pinch no later than July 1. For larger baskets, stick cuttings in mid-May, pinch once on about June 5 and take a second pinch in early to mid-July.

## Varieties

Not all mum cultivars are equally suited for all cropping strategies. Use the following tables to select the most reliable cultivars for each application.

### Fall Mum Cultivars Best for Fast Cropping.

<i>White</i>	<i>Yellow</i>	<i>Pink/ Lavender</i>	<i>Bronze</i>	<i>Coral</i>	<i>Red</i>
Ballerina	Allure	Camelot	Dark	Grenadine	Bravo
Encore	Anna	Debonair	Grenadine		Buckeye
Frolic	Cream	Emily	Dark		Red Re-
Hekla	Frolic	Lancer	Triumph		markable
Illusion	Donna	Lynn	Denise		
Linda	Fortune	Megan	Ginger		
Nicole	Goldmine	Naomi	Grace		
Tolima	Holly	Stardom	Mirage		
White Stardom	Jessica	Stargazer	Remark-		
	Legend	Sundoro	able		
	Sunny	Symphony	Robin		
	Moming	Tinkerbell	Sandy		
	Target		Sarah		
	Yellow		Shelley		
	Illusion		Tanaga		
	Yellow		Triumph		
	Triumph		Viking		

**Fall Mum Cultivars Best for Containers.**

<i>White</i>	<i>Yellow</i>	<i>Pink/ Lavender</i>	<i>Bronze</i>	<i>Coral</i>	<i>Red</i>
Encore	Anna	Adom	Bandit	Grenadine	Bravo
Frolic	Cream	Debonair	Dark	Serenade	Buckeye
Hekla	Frolic	Emily	Grenadine		Mingopher
Illusion	Donna	Lynn	Dark		Red Re-
Linda	Fortune	Megan	Triumph		markable
Nicole	Goldmine	Naomi	Denise		
Tolima	Holly	Small	Ginger		
	Jessica	Wonder	Grace		
	Legend	Stardom	Minnautumn		
	Sunny	Stargazer	Mirage		
	Morning	Sundoro	Remark-		
	Target	Symphony	able		
	West Point		Robin		
	Yellow		Sandy		
	Illusion		Sarah		
	Yellow		Shelley		
	Triumph		Tanaga		
			Triumph		
			Viking		

**Fall Mum Cultivars Best for Baskets.**

<i>White</i>	<i>Yellow</i>	<i>Pink/ Lavender</i>	<i>Bronze</i>	<i>Coral</i>	<i>Red</i>
Encore	Allure	Debonair	Dark	Grenadine	Bravo
Frolic	Anna	Emily	Grenadine		Red Re-
Hekla	Donna	Lynn	Dark		markable
Illusion	Goldmine	Megan	Triumph		
Linda	Jessica	Stardom	Denise		
Tolima	Sunny	Stargazer	Grace		
	Morning	Sundoro	Remark-		
	Yellow		able		
	Illusion		Sandy		
	Yellow		Sarah		
	Triumph		Shelley		
			Tanaga		
			Triumph		