GROWERTALKS

Features

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Are Your Perennials Blooming in the Pot?

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Perennials continue to be a popular choice for both the amateur and professional gardener for many reasons. Perennials offer a nearly unlimited choice of shapes, sizes and textures. There is a perennial available for nearly every location and every need. The availability of flower types, colors and forms is nothing short of amazing, as well.

However, as opposed to their annual counterparts, most perennials only bloom for a relatively short period of time. Whether they are naturally spring, summer or fall bloomers, most perennials flower for approximately four to eight weeks in the garden. When grown in a pot in the greenhouse, the bloom window is even shorter. Add this to the fact that most perennials require a cold treatment to bloom and scheduling can become complex. Done properly, however, it doesn't have to be difficult.

The old-school philosophy for growing potted perennials was to place them in a minimally heated greenhouse or cold frame and they would bloom when they wanted to. Unfortunately, "when they want to" oftentimes is not when the customers are in the garden center. Perennial plants without blooms often cannot catch the eye of the eager gardener like a flowering annual can. Sure, a showy label can help, but there is no substitute for a bloom. By following a few guidelines, your perennial crop can be in bloom when your customers are in your garden center.

This article will focus on obtaining predictable blooms on perennial varieties that are not daylength sensitive for flowering. This includes most perennials as well as aquilegia, dianthus and salvia.

Step 1

The first and most-important step to predictable blooms is the liners you use. There are three factors you must consider when purchasing (or producing) the plugs you will use for your finished perennial program.

Vernalization. The vast majority of perennials require a cold treatment to trigger flowering. Some perennials will flower without a cold treatment. More and more perennials are being bred for first-year flowering, but all perennials benefit from the vernalization process. Not only will they bloom more consistently, most will have larger flowers and more of them.

However, not all cold treatments are the same. University research indicates a temperature of around 40F (4.4C) for six to eight weeks is sufficient to overcome juvenility and trigger flowering in nearly all perennial species. To ensure a truly predictable flowering response when forced, the cold treatment needs to be longer and colder, like what they would receive in the garden. Eight to ten weeks at 32F (0C) average temperature helps make perennials predictable.

Maturity. A well-bulked plug will respond to the extensive cold treatment process more consistently than a lightly rooted, less-mature liner. The plug should have a thick stem or crown and the roots should completely fill the plug cell. Since many perennials continue to grow and mature during the vernalization process, cold treatment is most successful when accomplished in a greenhouse with natural light.

Plug size. In our years of experience, we have found that a 50 plug is a suitable and economical-sized liner for a 4-in. up to a 1-gal. pot. For larger containers, two or three 50 plugs or a 32 should be used. For some perennials, a 72 cell may not be large enough to reach proper maturity in the plug and would not be as predictable to bloom.

Variety	Weeks to Bloom
Aquilegia Songbird Mix	6-7
Armeria Joystick Red	7-8
Bellis Habanera Rose	5-6
Campanula Champion series	7-8
Gaillardia Arizona Sun	8-9
Dianthus Amazon Neon Duo	8-9
Dianthus Star series (two 50 plugs per gal.)	6-7
Myosotis (two 50 plugs per gal.)	5-6
Poppy Champagne Bubbles series	5-6
Salvia May Night	6-7

Step 2

The second step to predictable blooms is scheduling when to buy them in and when to pot them. To do this, you obviously need to know when you want your perennials in flower. Let’s say you have a spring open house scheduled for the week before Easter (Week 16 for 2011) and you want your perennials ready. Referring to the Bloom Schedule (see Table 1), count backwards the number of weeks it takes for the slowest variety to bloom. This would be the gaillardia and Dianthus Amazon Neon Duo at eight to nine weeks to bloom (WTB). You would therefore want to receive your vernalized liners during Week 7, or the week of February 14.

But what about the aquilegia or the salvia that take only six to seven WTB? You could receive these on a separate ship date if you can reach the minimum order from your supplier, but this can be a hassle and may cost you more in shipping. A more efficient way of handling scheduling would be to get your entire order shipped at once, then wait to plant these varieties until the appropriate week. If the plugs are dormant, which they should be, then it will not affect them. Just keep the trays in an area at 32F to 40F (0C to 4.4C). This area could be in a greenhouse (be aware you may need to vent on sunny days), in a cold frame, or even in a cooler or garage. Make sure you check them for water regularly. Then at Week 9, plant and force these for Week 16 blooms.

Step 3

The third and final step to predictable blooming perennials is the actual forcing. This is the one step where you can save some money on fuel. But resist the temptation if you want your perennials to be in bloom for your open house before Easter. Remember the old-school philosophy of forcing perennials with minimal heat? Well, this is the “new-school” approach. Temperature is fundamental. Force them warm and force them quick. This will get even the most-dormant perennials to wake up quickly and consistently.

Where many growers have problems is when their perennials are potted and placed in an unheated house. The plugs will sit inactive, cold and wet, increasing the chance for loss from root rots and botrytis. When they do begin to come out of dormancy, it’s usually not uniform and leads to an uneven blooming crop. When forced with warm soil temperatures, dormant perennials will begin to show signs of activity within a few days. Roots will quickly become active and less susceptible to pathogens, and the crowns will begin to swell and green up.

Plant each variety on the corresponding plant week to get blooms for your target date. In my example above, the gaillardia and Dianthus Amazon Neon Duo will be planted the week of February 14, the aquilegia the week of February 28 and so on. As far as growing media goes, everybody has their own preferences and needs, but a peat-based media with little or no bark seems to give the most vigorous growth and development. Maintain a pH of 5.5 to 6.0 for the majority of perennials. Some species such as aubrieta, hollyhock and echinacea prefer a slightly higher pH of 6.2 to 6.5. Once planted, place in the greenhouse and turn the heat up.

The first week after planting, it’s essential to maintain a night temperature of 68F to 70F (20C to 21C), and then no less than 68F (20C) for the second week. The goal is to achieve a soil temperature of 65F (18.3C) minimum. Day temperatures must be no less than 68F to 70F (20C to 21C) the first week. If it’s sunny, the temperature can be allowed to rise to 75F to 78F (24C to 25.5C) before venting. This will help warm the soil and retain heat at night. During the second week, day temperatures can be lowered to 66F to 68F (19C to 20C), but still allowed to rise into the 70s as weather permits. If growing on the floor, it can be beneficial to set the trays or pots on risers. This will make it easier to keep the soil temperature up since the ground will tend to draw the heat from the pot, especially if the greenhouse has been cold.

After two weeks, most perennials will have come out of dormancy and are actively growing; regular fertilization can begin per crop requirements. Day and night temperatures can be reduced to 65F (18.3C) during the third week, and then to 60F (15.5C) by the fifth week. After five weeks, adjust temperatures according to crop development. Once the crop has set flower buds, temperatures can be dropped slightly,

and when you have color, temperatures can be reduced to 45F to 55F (7C to 13C) for holding. This can help provide larger blooms and more vivid color.

Many perennials are very responsive to negative DIF. Using warm nights and cooler day temperatures, especially in the morning, can help reduce stretch, giving you a more compact and higher-quality plant. As perennials break dormancy they can grow very quickly. Begin using negative DIF as necessary after three weeks with a drop of five to 10 degrees before sunrise. A greater negative DIF can be used, but some crops can be adversely affected, such as some long-day perennials. Watch for a future article in *GrowerTalks* in which we'll discuss perennial varieties requiring long days to flower.

If you've done your work correctly and followed these guidelines, your perennials will be blooming in the pot right when you want them to be—when your customers come through the door! **GT**

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