

Adding a Perennial Crop: The Logistics and The How-Tos

In your ongoing search for new crops, try adding a perennial rotation.

Perennials mix well with many bedding plants and production can be much easier than you might think.

By Paul Pilon

A decade ago, only a handful of growers were commercially producing perennials, and most of them were not even considered greenhouse operations; they were classified as nurseries. Nurseries have usually been thought of as woody plant producers, growing such commodities as trees and shrubs. But today, the lines between nursery and greenhouse production are blurring because each year more greenhouse operations are producing and marketing perennial crops.

This spurt of recent popularity has created opportunities for many operations to get involved and to take advantage of the fastest-growing sector in floriculture. There are at least 5,000 plant species in production today. Many growers are forcing perennials to bloom out of season to increase sales at the retail level (color sells), and many of these varieties will bloom later the same year at the "right time." This means that perennials can be marketed as value-added products, as they usually provide years of enjoyment in the landscape. There is a trend toward growing in a smaller-size container, such as a 3-inch pot, and displaying perennials across from annual flats at the garden center. As perennials become annualized, they are taking away from the traditional bedding plant's market share.

ADDING PERENNIALS TO PRODUCTION

Perennials can easily be added into current production schedules for many greenhouse operations. There are many varieties such as achillea, coreopsis and veronica that can be grown from a plug to a shippable size as a 5-inch or smaller container in six weeks or less. Some varieties such as astilbes, daylilies and hostas can be finished in less than eight weeks when planting bareroot stock into containers. Many more varieties, including campanula, echinacea and lavender can be finished from plugs in less than 10 weeks.

Growing perennials may be somewhat intimidating at first. However, by applying the same principles used for producing greenhouse crops and choosing plant varieties that fit with current production schedules, growing perennials can be easily accomplished.

Many varieties will be of shippable size but will not be flowering at the time of shipping. This is one aspect of perennial production that bedding plant producers and consumers must overcome. The producer must supply adequate information on the care tags and provide adequate color pictures or signage to help sell these often not-in-flower varieties. The con-

sumer needs to know what to expect and when, otherwise they are unlikely to purchase even the most desirable varieties.

BACK TO BASICS

Successful perennial production is similar to the production of most greenhouse crops. It requires practicing sound fundamentals. The key factors are: beginning with high-quality plant material (plugs, liners or bare-root); providing adequate media and nutrition; ensuring the proper growing environment (light, temperature, air circulation and crop spacing); maintaining insect and disease programs and crop scheduling.

There are numerous reputable suppliers of plugs, liners and bareroot. Each supplier will usually provide a variety of sizes and product lines. Generally, as the size of the starter material increases, depending on the variety and container size, less time is required to finish the crop. Some suppliers will offer material that has been vernalized prior to shipping to the finishing grower — material that has had the proper chilling requirement for flowering. Be aware, depending on the time of the year, many of the varieties shipped may arrive in dormant form. Do not be alarmed by their apparent dead appearance, as the plants will quickly break dormancy and resume normal growth.

Many commercial blends of growing media used for greenhouse production are also ideal for perennial production. The primary purpose of the medium is to support the plant and to provide adequate air, moisture and nutrients to the roots. Obtaining media from a reputable and consistent source is very important to the outcome of all crops. For optimum plant growth, the total porosity of the media should be around 50 percent. Half of the total porosity, or 25 percent, should be air while the other half should be water. To some degree, it does not necessarily matter what components are combined in a growing media as long as the proper porosity is achieved. Many growers use bark, peat, perlite and rice hulls as their primary components. Other components often include vermiculite, compost, sand or mineral soil.

Usually, growers deliver nutrition to their crops by 'liquid feeding' or using controlled-release fertilizers (CRF's). If a liquid fertilization program is used, supplying a solution containing 50-100 ppm from a balanced fertilizer at every watering will be sufficient for adequate growth of most varieties. It is also beneficial to provide microelements if they are not already in the water-soluble fertilizer. CRF's are often used by incorporating into the growing

media or by topdressing on top of the media of each container. The primary brands of time-release fertilizers are Nutricote, Osmocote and Polyon. Depending on the media components, the low or medium rates of CRFs usually provide sufficient amounts of nutrients. If there is a high percentage of bark in the media, a higher rate of CRF is most often needed to provide adequate nitrogen to offset the decomposition of the bark. For most perennials, the pH needs to be maintained around 5.5-6.3.

For spring sales, perennials are usually grown at temperatures averaging 65° F or less. Growers often start production at an average of 65° F for the first two weeks to ensure plant establishment. Then, they gradually reduce the average temperature to 55-60° F for the remainder of production. Temperatures below 55° F will drastically slow development of most crops.

Provide adequate air circulation by using horizontal air flow (HAF) fans to provide both more uniform temperatures and air movement through the plants. This will decrease the chance of disease from such pathogens as Botrytis and Powdery Mildew.

Generally speaking, greenhouse-grown perennials are subject to the same insects and diseases as most greenhouse crops. The insect pests include aphids, thrips, whiteflies, spider mites and fungus gnats. If grown in shade structures or outdoors, additional insect pests would include leafhopper, grasshoppers, slugs, spittlebugs, black vine weevils, leafminers, nematodes and Japanese beetles. By recognizing these pests and implementing preventative — and in some cases curative — measures, insect pests can usually be kept in check. Some of the most common diseases are Botrytis, root rots, leaf spots and powdery mildew. Other potential diseases include downy mildew, bacteria, rusts and viruses. By following good cultural and sanitation practices, many of the disease organisms will not become threatening to plant growth. There may be crops or situations that require a fungicidal treatment or program, but there is no substitute for sound cultural and sanitation practices.

Crop scheduling, planning and record keeping are all critical to a successful perennial program. Early planning will help to determine which crops will best fit your operation, what size starter material is necessary to finish the crop, and when to receive plant material. When scheduling, such factors as the container size, the type of starter plant material, the anticipated finish/shipping date, growing temperatures and cultivar should be considered. Unless you have actually grown these crops in the past, use scheduling information from outside sources only as guidelines to develop your production schedules. Keep good records throughout the growing season. It is important to record such factors as temperature, light levels, fertility, watering, insect or disease problems, spacing and

Scheduling the 'Green Sale' of Perennial Quarts When Transplanting From 128-Size Plugs

4 to 6 Weeks

Achillea 'Paprika'
 Achillea 'Moonshine'
 Alcea 'Chaters Double'
 Anthemis 'Kelwayi'
 Aquilegia 'Biedermeier'
 Arabis 'Snowcap'
 Aster 'Purple Dome'
 Bellis 'Pompenette Mix'
 Buddleia 'Pink Delight'
Campanula montana 'Blue'
 Coreopsis 'Sunray'
 Coreopsis 'Moonbeam'
 Delphinium 'Magic Fountain'
Dianthus barbatus
Digitalis mertonensis
 Doronicum 'Magnificum'
 Gaillardia 'Burgundy'
 Geum 'Mrs. Bradshaw'
 Lamiastrum 'Herman's Pride'
 Leucanthemum 'Snow Lady'
 Liatris 'Kobold'
Lunaria biennis
 Lupinus 'Minarette Mix'
Lychnis chalconica
 Monarda 'Blue Stocking'
Myosotis sylvatica
 Papaver 'Brilliant'
 Physostegia 'Pink Bouquet'
Polemonium caeruleum
 Primula 'Pacific Giant Mix'
Ranunculus repens
 Salvia 'Rose Queen'
 Sedum 'Autumn Joy'
 Solidago 'Golden Fleece'
Stachys byzantina
 Veronica 'Giles Van Hees'
 Veronica 'Sunny Border Blue'
Waldsteinia ternata
 Armeria 'Splendons'

7 to 8 Weeks

Boltonia 'Snowbank'
Campanula carpatica
 Coreopsis 'Baby Sun'
 Echinacea 'Magnus'
Euphorbia polychroma
 Gaillardia 'Goblin'
 Heuchera 'Palace Purple'
 Houttuynia 'Chamelon'
 Iberis 'Alexander's White'
 Kniphofia 'Early Hybrids'
 Lavandula 'Grosso'
 Lavandula 'Munstead Strain'
 Lobelia 'Queen Victoria'
Lysimachia nummularia
Oenothera missouriensis
Perovskia atriplicifolia
 Platycodon 'Shell Pink'
 Salvia 'May Night'

finish times to develop reproducible results year after year.

THE PERENNIAL CHALLENGE

Perennial production differs from traditional bedding and potted plant production because there is usually less flowering. Many of the bedding plant cultivars have been selected or bred to flower by the time they reach the point of sale. There is no question color sells, and the annual growers have been capitalizing on the public's impulse to buy plants in color for years. For spring sales, most growers market perennials as green, nonblooming plants. Some perennial varieties, such as bellis, myosotis and primula, do flower early enough for spring sales. Many varieties such as heucheras and hostas are marketed for the appearance of the foliage, in addition to any flowering, and fit very well for spring sales. Most perennials are sold in the nonflowering form and rely heavily on color tags and point-of-purchase signage and information to market them.

'Green' perennials can be produced quicker than blooming perennials, which may allow for multiple crops in the same grow-

ing space. This will yield more sales on a per square foot basis. Nonflowering perennials are often grown in smaller-sized containers, such as 3-inch or 1-quart pots, at high plant densities. This helps to make them more profitable than producing larger-sized containers. Producing nonflowering perennials also allows growers to market varieties that would be too tall if they were in bloom or long-term crops that need more time to reach maturity for blooming.

PERENNIAL FORCING: THE NEXT GENERATION

Selling out-of-season, blooming perennials is the next wave rippling through the floriculture marketplace. Due to the undisputed fact that a majority of plant purchases are made on impulse, perennial growers and retailers are trying to capitalize by providing adding color to perennial displays.

Growers who attempt to force perennials out of season are faced with some challenges and must understand the general requirements for flowering. Each variety has a set of requirements that

must be met to produce flowers. Many plants have a juvenility requirement: they must reach a certain size or have a certain number of leaves before they will flower. Vernalization, or a cold treatment, at a certain temperature and duration, is required for many varieties. Most plants also have a photoperiod requirement: they must receive a certain number of hours of light each day to produce flowers.

To achieve flowering, growers must ensure that these requirements are met. The starter material used can often be purchased as vernalized plugs, which have the juvenility and cold requirements already achieved. Growers can also use coldframes or coolers to provide the cold treatment prior to forcing. To provide the proper photoperiod, it is often necessary to use supplemental lighting to extend the day length or to supply night interruption for long-day plants (plants that require at least 14 hours of light per day for flowering). Perennial forcers should anticipate a longer production time and usually a greater space requirement, as compared with growing nonblooming perennials. These extra steps require some additional planning, organiza-

tion and expense. If the grower is rewarded with a higher price and the sell-through is increased due to impulse buying, the potential reward may be greater than the extra costs.

ARE THEY RIGHT FOR YOU?

Is perennial production for every operation? The answer clearly is no. Successful perennial production can be achieved by most operations that collect enough information and use sound growing practices. The quality of the perennials being sold is increasing and the speculations from retailers are tightening. Those who produce them are under pressure to keep the quality high and the costs down. It is becoming a tighter marketplace for perennial growers, but great opportunities still remain. For the first-time producer, there will be some challenges and perhaps even some risks; however, with dedication, knowledge and sound growing practices, perennial production can be successful and rewarding. GPN

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