Spice up your container combinations

Increase consumer interest in your combos by adding color beyond flowers with bright and bold foliage.

By Kellie Walters, Allison Hurt, and Roberto Lopez

Fig. 1. Combination containers incorporating nontraditional foliage annuals

With the increased popularity of container gardening, growers often look for ways to differentiate their tried-and-true combinations. A simple way to do this is to forgo flowers and add color with foliage. Foliage annuals grown for their brightly colored or variegated leaves are generally considered to be "tough" during extreme conditions, due to reliance on leaves instead of flowers for aesthetic appeal. Another advantage for consumers is that because flowers are not the focal point of the plant, they do not have to be deadheaded. The key is choosing foliage plants that fit into production with your other spring bedding plants.

Fortunately, plenty of species and cultivars are becoming readily available. In this article, we will highlight a few less commonly grown foliage annuals, and outline tips on keeping them vegetative and compact during production.

Species spotlight

When you think of adding colorful foliage to a container, most people think of coleus, helichrysum, and plectranthus. While coleus cultivars vary in vigor, growth habit, and color, diversifying into other sun loving foliage plant species may set your combination planters and baskets apart (**Fig. 1**).

There are many cultivars of Joseph's coat

Fig. 2A-E. Use Joseph's coat 'Red Threads,' Joseph's coat 'Brazilian Red Hots,' Persian shield, bloodleaf plant, and variegated potato vine (left to right) to spice up mixed containers.

Joseph's Coat 'Brazilian Red Hots'

Fig. 3. Once flowering (left), growth and visual appeal of foliage annuals is often reduced.

(*Alternanthera*) available on the market with varying colors and leaf shapes. For example, 'Red Threads' is a narrow-leaved cultivar with long burgundy-green leaves that curl slightly, exposing a deep burgundy underside. 'Red Threads' has a highly branched habit, making it a breeze to grow, requiring a pinch only if desired. In contrast, 'Brazilian Red Hots' has a wider leaf with pink variegation and branches less than 'Red Threads' (**Fig. 2A & B**).

Persian shield (*Strobilanthes dyerianus*) has purple foliage that often appears iridescent (**Fig. 2C**). With an upright habit, it can be used to contrast with bright flowers in combinations, or as a "thriller" or focal plant. Though specific cultivars are not generally grown, the species is exceptional itself.

Bloodleaf plant (*Iresine herbstii*) is a strikingly vigorous plant with blood-red to burgundy foliage. The species stands out with its large waxy leaves and light red veins to contrast with its darker leaf blade (**Fig. 2D**). Its vigor makes it suitable for large containers in combination with other vigorous species that can handle high concentrations of PGRs or a great candidate for liner dips to control growth.

In combination planters, "spiller" plants are used to cascade down the side of a pot. Common spillers include dichondra (*Dichondra argentea*), lysimachia (*Lysimachia nummularia*), and sweet potato vine (*Ipomoea batatas*). While dichondra and lysimachia can add interest with their silver and gold foliage, respectively, sweet potato vine comes in a variety of colors, but is often vigorous and overtakes companion plants. A lesser-used alternative is potato vine (*Solanum jasminoides*). Though slow growing during the beginning of production, potato vine grows quickly once established. With variegated varieties available (**Fig. 2E**), it is a great alternative to sweet potato vine.

GROWING TIPS

How to: prevent flowering

One of the main goals when growing foliage plants is to keep them vegetative. Because foliage plants are grown for their brightly colored or patterned leaves, flowers are usually not desired. When flowering, vegetative growth is often stalled, producing an unsightly plant (**Fig. 3**). Also, some species have flowers with an unpleasant smell. To better control and prevent flowering of these foliage plants, we conducted an experiment to determine the photoperiodic responses of Joseph's coat, bloodleaf plant, Persian shield, and variegated potato vine.

We grew plants under a 9-hour photoperiod or extended the day to 10, 12, 13, 14, or 16 hours, or a 4-hour night interruption (NI) with ~2 $\mu mol \cdot m^{-2} \cdot s^{-1}$ of red, white, and far-red light or red and white light from light-emitting diodes (LEDs) lamps.

We determined that Joseph's coat 'Red Threads', Joseph's coat 'Brazilian Red Hots', and bloodleaf plant are short-day plants requiring a daylength of

Joseph's Coat 'Red Threads'

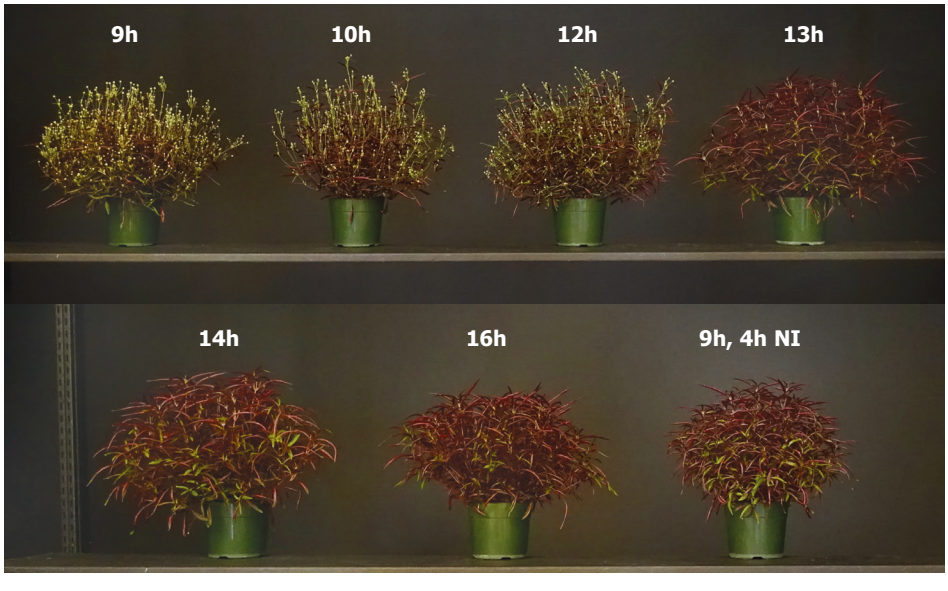

Fig. 4. Joseph's coat 'Red Threads' grown in photoperiods ranging from 9 hours to 16 hours and 4-h night interruption

Fig. 5. Stalled growth and flowering of Persian shield during production

14 hours or greater to inhibit flowering (**Fig. 4**). Joseph's coat 'Red Threads' has very small flowers, however the flowering plants exhibit a more open habit than those in the vegetative state. On the other hand, Joseph's coat 'Brazilian Red Hots' stalled once flower buds initiated (**Fig. 3**). Bloodleaf plant became unsightly once it began flowering; it had reduced vegetative growth and unpleasant and pungent flowers. Both Joseph's coat cultivars and bloodleaf plant flowered quickly when grown under 9, 10, or 12-hour photoperiods, while flowering was delayed slightly when grown under 13-hour photoperiods.

Variegated potato vine flowered throughout the experiment with some of the liners having flower buds at transplant. However, photoperiod did not seem to influence flower initiation, and flowering did not significantly inhibit vegetative growth.

Many growers report that flowering of Persian shield is an issue during production. Although the flowers of Persian shield are showier than the other species, when flowering, plants often stall and become unsaleable (**Fig. 5**). In the first replication of our study, none of the plants flowered. However, in the second replication of the study, some plants in every photoperiod treatment flowered while others remained vegetative. Since there were no differences in flowering responses between photoperiod treatments, but differences in replications, we hypothesize that juvenility or some other environmental factor may influence flowering of Persian shield. Given that this is an issue during production, we plan on further investigating flowering of Persian shield.

How to: control height

Keeping foliage plants compact is often a struggle during production because species like bloodleaf plant are aggressive and can elongate very quickly. During production, growth can be controlled in a number of ways such as applying plant growth regulators, pinching, or manipulating the light environment. Lamps that emit red and far-red light are often used because the red to far-red ratio is important in inducing the flowering response of long-day plants. However, far-red light can induce the shade avoidance response, promoting internode elongation and unsightly stretched growth (**Fig. 6**). Therefore, we added a night interruption treatment to our experiment that provided only red and white light. We determined that flowering of the short-day plant Joseph's coat 'Red Threads' and 'Brazilian Red Hots', and bloodleaf plant is inhibited by LED fixtures containing red and white light just as well as LEDs containing red, white, and far-red light. Therefore, to both inhibit flowering and reduce elongation of short-day plants, forgoing lamps with far-red light is a viable option (**Fig. 6**).

Take-home message

There are many foliage annuals available on the market to add interest and diversity to combination planters. The key is to keep the plants vegetative and compact. To do this, provide a photoperiod of at least 14 hours to inhibit flowering of short-day genera. Consider forgoing photoperiodic lamps that contain far-red light to keep plants compact, as red and white light are sufficient for these short day plants. However, be cautious of removing far-red light from photoperiodic lighting of other long-day annual bedding plants. GM

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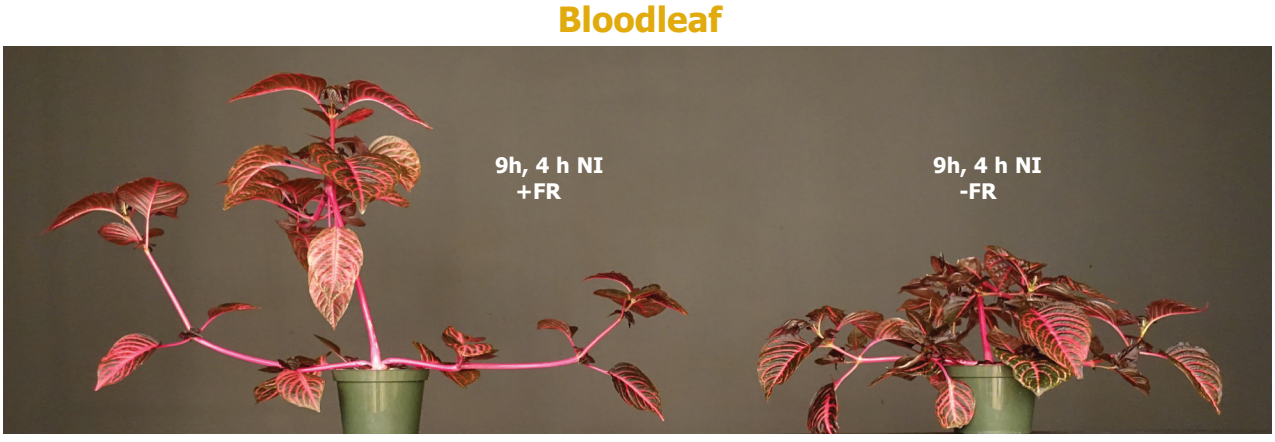

Fig. 6. Bloodleaf plant growth with a 9-hour photoperiod and 4-hour night interruption with light provided by LEDs either containing far-red or without far-red.