

Mid-summer Blooms

Suggestions to keep annuals healthy and colorful throughout summer's hottest days and into the fall.

By H.S. STEVENS

Anuals can provide a full season of color but don't count on it unless you take all the right steps. By mid-summer, many gardeners are asking, "where have all the flowers gone?"

Even if you have planted locally adapted varieties, there are many factors throughout the season that can have a negative effect on flowering. Here are some of the most common problems.

1) **Too much water:** When excessive rainfall or over-watering saturates the soil, annuals that are not growing in well-drained beds will suffer. Plant roots require oxygen in order to take up moisture and nutrients. In saturated soil, all the pore spaces are filled with water and little or no oxygen is available. Heavy rains can also leach available nitrogen from the soil. The result is yellowing of the lower leaves, loss of vigor, poor flowering and the proliferation of root rot fungi such as pythium and phytophthora. Sudden changes, such as hot, dry weather following a cool, rainy period can also cause the loss of flower buds and result in poor flowering.

We can't control the weather, but we can prevent problems caused by excess moisture by watering on the basis of need rather than on a fixed schedule, by planting on raised beds in any area where

drainage is poor, and by adding large amounts of organic matter to clay soils.

2) **Too little water:** Lack of sufficient moisture is the most limiting factor in summer gardening. During hot, dry weather, a large percentage of the water taken up by plant roots is lost by transpiration through the leaves.

Broadleaf plants may lose moisture faster than the roots can furnish it. This can cause wilting on a hot afternoon even when ample moisture is present.



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The problem is especially common when soil temperatures are too high.

Plant roots do not function efficiently when the soil temperature is 90° F or higher, and are most efficient when soil temperatures are in the 70s. A three-inch layer of organic mulch can reduce the soil temperature by as much as 25° F, keeping it in a favorable range for root growth and efficiency. Mulching reduces evaporation, maintains a more even level of moisture in the soil, and helps prevent weed problems.

Because most annual flowers are shallow rooted, they suffer more quickly from moisture stress than other type plants. Proper watering is critical. The soil should never be allowed to dry out. But too much water can do more damage than too little.

When supplemental watering is needed, apply enough to moisten the soil to a depth of at least six inches, then do not water again until the top inch or two of soil is dry.

Frequent, shallow watering leads to shallow root systems and plants that are less able to survive heat, low humidity, drying winds or other types of stress.

3) Improper fertilization: An ample supply of phosphorus is needed at planting time and during the early part of the season to stimulate root growth and hasten maturity, but once the plants are producing, their needs change. Nitrogen and potassium become more important. We generally think of nitrogen as stimulating foliar growth, but it is also necessary for reproduction. Because flowers, and the resulting seeds, are the plant's method of reproducing, an ample supply of nitrogen is important if the plants are to stay in bloom. Also, it should be remembered that by mid-season much of the available nitrogen in the soil has been either used by the plants or leached out of the root zone by rainfall or watering.

For a quick boost, foliar feeding is a good option. Use a spray application of fish

emulsion or other water-soluble fertilizer according to label directions. Repeat weekly, if needed.

To supply an adequate amount of nitrogen and other nutrients for the remainder of the growing season, make one application of a slow-release lawn fertilizer with a 3-1-2 or 4-1-2 ratio, such as 15-5-10 or 16-4-8. Scatter the fertilizer lightly around the drip-line of the plants, staying away from the stems, and water it in promptly and thoroughly.

4) Deadheading: This is the removal of faded or spent flowers, a chore that is necessary if the plants are to continue blooming. Deadheading is important for ageratum, calendula, cosmos, marigold (except triploid or mule marigolds), rudbeckia, scabiosa and zinnias. Poppies (*Papaver*) are an exception. Removing faded poppy flowers will not result in additional blooms.

To understand the importance of frequent deadheading, remember that the goal of the plant is to produce seeds for the next generation, not to produce flowers for us. If we allow the plants to produce mature seeds, they will have fulfilled their mission in life and flowering will slow or cease entirely. When removing flowers for display or during deadheading, always cut back to a healthy leaf or to the soil line if there are no more leaf buds on the stem.

5) Wrong plant in wrong place: Poor flowering during the summer can also be caused by too much or too little sunlight. Impatiens and begonias bloom best in shady locations and will not tolerate the hot afternoon sun.

On the other hand, marigolds, zinnias, periwinkles, moss rose and verbena need a



Marigolds are a favorite annual; there are many varieties.

minimum of six to eight hours of direct sunlight each day.

Annuals most resistant to drought, heat and the hot summer sun include periwinkles, zinnias, moss rose, alyssum, verbena and purslane. Marigolds are also included, except for dwarf French marigolds (*Tagetes patula*) in the South. They suffer heat check or heat stress.

High night temperatures and high humidity can cause a greenhouse effect that promotes growth rather than flowering. The larger African or American marigolds are not as sensitive to heat and, if kept healthy, will continue blooming.

Triploid or "mule" marigolds (*T. erecta* and *T. patula*) are the most dependable. Because they are sterile and cannot produce seeds, the plants put all their energy into producing more and more flowers. Triploid marigolds will bloom prolifically all summer. **LM**

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