

Minnesota State Florists Bulletin

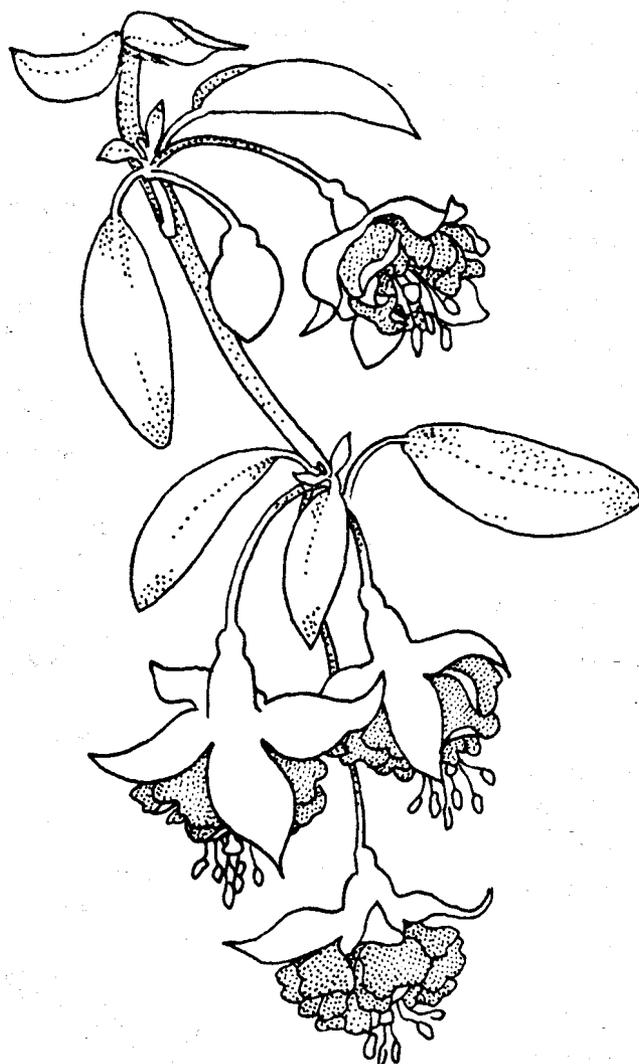
FUCHSIA PRODUCTION

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Fuchsia are grown for their showy, pendulous flowers which are one color or combinations of white, pink, red, and purple. Fuchsia are typically grown as a hanging basket crop for spring sales in the United States. The goal of most growers is to produce a well branched full basket with as many flowers as possible. In some areas of the United States, such as the northwest, growers have little or no difficulty doing this. However, in most of the United States fuchsia production can be more of a challenge. Often plants may be too leggy and/or have fewer flowers than is desirable. In addition, fuchsia may flower later than is desirable, i.e. after Mother's Day. New information can help you produce fuchsia comparable to the best fuchsia grown in the northwest. This article will address how you can time fuchsia flowering, increase flower number, and control fuchsia stem elongation no matter where you are in the United States. Most of the data presented on the effects of temperature on fuchsia was determined on Fuchsia x hybrida cv 'Dollar Princess'.

Timing Fuchsia Flowering

Most Fuchsia x hybrida are 'long-day' plants. In other words, days longer than nights will stimulate flowering. That is why fuchsia flower naturally in



the spring and summer; after March 21 days are longer than nights and flower initiation will occur. Earlier flower initiation can be encouraged by lighting plants at night using 'mum lighting' (10 footcandles supplemental lighting from 2200-0200 hr using incandescent lamps).

Temperature affects the time to flower in fuchsia. In general, most fuchsia will flower 7-8 weeks after the start of long days when grown between 65 and 72°F (Table 1). Notice that if day and/or

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night temperatures are warmer than this temperature range that the time to flower is longer! In other words, heat delay can occur in fuchsia from either high day or night temperatures (Table 1; Figure 1). To flower most fuchsia earlier than Mother's Day they should receive long days at least 8 weeks before May 13, i.e. starting by March 18.

Factors That Effect Flower Number

The number of flowers per plant is influenced by branch number, photoperiod, the length of the flower initiation period, and environmental conditions during the flower initiation period. One way to increase both branch and flower number is to allow enough time prior to initiating flowers, i.e. under short days, to develop a compact, well branched plant. Ideally, each plant should receive a minimum of 2-3 pinches prior to initiating flowers. Flower number is greatest if plants are grown for 3 weeks from the last pinch before initiating flowers, i.e. placing them under long-day conditions. Therefore, the last pinch should occur no later than Feb. 28 if natural photoperiodic conditions are being used to initiate plants.

Fuchsia branching is affected by average daily temperature. High temperatures tend to reduce branching. Grow plants around 65-70°F during the short day phase of the production schedule, i.e. prior to flower initiation. Growing fuchsia warmer than this will tend to decrease branching.

Fuchsia require 4 to 25 days under long day conditions to get maximum initiation. In general, the longer a long-day induction period up to 25 days, the greater the flower number per plant.

Long days should be delivered as a night interruption for best results. When fuchsia initiate flowers under marginal photoperiodic conditions flower number is less than when fuchsia initiate flowers using night interruption with incandescent lamps. Therefore, plants may have fewer flowers when initiated under natural photoperiodic

conditions during the spring compared to plants which receive night interruption lighting. Be careful, night interruption lighting with incandescent lamps will cause increased stem elongation.

Light intensity affects fuchsia flower number. It is very important that plants receive enough light during the day when plants are initiating flowers. Plants require a minimum of 1000 fc for at least 8 hours of a 12 hour+ day for maximal flower number.

The temperature which you grow fuchsia influences how many flowers the fuchsia has per node. In general most fuchsia can have up to 6 flowers per node. Often fuchsia are grown which have only 2-3 flowers per node. Recent research which we have conducted on Fuchsia x hybrida 'Dollar Princess' showed that flower number was greatest when plants were grown with a 61°F day and night temperature. (Table 1, Figure 1).

Increasing either day or night temperature above 68°F does not decrease the time to flower significantly, but does decrease the number of flowers per node. When day and night temperature were allowed to increase to 75°F flower number decreased to 4 for each node and the time to flower increased to 67 days (Table 1).

Factors That Effect Stretching

Fuchsia stretching, or stem elongation, increases as the Difference between day and night temperature (day temp. - night temp.) increases (Figure 2). In other words, as day temperature increases relative to night temperature, stretching increases. Therefore, one way to decrease stretching on fuchsia is to decrease the difference between day and night temperature. Stretching on fuchsia can be dramatically reduced if you do nothing more than grow plants with an equal day and night temperature.

Table 1. The effect of day and night temperature on the time from the start of long days to flower of *Fuchsia x hybrida* cv 'Dollar Princess'. Research was conducted at Michigan State University.

Night Temperature (°F)		Day Temperature (°F)			
		54 (10°)	61 (15°)	68 (20°)	75 (25°)
54	Time to flower (days)	82	75	70	73
	Flower number	2	4	6	4
61	Time to flower	58	52	51	66
	Flower number	6	6	5	5
68	Time to flower	61	53	53	59
	Flower number	6	5	5	5
75	Time to flower	58	53	60	67
	Flower number	4	5	4	2

Often in a production schedule hang baskets are hung early in their development. Often day temperatures are warmer higher up in a greenhouse. Higher day temperatures will increase stretching and decrease branching. Therefore, you may want to consider keeping fuchsia at bench level until flower initiation to increase branching and decrease stretching.

Application of some growth retardants will also decrease fuchsia stem elongation, i.e. A-Rest and cycocel. In addition to reducing stem elongation, an application of A-Rest increases flower number. Be careful! Although flower number is increased by an A-Rest application, the size of the individual flowers decreases.

Too often we are forced to severely prune a hanging basket crop. Plant growth on our hanging basket crops should be managed in such a way as to add to the plant size in a beneficial way. Pay attention to managing the growth on your plants; you are cutting off money every time you severely prune a crop!

Fuchsia Have Tremendous Potential!

We are currently evaluating approximately 350 cultivars and/or species of fuchsia at the University of Minnesota. Our intent is to select and introduce cultivars which have greater heat and drought tolerance than common commercially grown cultivars. In addition, fuchsia vary greatly in their growth habit, foliage color, and flower form and color. Many cultivars offer the public an exciting alternative to the traditional fuchsia. We are also initiating a breeding program to breed in those attributes most beneficial for commercial production, consumer appeal, and postharvest life of this crop.

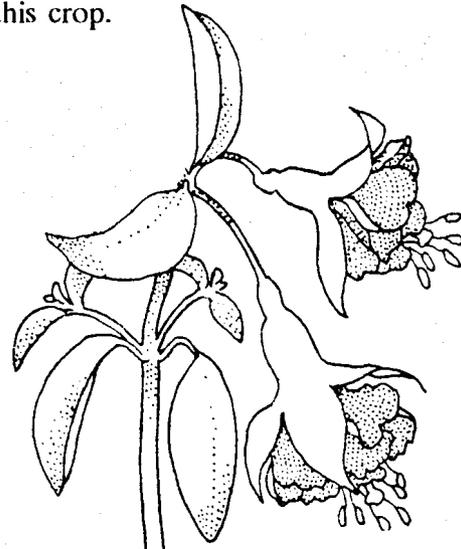


Figure 1

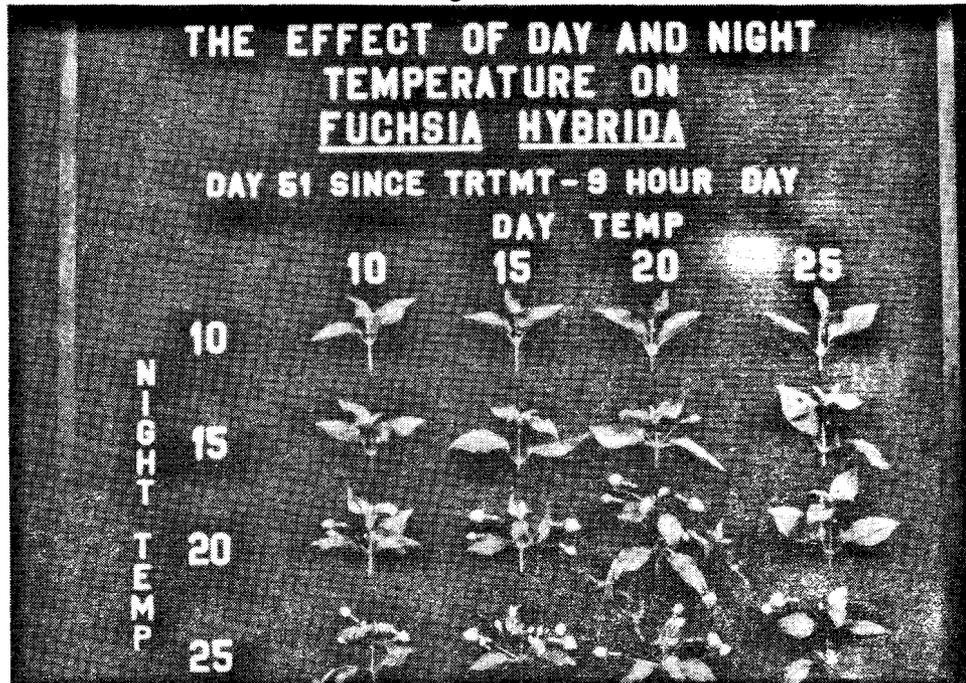


Figure 2

