

PROPER SPACING FOR RIEGER ELATIOR BEGONIA

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Economics of production for Rieger begonia and pot mums bear similarities in terms of cost of initial plant material, the 6 inch pot size and media, photoperiodic control of flowering, and growing time. Wholesale returns for Rieger begonia range from equal to moderately higher than pot mums. The large difference lies in the bench space required. Pot mums are grown on 13 inch centers while Rieger begonias require considerably less spacing, thus increasing the profitability of this crop.

The study reported here established proper spacings for Rieger begonia. Such recommendations had not previously found their way into print. It was known, however, that these dimensions varied with size of crop produced.

Two experiments were conducted, one under poor light conditions of winter and the other under the desirable light conditions of spring. In the first experiment plants of the cultivar Schwabenland Red were potted into 6 inch standard plastic pots on Nov. 16, 1973. The media consisted of 9 parts Pro Mix B to 1 part field soil and was not amended further. Night and day temperatures of 65 and 75°F were maintained. For the first 7 weeks daylengths were extended to 14 hours with supplemental lighting and thereafter natural short days were maintained. A fertilizer solution was applied weekly containing 400 ppm N and 133 ppm K. Twenty pots were set up at each of 4 spacings--9, 10, 11 and 12 inches on centers--and guard rows were established at the ends of each bench.

These plants reached a marketable date in 11 weeks on Jan. 29, 1974. Two weeks prior to the market date plants on 9 inch centers were beginning to grow adversely tall due to crowding. One week later the same occurred with plants on 10 inch centers. The average final plant height, width and number of well developed primary shoots for each treatment appears in Table 1. Plants on 9 and 10 inch centers were significantly taller, narrower and had fewer well developed shoots. When these plants were removed from the plots the shoots toppled over because stems were weak and side shoots had not developed sufficiently at the base to provide support. Plants on 11 and 12 inch centers were equal in all respects. They were shorter but of a more desirable height, wider and had more shoots. An 11 inch spacing was clearly the most desirable for this 11 week crop.

Table 1. The average height and width expressed in inches and number of well developed primary shoots for Rieger elatior begonias grown at 4 spacings in the 2 experiments of this study.

Spacing (inches)	Experiment 1			Experiment 2		
	Height	Width	No. Shoots	Height	Width	No. Shoots
9	7.8	10.6	3.6	-----	-----	-----
10	7.8	11.0	3.4	9.6	12.8	4.4
11	7.1	11.9	4.4	8.1	13.1	5.2
12	6.9	11.9	4.6	8.1	13.7	5.3
13	-----	-----	-----	8.1	13.9	5.3
LSD (0.05)	0.51	0.71	0.7	0.35	0.43	0.5

¹The authors are indebted to Mikkelsens Inc. of Astabula, Ohio, for plants used in this study.

The second experiment was conducted similar to the first except for the following differences. Plants were potted on March 7, 1974, pruned on March 28, and maintained under long day conditions until April 4 and short day conditions thereafter. Initially these plants were watered in with 27 oz. of 20-20-20 per 100 gal. of water (400 ppm of N) and a quarter teaspoon of 14-14-14 Osmocote slow release fertilizer was applied to the surface of each pot. Thereafter, 13.5 oz. of 20-20-20 per 100 gal. was applied with every other watering. At each of 4 spacings--10, 11, 12 and 13 inches on center--48 plants were set out. Each plot was encircled by a guard row. Final observations were made 14 weeks after potting and can be seen in Table 1 and Fig. 1.

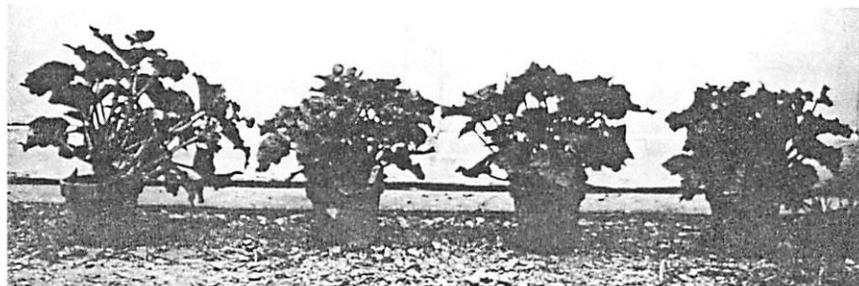


Fig. 1. Rieger elatior begonias grown on 10, 11, 12 and 13 inch centers (from left to right) 14 weeks after potting.

The best plants were those spaced on 12 and 13 inch centers. These were equal to each other. Plants on 11 inch centers were significantly narrower due to crowding. Plants on 10 inch centers were excessively tall, narrower and had fewer shoots than the desirable plants at 12 and 13 inch spacings. A 12 inch spacing was the most desirable for this crop which required 14 weeks growing time.

In conclusion, the optimum spacing for Rieger begonia varies with the culture time. Cultural procedures which delay flowering without causing injury to the plant, such as pruning, the use of moderate shade and extended long day treatment, all lead to a larger final plant size. For a crop produced in 11 weeks a spacing of 11 inches is desirable, whereas for a crop requiring 14 weeks a 12 inch spacing is best. Crops requiring 16 weeks have been observed commercially in North Carolina to require a 13 inch spacing.