Improving Verbena Germination

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In many parts of the country, Verbena is an excellent bedding plant. Because of its striking colors and its great adaptability to sunny, dry locations or cloudy, moist environs, it has been demanded by the consumer to the point where quality flats of this item sell very rapidly at retail outlets. However, large quantities of Verbena are usually not available to retail outlets or the consumer because of germination problems experienced with this commodity by the bedding plant grower.

In 1981, a study of some of the cultural practices related to germination of Verbena was conducted. The effect of light, soil temperatures, media moisture levels, and depth of planting, as well as different fungicide treatments, were studied.

To determine the number of viable seeds present before the start of the experiment, a technique using a 0.1% tetrazoleum solution was used. Seeds that were viable were stained, while the non-viable seed were not. Blaze, a red variety with a viability of 86%, was used in the experiment. Many of the seed,

regardless of their source, showed a large variability in size and may have had a high incidence of pathogens present in the seed.

Despite the 86% viability measured in Blaze in the first test measuring the effect of temperature on germination, only 29% of the seeds germinated at both 62 and 72°F soil temperature. However, the 62° treatment took 7 days longer and was much less uniform in emergence.

In this experiment the highest germination of 66% occurred at 75° soil temperature, high soil moisture, under 24 hour lighted conditions, sown ¼" deep and drenched with 2 tablespoons of Captan per gallon of water. Even at 66% there were 20% of viable seed that did not germinate. Further work is continuing to try to increase this germination percentage even further.

Table 1 indicates the effect of various factors on the germination percentage of Blaze Verbena seed.

Table 1: Germination percentage of Blaze Verbena seed under different environmental, cultural, and chemical treatments

Treatment	Germination (%)
Temperature	
75° (14 days to emergence)	29
62° (21 days to emergence)	29
Light	
24 hours	50
None	35
Media Moisture	
Dry (60% water holding capacity)	40
Medium (75% water holding capacity)	40
High (90% water holding capacity)	49
Depth of Planting	
Surface	40
¼" deep	47
½" deep	43
Fungicide Treatment (Captan 50% WP)	
None	38
1 tbs/gal.	50
2 tbs/gal.	52