

# **THE EFFECTS OF COLCHICINE ON GYPSOPHILA ELEGANS VAR. COVENT GARDEN MARKET AND THE RESULTING SOMATIC CHANGES**

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The purpose of this work was to study the effect of colchicine on the growing shoot tips of *Gypsophila*. As far as the author has been able to ascertain there has been no published work on the results of using colchicine on *Gypsophila elegans* which was one of the reasons for undertaking this problem. Other purposes were to gain a knowledge of colchicine technique and possible improvement of the plant.

The seeds were sown on moist filter paper in petri dishes. When the seedlings had made sufficient growth, these dishes were inverted over a petri dish so that the

growing tips were immersed in the colchicine solution. Concentrations used and periods of treatment were as follows:

- |           |                                     |
|-----------|-------------------------------------|
| 1. 0.2%   | for 4 hours                         |
| 2. 0.1%   | " " "                               |
| 3. 0.05%  | " " "                               |
| 4. 0.2%   | " 6 "                               |
| 5. 0.1%   | " " "                               |
| 6. 0.05%  | " " "                               |
| 7. 0.2%   | " 24 "                              |
| 8. 0.1%   | " " "                               |
| 9. 0.05%  | " " "                               |
| 10. Check | (water) for varying lengths of time |

After three trials had been made, the period of exposure for lots 7, 8, and 9 was reduced to two hours.

After treatment, the seedlings were grown in  $2\frac{1}{4}$  inch pots to the flowering stage.

The range of concentrations seemed ideal for the treatment of *Gypsophila*. Response was obtained from all concentrations used. All the periods of exposure were effective except for the two hour exposure.

A change in the time of maturity was observed among the treated plants. The range was from a normal time of two months to almost six months.

The following factors did not vary appreciably: size of pollen grains, stomate length, size of epidermal cells, and increase in leaf thickness.

A total of 1159 seeds were sown and 374 plants were treatable. Of these only 14 plants showed thicker, stronger stems, in some cases double the normal thickness.

Eight plants had a darker green leaf. Fourteen plants were retarded in growth. Several plants showed an interesting deviation from the normal inflorescence, which is a cyme; two plants produced their flowers in a compact panicle so that it appeared to be an umbel.

The plants which were different in respect to stem strength and compactness of inflorescence, if consistent, could be of commercial importance.