

## Production of *Halesia diptera* var. *magniflora*®

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### INTRODUCTION

*Halesia diptera* var. *magniflora* is one of the best flowering forms of the genus *Halesia*. It is native to the lower south eastern part of the U.S.A. and usually occurs as an under story plant in well drained but fairly moist soils. The var. *magniflora* refers to heavy copious flowering where individual flowers are significantly larger than the species type. It is a Zone 6 to 9 plant and can conceivably occupy a considerable geographic range.

When grown alone and away from other *H. diptera* plants, *H. diptera* var. *magniflora* will produce seed that comes true for the large flowering characteristics. This makes seed a viable option for producing this form. Dirr (1998) in the *Manual of Wood Landscape Plants* says that in general cuttings of *H. diptera* var. *magniflora* cannot be rooted and from my experience this is true. It is exceedingly difficult to root cuttings of this plant and even when they are rooted they fail to thrive or even overwinter successfully. Budding works to some extent as does grafting but they are not sure-fire methods of propagation either, leaving seed as the most logical of practices.

### SEED PROPAGATION

Seed propagation is not always straightforward. To ensure the validity of the var. *magniflora* the plants have to be grown in some isolation from other *Halesia* that are not var. *magniflora*. It is unknown whether they will cross pollinate with *H. monticola* but this seems to be a distinct possibility and seed taken from possible cross pollination situations should be avoided.

Not much has been written about the production of *H. diptera* var. *magnifica* from seed so the next logical step would be to look at *H. carolina* and perhaps even some of the *Styrax* species for clues on how to handle seed for good germination. Experience has shown that *H. carolina* can be readily produced as seedlings by moist-warm stratifying fresh *H. carolina* seed in perlite for 8 to 12 months. Such warm-stratified seed can then be placed in moist-cold stratification in perlite for 60 to 90 days. Upon removal and sowing either in beds or containers at spring or early summer conditions a respectable germination percentage can be obtained. This holds true for both *S. japonica* and *S. obassia* as well, other members of the *Styracaceae* family. However, in a recent germination study of *H. diptera* var. *magniflora* seed utilizing the same techniques for *H. carolina* and *S. japonicus* and *S. obassia* was not as effective.

In the test study, 200 *H. diptera* var. *magniflora* seeds were fall collected, not dewinged, and placed in large zippered poly bags with moist perlite at a ratio of 1 part seed to 6 parts moist perlite. This seed was then held for 8 months at 19 °C. After the 8-month period the seed was then transferred to a refrigerator at 4 °C and held for 90 days. Upon completion of the 90-day cold period the seed was inspected and it was found that some were sending out radicles. The exuberant optimism for cracking the code was short lived.

The seed was carefully removed and those that had sent out radicles were separated from the overall bulk of the seed. These pregerminated seed were then potted individually into 2<sup>1</sup>/<sub>4</sub>-inch pots with Scotts 510 Grower Mix. All the pregerminated seed continued to flourish and quickly within days sent out cotyledons and true leaves. Such seedlings were then fertilized lightly with 50 ppm N and allowed to remain in a greenhouse environment. A total of 36 seedlings were produced this way. The remaining seed that had not shown signs of pregermination were planted in bulk in a large nursery container filled again with the Scotts 510 mix. They were kept in the greenhouse as well and watered as needed. After several more months only a total of five new seedlings emerged and they were left in situ. It is presumed but not certain that the remaining seed that had not germinated will not germinate but the large nursery pots have been kept for another round of natural warm – cold – warm sequence to see if more germination will occur. As it stands currently the total amount of seed germinated was 41 out of 200, which equates to 21%. This is by far significantly different from results obtained with *H. carolina* or *S. japonicus* under similar circumstances. In fact these results are more in line with germination studies of *S. grandiflora*, which behaves similarly and has an equally low germination percentage while *S. japonicus* when treated accordingly will germinate with an initial flush of 70% or more.

Obviously the system will coax some *H. diptera* var. *magniflora* seed to germinate but the results are disappointing. Upon availability of more seed this coming season a continued effort will be made to further understand the complexity of germination requirements for *H. diptera* and *H. diptera* var. *magniflora*.

Since seedlings will be available at least for a limited time the next approach will be to see if the initial soft spring flush of growth can be rooted in satisfactory percentages to bulk up the total number of plants and to further the possibility of taking cuttings by providing long day lighting. More work is needed to develop an effective propagation strategy for *H. diptera* var. *magniflora* other than grafting or budding.

#### LITERATURE CITED

Dirr, M.A. 1998. Manual of woody landscape plants. Stipes Pub. Co., Champaign, Illinois.