

PRODUCTION OF *DAVIDIA INVOLUCRATA* FROM SEED

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Davidia involucrata, the pocket handkerchief tree or dove tree, was considered by Ernest Wilson to be "the most interesting and beautiful of all trees of the north temperate flora." He likened the white bracts to "huge butterflies hovering among the trees."

In the 85 or so years since its first introduction from China to Britain, the dove tree has become one of the best known of all hardy exotic trees. Despite this, plants are still surprisingly difficult to obtain in the trade, perhaps due to the inability of propagators to find a reliable method of rooting cuttings. Seed production still remains the only simple means by which this tree can be produced in quantity.

In this paper, I hope to be able to briefly outline, how I have been successful with seed germination over the past few years.

Seed source is the first consideration for successful germination. *Davidia* seed is available commercially from various seed houses but by far the best source is one's own collection.

The walnut-sized fruits are often freely produced in Britain. There are two forms regularly encountered in cultivation, *D. involucrata* and its variety, *vilmoriniana*, the latter being the more common and preferable for propagation as the fruits of the variety are more likely to contain viable seed.

When a tree bearing fruits has been located, it is worth cutting a few open to inspect for seed viability. One seed may contain up to six live embryos with one or two only being quite common.

The fruit is ripe from October through to December when it begins to fall from the tree, although many fruits will remain on the tree well into the following year. They can be dislodged from the tree by shaking the branches, and can then be gathered from the ground and placed in black plastic sacks, ready for fermentation.

The fleshy part of the fruit has to be removed before stratification or seed pre-treatment can take place. To do this the fruit must remain in the sacks in a warm, dry place usually until the following February. By this time the fruits will be soft and smell rather rank. Cleaning is now easily achieved, macerating the fruits in a sieve and washing away the debris with water.

Davidia seeds need a prolonged period of warm pre-treatment followed by a cold spell before germination can take place. In my experience the warm treatment is best left to nature, leaving the seed in the stratification medium out of doors from February, when they are cleaned, until November, in a warm but not baking hot situation. An open cold frame or against a north wall would be ideal.

Large plant pots can be used to contain the seeds but I find the ‘Dutch crate’ ideal for this purpose. The stratification medium needs to be very open; I would suggest a mixture of equal parts of moss peat and sharp grit or perlite.

The box is lined with newspaper to prevent the compost from falling through the bottom and sides. Eventually the newspaper will rot away but the compost should stay in place when moist.

A 1-in. layer of the medium is placed into the bottom of the crate followed by a layer of individually spaced seed. Continue with alternate layers of seed and compost until the box is 2 in. from full. A 2 in. layer of gravel is used to cover and complete the box. This cover prevents the compost from drying out and also helps obstruct rodent damage and weed seeds from germinating.

The crate must now be left in its summer resting place and thoroughly watered. The seeds must not be allowed to dry out during the long period.

In November the seeds and medium are removed from the boxes and the compost washed away through sieves. When the seed is once again clean, it will be noticed that the embryos have expanded, forcing the seed casing apart. Even at this stage they are not ready for full germination; they still require cold stratification. The prepared seeds are mixed with moist peat and placed in polythene bags with the neck of the bag loosely tied and labelled. The bags of seed are then placed in a cold room or refrigerator set to a temperature of between 2° and 4°C and inspected on a weekly basis.

of radicle emergence and are then ready to sow. They *can* be sown individually, but as there is quite often more than one embryo per seed, they are best sown in deep seed trays and placed on bottom heat, set to approximately 20°C. By mid-April the seeds should all have germinated and at the cotyledon stage, can be knocked out of the trays and potted individually into small pots.

The seedlings are very vulnerable at this stage and care should be taken to protect them from direct sunlight with shading, and from frost at night. The crop is a valuable one, so it would be prudent to pot them into a frost-protected glasshouse.

By the middle of July, the seedlings will be at least 12 in. high. They quite often need staking as growth in the first year is usually soft. At this time, they can be potted into intermediate one-litre pots and held in this container until the following spring, after which they can be moved into their final pot.

Well-grown containerised plants will have a retail market value of between £10 and £25, depending upon their size. Although the process may seem lengthy, the end product is well worth the wait.