

## Experiences in Propagation of *Cornus mas* and *Cornus florida* Cultivars<sup>®</sup>

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### INTRODUCTION

In my experience, the propagation of these species and their cultivars has always presented problems. However, perseverance and the investigation of a number of different methods have resulted in the following grafting and cuttings techniques that have proved successful.

***Cornus mas*.** There are many good forms of *C. mas* available. Cappiello and Shadow (2005) list more than 30, most of which are only obtainable from the U.S.A. I have only propagated *C. mas* 'Variegata' and *C. mas* 'Aurea Elegantissima', both of which proved to be quite difficult.

***Cornus florida*.** Cappiello and Shadow (2005) list 135 cultivars of this species; again, not many of them are available outside of the U.S.A., where the crop is reported to be worth \$50 million per year. In the U.S.A. budding is recommended as the most efficient propagation method. But this is probably not viable in the Great Britain and Ireland Region because of our more variable and unpredictable climate. *Cornus florida* has a reputation for being difficult to grow in the U.K. except on the south coast and in Cornwall. But it may be possible to grow it more widely if the climate here changes as predicted by global climate change forecasts. It would be good to see it become more popular in our market because it is a superb tree in all its forms.

### CUTTINGS

***Cornus mas* and *Cornus florida*.** I have successfully propagated forms of both species from semi-ripe nodal cuttings taken late June or early July when the material is firming at the base. The material should be reasonably strong and without any blemishes.

Cuttings were given a quick-dip into Synergol™ (50% IBA and 50% fungicide solution). They are then inserted in pots or plugs containing a rooting medium of 1 sharp sand : 1 fine peat (v/v) and placed on a mist bed with light shade and bottom heat at 15 to 18 °C. Rooting should take 5 to 6 weeks.

Rooted cuttings can be carefully potted on into a low nutrient medium and placed on a bed or bench with bottom heat (15 to 18 °C) and irrigated sparingly. We obtained best results with the use of supplementary sodium light to increase day-length, over a period of 21 days.

### GRAFTING

***Cornus mas*.** I have had moderate success with grafts performed in January and February onto pot-grown *C. mas* seedlings of pencil thickness or slightly less. These are normally available in the trade. Seedling stocks should be transferred into a warm growing environment at least 3 or 4 weeks before grafting, and grafting should only be undertaken when the stocks begin to show signs of growth. I have usually had most success using standard side grafts. The cambium layers are quite

thin in this species, which makes accurate carpentry and matching of the cambium layers in stock and scion important.

Stocks should be headed back to 30 cm in height and the scions should be no more than 18 to 22 cm. Tying material should be rubber, which expands as callusing develops and degrades in 2 to 3 months. After the carpentry the grafts are housed in a warm case or polythene frame at 15 to 18 °C. It is important to keep newly emerging foliage as dry as possible. When watering, avoid splashing water onto either the graft or new foliage, because this is associated with increased risk of fungal contamination. Shade should be provided to moderate temperatures on bright days.

Callusing normally begins within 2 weeks of grafting but is not very pronounced because the cambium layers are so thin. After 3 to 4 weeks the scions should begin to show signs of growth, at which time the stocks can be headed back again or snagged to just above the carpentry, taking great care not to damage the scion in any way. Also remove any stock shoots that may have developed below or around the graft.

After heading back replace the plants in the case or frame for a further week, then begin to wean by gradually increasing ventilation, replacing the cover with shade netting after 2 weeks. After a further 2 weeks the bottom heat may be turned off. Continue watering carefully until the plants are ready to pot on.

***Cornus florida*.** Generally these can be grafted in the same way as *C. mas* cultivars. However, *C. florida* understocks can be difficult to obtain.

One source of understocks is to raise *C. florida* from seed in preparation, this will need to be planned at least 18 months ahead of making the grafts. Fresh seed requires some 3 to 4 months stratification before sowing in the autumn; germination is then usually very good the following spring. When large enough the seedlings can be graded and the best potted ready for grafting the next January or February.

Alternatively, *C. kousa* may be substituted as an understock with good results.

As with *C. mas*, the wood of *C. florida* is dense and hard with a very thin cambium layer, so good carpentry is again essential. Also it is important to stick to the same degree of care for over-watering, shading, and weaning.

## CONCLUSION

On balance, the best and most reliable results are probably going to come from cuttings. However I understand that use of hot-pipe callusing on grafts during January and February has improved the success of grafting on a number of nurseries. It would appear there is more potential for research into the propagation of these plants. The old adage about paying attention to detail is particularly valid for the cultivars of these fine species.

## LITERATURE CITED

Cappiolo, P. and D. Shaddow. 2005. Dogwoods. Timber Press, Portland, Oregon.