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Magnolia kobus—a Dwarfing Understock?

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It began as a kind of insurance policy and ended as an informal experiment in comparative growth rates. In the eighties, whenever I acquired, what at the time was a rare magnolia cultivar, I took cuttings as soon as sufficient material was available. The main objective was to make sure I secured a further specimen as an insurance against loss of the original. When friends and fellow enthusiasts sent dormant material in January or February, I grafted it onto *M. kobus* understocks, of which I had a ready supply. I invariably followed up by taking semi-ripe cuttings in the summer from the young grafts. I regarded this an insurance policy, reinforced at first by a belief that the chore of having to deal with suckers (from experience with roses and rhododendrons) would be avoided, and further bolstered by an instinct (not qualified by any data) that plants on their own roots were generally healthier and longer lived.

I have no mist facility and still rooted cuttings under polyethylene with bottom heat in a floor unit I built using scaffold boards and expanded polystyrene for insulation. Results seem quite satisfactory for those magnolias that will root from cuttings. These include all the *M. soulangeana* types, the *Buergeria* section and the Greshams as well as many others. I have not had success with *M. campbellii* and its forms though, curiously enough, its hybrids generally seem to root quite readily.

After rooting the cuttings, it was my practice to keep them dry over winter in a conservatory that was frost free and pot them up the following spring when they began to leaf out. They were fattened up, usually potted on several times, then planted in their permanent positions some two years, or more, after rooting. Reluctant to dispose of the original grafted plant, which by then was established and growing strongly, I simply planted the cutting-raised sibling some six feet away with the idea of growing the two plants together to eventually form a single canopy and create a bold mass in the landscape.

After some years I began to notice uneven development in the canopies. In the first two years or so, the grafts benefited from an already developed *M. kobus* host plant root system and grew more quickly. Later however, without exception, the cutting-raised plants overhauled the grafts in height and spread, even though they had been planted later and had at least two years growth to make up. Although the grafts were perfectly

MAURICE FOSTER

MAURICE FOSTER

Top: 'Elizabeth' and 'Lois.' On the right 'Elizabeth' (graft); center 'Elizabeth' from a cutting. 'Lois' is on the left.

Bottom: 'Spectrum' with 'Sundew' in the background. 'Spectrum' was grown from a cutting.

satisfactory as garden plants, the cuttings showed greater vigor, better leaf size, longer extension growth and generally a more robust and healthy constitution. I have not yet noticed any significant difference in flower size and substance. With conditions of soil, situation, cultivation and management as nearly identical as could be achieved, the only explanation for the difference in growth lay in the "own root" and "kobus graft" distinction.

One possible conclusion is that grafting is an imperfect method of increase that cannot match the natural vigor of own-root plants, be they seedlings or cuttings. There is quite a lot of informal, anecdotal evidence that this is the case.

One certain conclusion that seems inescapable is that *M. kobus* has a dwarfing effect. This being the case, where space is limited in a small garden, *M. kobus* grafts could be used with advantage. Where space is no problem, cutting-raised plants will always give a more satisfying result. I do not have an example of a *M. kobus* var. *loebneri* comparison, which could be interesting as a test of the "any graft/own root" conclusion, as all my plants in this group are cutting raised.

Cultivar		Date Planted	Girth (in.)	Height (ft.)	Spread (ft.)
Darrel Dean	graft	4/86	9.5	12	14
	cutting	5/89	13.1 (+38%)	15 (+25%)	23 (+64%)
Elizabeth	graft	7/84	13.3	14	15
	cutting	5/88	12.5 15.1*	18 (+30%)	24 (+60%)
Frank Gladney	graft	4/87	7	12	9
	cutting	4/89	8.6 (+23%)	15 (+25%)	13 (+44%)
Spectrum	graft	6/87	7.2	16	12
	cutting	4/89	12 (+67%)	21 (+31%)	17 (+42%)
*twin-stem – girth at 2'3"					

I have since removed and logged some of the grafted plants, as I needed the space, but four pairs dating from the '80s remain. Their comparative measurements are listed in the above table. The plants were measured in August 2000. Girth was measured at comparable heights; for spread, the widest span was selected.

MAURICE FOSTER

Magnolia 'Frank Gladney'

With spread in the cutting-raised plants between 40 and 60% greater than in the grafts, the advantages of *M. kobus* understocks for the smaller garden seem plain enough. Though height difference is less emphatic, cutting-raised plants are still, after 10-15 years, some 25-30% taller. These are major variations and the

general visual impression in the garden is that cutting-raised plants are some 2-3 times bigger than the grafts.

I would be interested to know if this reflects the experience of others, perhaps in different climatic conditions; whether there are differences in growth rates where other understocks are concerned; in raising cuttings, whether anyone has made any 'rootability' tests across a representative range of cultivars; and whether mist is more effective, generally, than plastic.

A footnote: Having been sent scions of *Manglietia fordiana* and the only understocks available being *M. kobus*, these were used. I now have a plant up to the greenhouse roof. Does this mean that *Manglietia* is very closely allied to *Magnolia*, or is it that *M. kobus* can be used as an authentically universal understock for Magnoliaceae? Has anyone succeeded in establishing *M. grandiflora* on *M. kobus*? Or perhaps *Michelia*?

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