

## ***Pteroceltis tartarinowii*: An Elm Family Relative with Potential for the Urban Landscape<sup>©</sup>**

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### **INTRODUCTION**

*Pteroceltis tartarinowii* Maxim is a large member of the Ulmaceae from Northern and Central China with characteristics intermediate between that of true elms, (*Ulmus*) and hackberries (*Celtis*). It makes a large tree with *Celtis*-like foliage and strong tree character much like elms. It is hardy to at least Zone 6 and some authorities place it in Zone 5 (Griffiths, 1994) for hardiness but there is some question if it can be produced further north than Philadelphia. Although provenance may have a direct bearing on this and hardier forms from the limits of its natural range could be suitable for points in the Midwest. The typical pests and diseases that afflict both elms and hackberries do not bother it and it remains clean and blemish free in Philadelphia. A mature tree is stately with soft bright green foliage and rough bark which peels in large flakes revealing lighter bark underneath giving the overall appearance of a patchwork of various colors. Although traditionally raised from seed it is possible to raise this tree from cuttings.

### **MATERIALS AND METHODS**

Cuttings were collected in late July from soft growth with a soft tip still visible and terminal leaves not fully expanded. The cuttings were 6–8 inches long with 5–6 nodes. They were wounded on two sides and treated with 1000 ppm IBA as a liquid dip and stuck in 2¼-inch pots with 1 sand, 3 peat, and 1 perlite (by volume) medium. The cuttings were stuck in a warm greenhouse with bottom heat and were provided with overhead mist at 10 sec every 10 min. The cuttings were slow to root with about 6 weeks from the time of sticking before roots emerged. After this period the cuttings were removed and evaluated for rooting. Twelve of the 36 cuttings stuck were rooted and were potted and placed under mist again for 5 days to harden off. They were then removed and kept watered but no further care such as fertilization was given. They were overwintered in a cold greenhouse under a microfoam blanket.

### **DISCUSSION**

Although only 12 cuttings were rooted it is entirely possible that a much better take could be obtained by getting the cuttings sometime during the first week of June. Since 12 cuttings did root indicates that the type of cutting wood was not at fault but most likely the late time of sticking had a more pronounced affect on the overall rooting. Also, it is possible that a stronger hormone coupled with an earlier time of sticking could enhance the overall take. Whitcomb (1977) showed that with *U. parvifolia* cuttings the first flush of growth in the spring that had hardened somewhat by June resulted in the best cutting wood and perhaps *Pteroceltis* follows a similar pattern.

Even though the cuttings were overwintered under microfoam they did not survive. This might be attributable to two things. One would be the disturbance in be-

ing repotted initiating some form of stress that was not immediately detectable and the other could be that late July is truly too late for adequate success which again points to taking the cuttings at an earlier date. Expanded photoperiod may have well helped in allowing the cuttings a longer period of recovery prior to winter and could well have increased the rooting potential overall.

More work needs to be done to perfect the technique but it is evident that this obscure relative of the elms could be successfully reproduced via cuttings with several improvements with respect to timing.

#### LITERATURE CITED

- Griffiths, M. 1994. Index of garden plants. Timber Press. Portland, Oregon.  
Whitcomb, C.E. 1977. Propagation of selected superior trees from cuttings. Nursery Research Field Day Rpt. - 760. Oklahoma State University. Stillwater, Oklahoma.

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## Propagation of *Clematis fremontii* and Related Species from Seed<sup>®</sup>

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#### INTRODUCTION

*Clematis fremontii* Wats is a nonvining species of *Clematis* found in the high plains of Kansas, Nebraska, and Colorado. It makes a very stout perennial that although diminutive approaches a shrub in form and texture. Being from the west central part of the United States it is naturally accustomed to long period of drought and heat during late spring into fall. As with all clematis and other members of the Ranunculaceae the entire plant is poisonous and is rarely a victim of herbivores. This can make the plant the bane of many high plains cattle ranchers as the cattle will either eat the plant and become deathly ill or eat everything else but it so that in the wild there is little or no competition to impede its distribution, particularly in cow pastures. It does have a good side however in that it provides a multitude of blue to purple blue-bell-shaped flowers that hang down and are considered to be quite handsome. The flowers with respect to most other shrubby type clematis are quite large and showy.

#### SEED PROPAGATION

Seed of this species can be collected in late summer when it is turning from green to a dull brown. The individual seeds like all clematis have a long pronounced tail and are usually quite pubescent. For a clematis, *C. fremontii* has quite large seed, which is easy to handle.

The seed can be rubbed on a hardware cloth screen to break off the ever present tail but this is not a fundamental requirement, although, tailless seed is a lot easier to handle. The key factor to germinate *C. fremontii* and others such as *C. forsteri* (syn. *C. hexapetala*), *C. pitcheri*, *C. × diversifolia* (syn. *C. eriostemon*), *C. heracleifolia*, and *C. stans* is to provide a long period of warm moist stratification. This can best be accomplished by stratifying the seed in moist perlite. The perlite is prepared by filling a bucket with holes in the bottom with perlite and pouring a large quantity of water into the bucket so that the water drains straight through. This wet perlite is then set aside and allowed to drain completely for 24 h before using.