

Intergeneric Hybrids between *Gordonia lasianthus* and *Franklinia alatamaha*

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Index Words: Plant breeding, Franklinia, Gordonia

Significance to Industry: Controlled crosses between *Franklinia alatamaha* (Franklinia) and *Gordonia lasianthus* (Loblolly-bay) resulted in intergeneric hybrid progeny that are now being evaluated for potential new landscape trees.

Nature of Work: A small population of *Franklinia alatamaha* Bartr. ex Marshall was discovered by John and William Bartram along the banks of the Altamaha River in Georgia in 1765 (1). Seeds were collected from these trees over a number of years, but the species has not been seen in the wild since 1790. Although *F. alatamaha* is considered extinct in the wild, it persists in cultivation and makes an attractive landscape tree. This species is valued for its showy white flowers, bright crimson/maroon fall foliage color, and excellent cold hardiness (USDA Zone 5).

Gordonia lasianthus (L.) Ellis is an evergreen shrub or small tree native to the Coastal Plain through Virginia, Florida, and Louisiana, typically growing in riparian habitats. *Gordonia lasianthus* is valued for its attractive foliage and large, white, showy flowers. Cold hardiness is limited (USDA 7b/8a).

In 1974 Dr. Elwin Orton, Jr. successfully crossed *G. lasianthus* with *F. alatamaha* and produced 33 hybrids (2). Orton (2) further reported that the seedlings grew vigorously during the first growing season and that a number of them bloomed the following year. However, all of the plants eventually died, possibly due to some type of genetic incompatibility or a pathogen (e.g., *Phytophthora*) (2). Although Orton's report was somewhat discouraging, hybridization between *F. alatamaha* and *G. lasianthus* could potentially combine the cold hardiness of *F. alatamaha* with the evergreen foliage of *G. lasianthus* and broaden the genetic base for further breeding within these monotypic genera. The objective of this project was to make a renewed attempt at developing intergeneric hybrids between *F. alatamaha* and *G. lasianthus*.

Controlled crosses were made between *Franklinia alatamaha* (female parent) and *Gordonia lasianthus* (male parent) in Aug. 2002 at the Mountain Horticultural Crops Research Station, Fletcher, N.C. Pollen was collected from a specimen of *G. lasianthus* 'Variegata' (accession 2002-090). Flowers of *F. alatamaha* (accession 1998-450) were emasculated and hand pollinated. Approximately 75 flowers were pollinated. Seeds were collected in Sept. 2003, stratified in moist media for 90 d at 43 EF, and germinated under greenhouse conditions.

Results and Discussion: A total of 9 hybrids were propagated from seed in Jan. 2004. Growth was fast and many of these progeny attained heights greater than 2 m and flowered within 9 months of germination. Characteristics of the progeny clearly demonstrated their hybrid nature. In particular, hybrids are semi-evergreen and leaf size and shape is intermedicate between the parents. The stamen filaments of the hybrids often were malformed and sometimes flattened, enlarged, and petaloid in appearance. All of these plants and subsequent cuttings continue to grow well and are now being evaluated for their portential as nursery and landscape plants.

Literature Cited:

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