

## Non-Invasive, Cold-Hardy Clumping Bamboos: The Genus *Fargesia*®

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### INTRODUCTION

First of all please let me clarify a general misconception. I believe that bamboos are not “invasive,” because: (1) bamboos do not flower and set seeds that are dispersed far and wide, (2) bamboos do not invade wetlands — their roots cannot survive in water-saturated soils; they do not “jump” to other areas, and (3) some genera of bamboo have pachymorph root systems with no expanding stolon or rhizome parts. However, some bamboos are extremely spreading and if planted, need to be sited properly, be maintained within the desired perimeter of spread, and have their unwanted spread controlled.

### BAMBOO ROOT SYSTEMS

So, regarding root systems, bamboos can be:

**Leptomorph — Monopodial.** Leptomorph types have running rhizomes like many kinds of turf grass. These bamboos can spread vigorously and need to be managed. All species of *Phyllostachys*, *Sasa*, *Shibataea*, *Pseudosasa*, and *Pleioblastus* are “running” bamboos.

**Pachymorph — Sympodial.** Pachymorphs have clumping roots like the ornamental grass, such as *Miscanthus*. These bamboos enlarge slowly, forming a dense clump. The only genus of cold-hardy pachymorph bamboos is *Fargesia*. All forms of *Fargesia* are clumping, non-invasive bamboo.

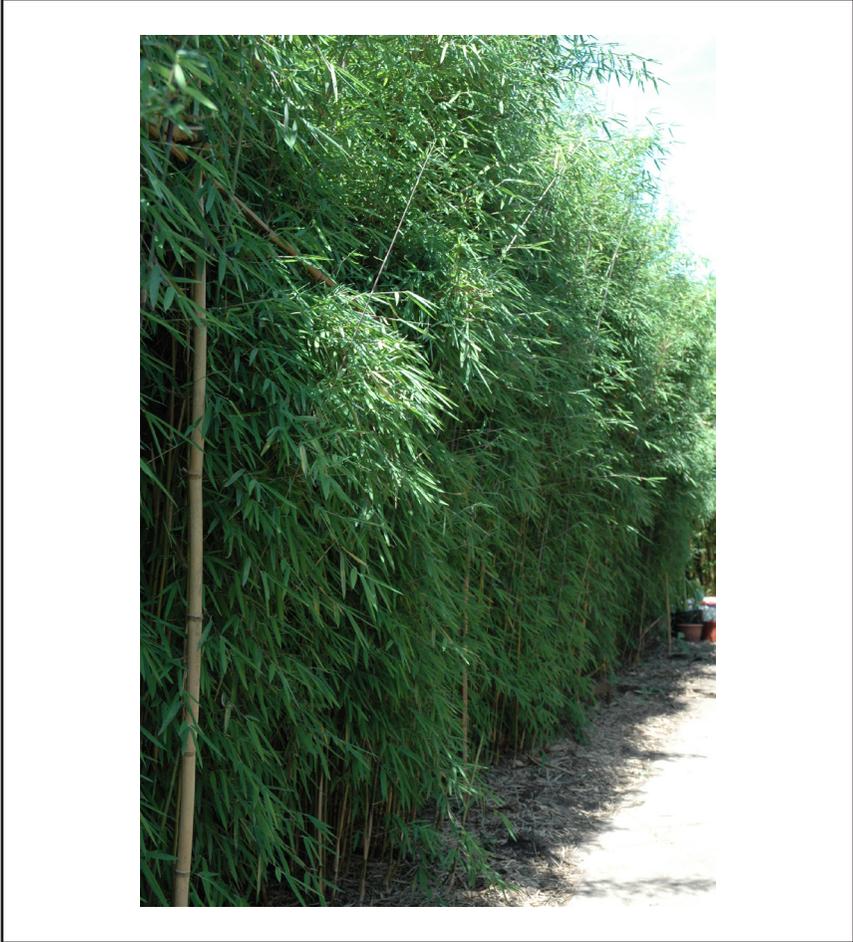
### CLUMPING BAMBOO TAXA FOR NORTHERN GARDENS

Until recently, there were only a couple of species of *Fargesia* available to the American garden, imported several decades ago from wild-collected plants originating from China. Within the species, *F. nitida*, multiple clones were in cultivation, showing varying forms and diversity. However within the past 5 years, most of these clones have begun flowering, which in the case of this species, is monocarpic, resulting in death of the plant.

Needless to say, this is not a desired phenomenon in the garden landscape.

As a result of the flowering, new genotypes have been developed. The best to-date is:

***Fargesia nitida*, ‘Isle of Man’, Great Wall™ fountain bamboo.** This is a new generation “fountain bamboo” seedling from the Isle of Man, U.K. Exclusively from BambooSelect® Great Wall™ fountain bamboo is clump-forming, upright and graceful with new shoots emerging in late mid-summer. New culms are covered in bluish-white powder and remain branchless and leafless throughout winter, forming its “fountain” shape. Native to the high mountains of China, it is one of the cold-hardest bamboos in the world; it can tolerate temperatures to -25 °F. Use as a solitary specimen, hedge, or screen. The dense thick habit is ideal for a screen effect. It prefers afternoon shade, U.S.D.A. Zone 4–8, it thrives in full shade to part sun. It develops a height to 15 ft tall and width of 12 ft.



**Figure 1.** *Fargesia nitida*, 'Isle of Man', Great Wall™ fountain bamboo as a hedge planting.

For many decades, only one other *Fargesia* was available for home gardeners. *Fargesia murielae*, which was the original collection of E.H. Wilson. Only one genotype was in cultivation, and all specimens flowered and died in the 1990s. Resulting from this flowering is the new clone, Oprins Selection.

***Fargesia murielae*, Oprins Selection, New Umbrella™ umbrella bamboo.** One of the very best clumping bamboos for the garden, New Umbrella™ bamboo is a new generation clone of a seedling selected from field trials in Belgium. It is an exclusive from BambooSelect.

This “umbrella bamboo” is graceful and extremely reliable. New shoots emerge in mid-summer. Older leaves turn yellow and give autumn color. Native to the mountains of western China, it is cold hardy to -20 °F. It can be used as a specimen or grouped as a hedge or screen. New Umbrella™ umbrella bamboo prefers afternoon shade and grows in U.S.D.A. Zone 4–8. It thrives in full shade to part sun. Ultimate height is to 12 ft tall and a width of 10 ft.



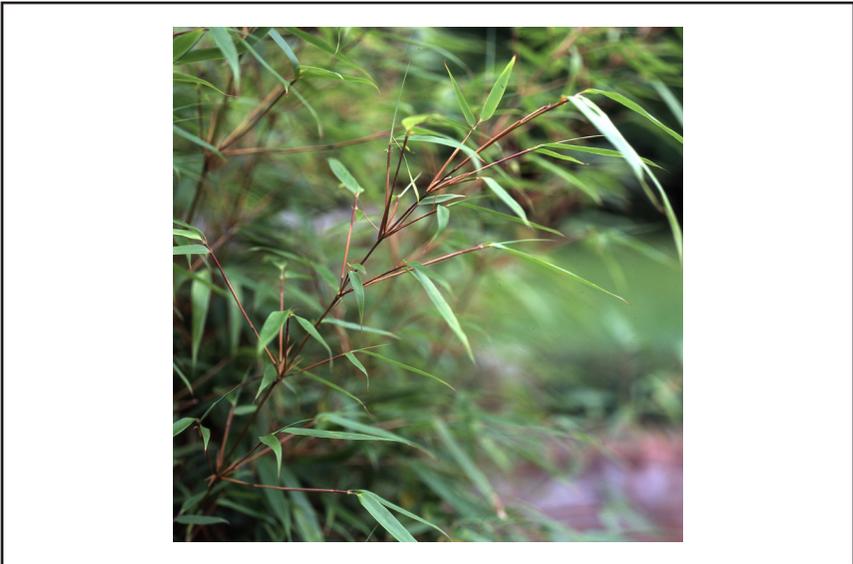
**Figure 2.** *Fargesia murielae* New Umbrella™ umbrella bamboo as a hedge.

Recently, new types of *Fargesia* have been introduced thanks to the efforts of BambooSelect, an exclusive brand from Belgium, where field trials of seedlings by Oprins Plant N.V. resulted in the selection of the very best in cold-hardy, non-invasive bamboos.

***Fargesia rufa*, Oprins Selection, Green Panda™ bamboo.** This selection was cultivated as *Fargesia* 'Rufa' in Europe for several years. Oprins Plant NV received a new plant introduction award at Boskoop in Holland for this form in 2003. Subsequently, it was introduced into the U.S.A. in 2003 as Green Panda™ bamboo. This clumping, non-invasive bamboo is extremely cold hardy and heat tolerant, and has enormous potential in landscapes across North America and Canada. It grows into a large clump (6–8 ft wide) with arching stems. The maximum height is 10 ft and



**Figure 3.** *Fargesia rufa* Green Panda™ bamboo in the landscape.



**Figure 4.** *Fargesia rufa* Green Panda™ bamboo leaves.

culm diameter is 0.5 inches. It is a U.S.D.A. hardiness Zone 5–9 plant that is originally from Gansu, China, and it is a favorite food of the giant panda. Remarkably, this form grows well in shade as well as full sun.

***Fargesia scabrida*, Oprins Selection, Asian Wonder™ bamboo.** A new introduction originating also from China, this clumping bamboo has an interesting overall character of very narrow leaves and a graceful appearance. Stems show great



**Figure 5.** *Fargesia scabrida* Asian Wonder™ bamboo stems in a production greenhouse in Belgium.



**Figure 6.** *Fargesia scabrida* Asian Wonder™ bamboo stems.



**Figure 7.** *Fargesia robusta* 'Pingwu', Green Screen™ bamboo in the landscape.

color, with orange culm sheaths and steely-blue new culms (stems). Culms mature to olive green. Maximum height is approximately 16 ft with a U.S.D.A. Zone 5–8 rating. This bamboo prefers sun to partial shade.

***Fargesia robusta* 'Pingwu', Green Screen™ bamboo.** This clone has been cultivated as *Fargesia robusta* 'Pingwu' in Europe for several years. It is very upright, with persistent culm sheaths that are white and densely covered with hair. A clumping bamboo perfect for use as a hedge or screening plant, it has the great benefit of its non-invasive root system and robust size. This exciting new bamboo holds up well in the heat and humidity of the Southeastern U.S.A. unlike other *Fargesia* types. The maximum height is 18 ft and U.S.D.A. cold hardiness Zone 6–9.

## PROPAGATION

Propagation of temperate bamboos can be accomplished by traditional vegetative division, by seed, or via micropropagation. Traditional vegetation is the most simple and the most widely used method, however it is both labor-intensive and time-sensitive, as the plants are quite vulnerable to stress during their active shooting periods. Seed propagation is rare due to the irregular and/or infrequent flowering cycles of most bamboos.

Micropropagation of bamboo is by far the best method for mass-production, although the technique is very difficult, with very specific protocols for each species and form. Micropropagation can be done from seeds or from meristematic tissue, and from type species or selected clones. Micropropagation (tissue culture) is simply taking a small piece of a plant and multiplying more plants from that small piece.

BambooSelect plants are micropropagated from small branch cuttings. Micropropagation via axillary branching results in propagated plants which are geneti-

cally identical to the mother plant. And because these bamboos begin their life in a test-tube, they are clean and disease-free. From young plantlet to rooted plug, they receive a balanced diet to provide all their nutritional needs, and result in full, robust, vigorous plants.

The advantages of bamboo mass propagation using micropropagation are:

- Compact plants.
- Uniform quality.
- High-scale production.
- Allows year-round production of a wide range of bamboos.

It takes about 9 months from initiation of the meristematic tissue to a rooted plug, and approximately 3–6 months from a rooted plug into a 1-gal-size pot for a saleable plant capable of withstanding installation into the landscape.

### **GROWING BAMBOO**

Some general guidelines for the U.S. Northeast Region are the following:

- The best time of year to plant or transplant is spring
- Site with some protection from drying winter winds
- Plant in well-drained soils (avoid water-logged, heavy clay soil)
- Use compost and/or organic matter as mulch to provide nutrients and improve soil structure
- Water regularly until established; bamboos are very drought tolerant once established
- Use an organic lawn food / high nitrogen fertilizer; bamboo is a grass
- Bamboos adapt to wide range of soil pH, but seem to prefer mildly acidic conditions
- Apply organic mulch in the fall for winter protection
- Anti-desiccants are an option in wind-exposed or challenging sites
- New shoots emerge beginning mid-April, so take care not to disturb or stress plants during this period
- Prune anytime for aesthetics

### **CONCLUSION**

The genus *Fargesia* contains some wonderful types and forms of bamboo that can enhance landscapes across many temperate zones, adding unique texture and year-round appeal as a vigorous evergreen with versatility and function. From Atlanta to Boston to Chicago to Denver to San Francisco to Seattle, the potential for the addition of these plants into our landscapes is enormous. In a time when we are all looking for something different, a change from other, less interesting choices, let's consider non-invasive bamboo — the genus *Fargesia* as an evergreen grass for hedges, for screens, or simply as an elegant specimen. For more information, go to: <[www.BambooSelect.us](http://www.BambooSelect.us)>.