

WHY BAMBOO?

Primarily basketmakers and craftsman, today, use bamboo. Until recently, there was not that much interest in propagating bamboo until the Chitimacha Tribal Council asked the Natural Resources Conservation Service (NRCS) in Louisiana for help. Presently, there is ongoing research and experiments with the local bamboo found growing by the reservation at the Louisiana NRCS Plant Materials Center. In the neighboring state of Mississippi the Choctaw Tribal Council has asked for help from the Mississippi NRCS in propagating *Arundinaria gigantea* ssp. *tecta* (NRCS). However, *A. gigantea* ssp. *tecta* is found only in the southeastern part of Louisiana.

Bamboo could play an important role in livestock management, wildlife management, erosion control, windbreaks, nutrient management, and waste management. It is considered the highest-yielding native pasture for domestic cattle in the southeastern United States, providing low-maintenance, highly nutritious grazing all year (Biswell and Foster, 1942; Biswell et al., 1945). Crude protein, calcium, and phosphorus are well above the requirements for maturing cattle (Walkup 1991). It can withstand flooding, drought, and intense surface fires, making it a remarkably stable source of forage (Walkup 1991). Canebrakes also provide habitat for wildlife. Many birds and small mammals use canebrakes for nesting, cover, and as a food source and many herbivores, such as black bear, rabbit, pig, deer, use bamboo as forage. Bamboo has a massive rhizome and root system. It is planted sometimes as a hedgerow, windbreak, and along ditches for erosion control. The plants form a dense canopy aboveground and underground to catch the soil and prevent water and wind erosion. It also provides protection for other plants growing nearby by protecting them from the wind. Bamboo responds dramatically to fertilizer. If bamboo is found downstream of fields with runoff, it catches the runoff and uses the fertilizer to increase its yields. Therefore, it should be planted for nutrient management purposes. Also, bamboo can be planted along manure lagoons because of its dense canopy aboveground and underground. It can filter the wastes along the banks of the manure lagoons. Bamboo has many uses and *A. gigantea* is a native to Louisiana. Therefore, it should grow very well in the right conditions in Louisiana and can be used for several purposes.



Chitimacha Baskets 2001



Arundinaria gigantea ssp. *gigantea*
(Hitchcock 1950)



Arundinaria gigantea ssp. *tecta*
(Hitchcock 1950)

NOMENCLATURE

Scientific Names – There are two species of bamboo that are native to Louisiana. They are *Arundinaria gigantea* (Walt.) Muhl. ssp. *gigantea* and *Arundinaria gigantea* (Walt.) Muhl. ssp. *tecta* (Walt.) McClure. The major difference between the two species is that according to McClure (1963), *A. gigantea* ssp. *tecta* has longitudinal air canals in the rhizomes. Also, *A. gigantea* ssp. *gigantea* is found frequently on the edges and in the forests throughout the state except the coastal marsh and *A. gigantea* ssp. *tecta* is found rarely in the pine flatwoods in the southeastern part of the state (Allen 1992).

Common Names – The common names for both subspecies of *A. gigantea* are used interchangeably. Literature and informal references cite bamboo, cane, cane reed, canebrake, canebrake giant cane, giant cane, large cane, native cane, river cane, southern cane, swamp cane, switchcane, and wild cane.

Cultivars – There is one known cultivar of *A. gigantea* and it is called “Macon”; however, no other information about it is found.

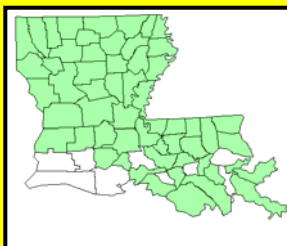
DESCRIPTION

Bamboo is a woody, evergreen, erect, rhizomatous grass. *A. gigantea* is the only bamboo species native to the United States. It spreads primarily by the large, fast growing rhizomes. However, below a certain depth, which varies, the runners are like clumpers. The rhizomes are usually found within the top 6” to 12” of soil (NRCS). Bamboo also reproduces by flowering. However, it is not frequent and is unpredictable. Usually after it flowers, the plant dies from the depletion of nutrient reserves in the rhizomes. Using fertilizers (Janzen 1974) can prevent this from occurring.

Bamboo can easily be distinguished from other grasses by its stout, hollow jointed stem (Walkup 1991) with a diameter of up to 3”. It generally ranges in height from 2’ to 25’ making it the largest native grass in the United States. It can withstand temperatures down to -23°F if heavily mulched. The flowers are an open panicle with 8 to 12 spikelets that are 2 ½” long. The seeds are small, brown, and ellipsoid.

HABITAT

Canebrakes once covered vast areas of fertile river bottomland in the pre-colonial United States from Georgia and Texas to Maryland and Ohio. A single river valley grove could be 2 or 3 miles wide and 100 miles long.



Arundinaria gigantea distribution
(Thomas and Allen 1993)



Arundinaria gigantea
inflorescence (TAMU-
BWG Image Gallery)

Since they occupied fertile land and were easy to clear, the early settlers converted most of the canebrakes to farmland (Tripplebrook Farm 2000). Today, bamboo is found as an understory plant in forests or in thickets along fencelines (Platt and Brantley 1993). It grows with a pH of 5 to 6.9. It has a low salinity tolerance and is shade intolerant. Bamboo is found in a wide variety of soil types from coarse textured soils to fine textured soils. It can withstand temperatures of -23° F to 105° F.

PLANT FORM

Seed production by bamboo is very rare and viability is low. It occurs at intervals of many years. When they do come into flower most of the plants energies are directed into producing seed and consequently the plant is severely weakened. They sometimes die after flowering, but if left alone they will usually recover though they will look very poorly for a few years (Gardenbed.com).

Most of the successes with propagating bamboo are vegetatively. It is better to plant rhizomes than isolated culms but it is much more labor intensive than planting culms. The culms take longer to develop roots and support growth

because they have no roots. In deciding between these alternatives, planting time, labor, and site should be considered (Platt and Brantley 1993).

PLANTING METHODS

The best time to transplant bamboo is during the late fall to early spring in a rich, fertile loam. If the age of the plant is known, then use plants that are 2 to 3 years old. The length of stem or root that has the rhizomes attached should be at a minimum of 2’ in length. If culms are remaining on the rhizome, they should be trimmed to 18”. If culms are being used, they should be trimmed to 6’ by removing the material from the apical end of the stem. The rows should be at least 24” to 36” in width. The topsoil should be placed on top of the rhizome or culm at a maximum of 6” and a minimum of 3”. Planting should be done 15’ to 20’ apart. Bamboo planted on 20-foot centers takes up 400 square feet or 109 plants per acre. Bamboo planted on 15-foot centers takes up 225 square feet or 194 plants per acre (Platt and Brantley 1993, Lewis 1995)



NRCS 2000

MANAGEMENT

Through the first year make sure plants remain moist, but not water clogged. Then water every week when there is no rain. To control weeds, it is recommended to pull the weeds, mow, or use herbicides. Do not use cultivating tools to work around the bamboo, because the rhizomes are close to the surface and can be damaged. A burn every 7 to 10 years is recommended. Developing a grove or plantation usually takes 10 to 15 years to bring the plants to a desirable size. (Lewis 1995)

FERTILIZER

Please do not fertilize within the first year of growth. Fertilizer can shock the plant and cause mortality. Bamboo grows its rhizomes in summer and early fall. This is the best time to apply fertilizer after the first year’s growth. Typical fertilizer that have about twice the nitrogen, phosphorus, and potassium (NPK) are generally recommended but have a soil test done to make sure the correct amount of fertilizer is applied. Every other year, any type of composted manure (chicken, horse, and cow) can be substituted. Apply around 4” deep in late fall or early winter (NRCS). Mulch the soil about 3” around the planting. It adds organic matter to the soil, restricts the weeds, and conserves moisture in the soil (Science and Education Admin. 1978).

CONTROL

If the bamboo is thinned or harvested, make sure that there is enough canes left behind to shade the ground. The sun might dry out the soil around the plants. If too many canes are cut, the planting becomes thin and impoverished. Saw the culms as close to the ground as possible when thinning or harvesting. Do not use an axe and leave jagged spears (Lewis 1995).

To confine the bamboo, there are three methods. The first method is to cut off the rhizomes twice each year by running a subsoil plow about 15” deep around the bamboo. Another method is to put a metal barrier around the bamboo. The metal should extend about 2’ into the soil. The last method is to cut off the new shoots or treating them with a herbicide as soon as they start in the spring (Sturkie, Brown, and Watson 1968).

OTHER CONSIDERATIONS

Insects – Bamboo does sustain populations of aphids. If the aphids become a nuisance, then thin out the bamboo population. The aphids multiply when the bamboo is crowded and sooty mold grows on the aphid honeydew (Lewis 1995).

Drought – If you want to maximize the bamboo’s size, then water every week when there is no rain. Bamboo needs at least 1 inch of water every 10 days.

Herbivore grazing – Bamboo is sensitive to overgrazing. Plants are completely defoliated because the leaves are produced on branches well above the ground. Management practices such as fencing and trapping may have to be used if it becomes a serious problem (Walkup 1991).

BIBLIOGRAPHY

- Allen, C.M. 1992. Grasses of Louisiana, 2nd ed. Cajun Prairie Habitat Preservation Society, Eunice.
- Adamson, W.C., G.A. White, & W.O. Hawley. 1978. Bamboo production research at Savannah, Georgia, 1956-1977. Agricultural Research Service, ARS-S-176, United States Dept. of Agric., Washington, D.C.
- American Bamboo Society. 2000. <http://www.halycon.com/abs/>.
- Arundinaria*. 2000. <http://trippelbrookfarm.com/plants/Arundinaria.html>.
- Arundinaria gigantea* (Canebrake). Lewis Bamboo Groves. <http://lewisbamboo.com/gigantea.html>.
- Arundinaria gigantea tecta* (Switchcane). Lewis Bamboo Groves. <http://lewisbamboo.com/atecta.html>.
- Bamboo Main. 2000. <http://www.farminfo.org/othercrops/bamboo-m.htm>.
- Bamboo Sourcery Catalog. 2000. <http://home.earthlink.net/~bamboosource/catalog.htm>.
- Barnhart, E. 1989. Earle Barnhart's introduction to hardy bamboos. <http://www.halycon.com/abs/BarnhartIntro.html>.
- Botany/arundinaria. 2000. <http://botany.com/arundinaria.html>.
- Chitimacha Baskets. 2001. <http://hometown.aol.com/chitimacha/chitimachabaskets.html>.
- Consumer Online. 1999. <http://www.consumer.org.nz/home/jan99-bamboo.html>.
- GardenBed.com: *Arundinaria gigantea* – Cane reed. <http://gardenbed.com/A514.cfm>.
- Gigantea. 1999. Burton's bamboo garden. <http://www.burtonsbamboogarden.com/gigantea.htm>.
- Hitchcock, A.S. 1950. Manual of the grasses of the United States. 1971 reprint of the 1950 edition. Dover Publications, Inc., New York.
- Louisiana Grasses: Distribution of genus *Arundinaria*. http://www.csdl.tamu.edu/FLORA/cgi/lagrasses_map_pagegen=Arundinaria.
- Lane, M. 1996. Evaluation of plant species for vegetative hedges. United States Dept. of Agri. Natural Resources Cons. Serv.-Jamie L. Whitten Plant Materials Center, Coffeerville, Miss.
- Lewis, D. 1995. Bamboo on the farm. Bamboo People, Inc., Seattle.
- Maas-Gardens Houston and Gardening Supply Source. Garden center and nursery. <http://www.maasnursery.com/bamboo.htm>.
- McClure, F.A. 1963. A new feature in bamboo rhizome anatomy. *Rhodora* 65:134-136.
- Midwestern Native Flora. 2001. <http://www.npwrc.usgs.gov/resource/othrdata/plntguid/species/arungiga.htm>.
- Natural Resource Conservation Service-Mississippi Choctaw Field Office. Native cane conservation guide. United States Dept. of Agri., Washington, D.C.
- Platt, S.G. & C.G. Brantley. 1997. Canebrakes: An ecological and historical perspective. *Castanea* 62(1): 8-21.
- Platt, S.G. & C.G. Brantley. 1993. Switchcane-Propagation and establishment in the Southeastern United States. *Restoration and Management Notes* 11(2):134-137.
- Science and Education Administration. Revised 1978. Growing ornamental bamboo. Home and Garden Bulletin 76. United States Dept. of Agri., Washington, D.C.
- Sturkie, D.G., V.L. Brown, & W.J. Watson. 1968. Bamboo growing in Alabama-Bulletin 387. Agri. Experiment Station: Auburn Univ. TAMU-BWG Image Gallery. <http://www.csdl.tamu.edu/FLORA/gallery.htm>.
- TAMU-BWG Image Page: *Arundinaria gigantea*. <http://www.csdl.tamu.edu/FLORA/image/k4389200.htm>.
- Thomas, R.D. & C.M. Allen. 1993. Atlas of the vascular flora of Louisiana. Volume I: ferns, fern allies, conifers, & monocotyledons. Louisiana Dept. Wildlife & Fisheries, Baton Rouge.
- Walkup, C. 1991. *Arundinaria gigantea*. In: Fischer, William C., compiler. The Fire Effects Information System (Database). United States Dept. of Agri., Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory, Missoula, Mont.
- Watson, L. & Dallwitz, M.J. (1992 onwards). Grass Genera of the World. <http://biodiversity.uno.edu/delta/>.

For more information about bamboo, please contact:

USDA/NRCS
Golden Meadows Plant Materials Center
438 Airport Road
Galliano, Louisiana 70354
Phone: (985)475-5280
Fax: (985)475-6545

For more information about other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>>.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

Arundinaria gigantea (Walt.) Muhl Bamboo

