



# BAMBOO: A MULTIPURPOSE AGROFORESTRY CROP

**CURRENT TOPIC**

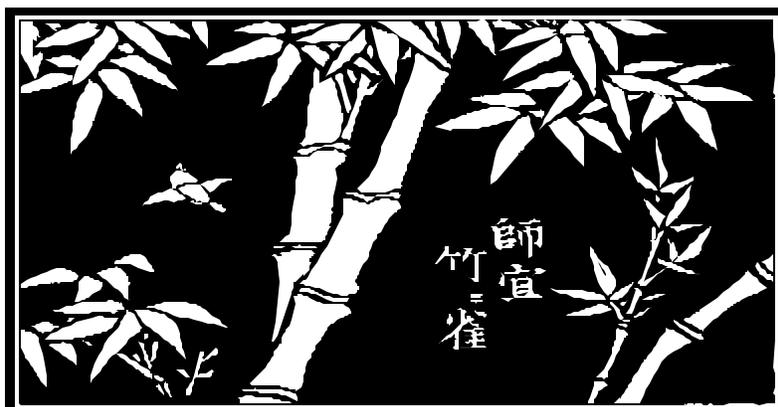
By [Steve Diver](#), NCAT Agriculture Specialist, August 2001

The bamboos are gaining increased attention as an alternative crop with multiple uses and benefits. These long-lived, woody-stemmed perennial grasses are usually evergreen in climates to which they are adapted; those of temperate regions grow a complete set of new leaves each spring, the old ones falling away as the new ones develop (1). Worldwide, approximately 87 genera and over 1,500 species of bamboo exist (2), with roughly 100 species comprising those of economical importance.

Two species of bamboo are native to the United States. *Arundinaria gigantea* – commonly known as giant bamboo, canebrake, or rivercane – occurs along rivers and streams in southern Ohio, Indiana, Illinois, Missouri, Oklahoma, and other states to the south. *A. tecta* – switch cane – is a smaller form confined to the Atlantic and Gulf coastal regions from Maryland southward. Bamboos are also native to Central America, South America, and the Caribbean Islands. Most of the commercial and ornamental bamboos grown in the U.S. have been introduced from China and Japan.

Bamboo consists of two general types: clumping and running. The clumping types are typically of tropical or subtropical origin and therefore have limited geographical suitability in the United States since they cannot withstand freezing temperatures. An important exception among the clumping types is the Panda bamboo from the Himalayas, *Fargesia* spp., which is cold hardy to -25° F.

Running bamboo, which includes the most important genus of temperate climate species, *Phyllostachys*, can withstand occasional low winter temperatures between -10° and +15° F. The running types are typically top-hardy in sections of the Lower South, Southwest, and Pacific Coast (1), and root-hardy in northern climates (i.e., plants regrow from roots even if the exposed canes are winter-killed). Cold hardiness is an important characteristic of temperate bamboo species, along with height of cane, diameter of cane, and intended use.



<b>Bamboo Genera Distinguished by Growing Type: Clumper or Runner</b>	
<b>Clumper</b>	<b>Runner</b>
Arundinaria	Chimonobambusa
Bambusa	Indocalamus
Chusquea	Phyllostachys
Dendrocalamus	Pleioblastus
Drepanostachyum	Pseudosasa
Fargesia	Sasa
Himalayacalamus	Semiarundinaria
Otatea	Shibatea
Thamocalamus	Sinobambusa
<b>Source:</b> Modified from "The World of Bamboo" by Gib Cooper, Tradewinds Bamboo Nursery <a href="http://www.bamboodirect.com/bamboo/info/world.html">http://www.bamboodirect.com/bamboo/info/world.html</a>	

Bamboo has three principal uses: [1] **domestic use around the farm** (e.g., vegetable stakes, trellis poles, shade laths); [2] **commercial production for use in construction, food, and the arts** (e.g., concrete reinforcement, fishing poles, furniture, crafts, edible bamboo shoots, musical instruments); and [3] **ornamental, landscape, and conservation uses** (e.g., specimen plants, screens, hedges, riparian buffer zone).

Bamboo canes intended for strength and durability— furniture, flutes, crafts, fencing—should be harvested at three to five years of age. Prior to the end of the third year, cane tissue is still filled with sap and comparatively soft. Thus, marking and selecting canes is a regular part of grove management. Of course, bamboo canes serve many utilitarian purposes around the farm— bean poles, pecan nut tree limb shakers, vegetable trellises and stakes— and these latter uses can be made of any canes that are available.

Products made from U.S.-grown bamboo include fishing poles, flutes, furniture, and crafts. Much of this bamboo is harvested from stands in southern Mississippi, Louisiana, Florida, and the West Coast. Most Americans are probably more familiar with bamboo as an ornamental specimen plant or living screen, and opportunities exist for bamboo as a niche nursery plant.

Though bamboo acreage has historically been limited in the United States, there is renewed interest in bamboo as a commercial crop with many uses. The *Temperate Bamboo Quarterly*, published since 1993, features useful bamboo species and developments, and bamboo has been explored as an agroforestry crop through several conferences and workshops in the Pacific Northwest.

The Pacific Northwest states of Oregon and Washington have evolved into a center of commercial bamboo activity in the U.S. On-farm research trials with bamboo in Washington resulted in a report that summarized growth parameters (number of culms, average culm diameter, diameter of plant spread, and maximum plant height) for 26 bamboo species (3).

Reports from on-farm trials like this are helpful because they provide useful data on bamboo species adapted to different agro-climatic zones in the temperate U.S.

Mark Meckes (4), a bamboo advocate with a non-profit organization that promotes underutilized plant resources, outlined five steps in developing a successful bamboo venture:

- identification and selection of varieties most suitable for desired end uses
- grove management procedures (planting, maintenance, and harvesting)
- materials processing (grading, cleaning, and drying)
- product manufacturing (equipment, materials, tools, jigs, dyes, paints, varnishes)
- marketing (customer identification, distribution, advertising)

### **Potential Bamboo Markets**

Potential markets and bamboo products in the United States are summarized below. In most circumstances, bamboo should be viewed as a *complementary* crop that fills a niche market or serves a purpose on the farm, rather than a *primary* cash crop.

- *Plant Material:* Landscape nursery plant material; zoos; botanical gardens
- *Food:* Fresh bamboo shoots
- *Construction Material:* Concrete reinforcement; bamboo fencing; housing
- *Musical Instruments:* Flutes; wind chimes; pan pipes; xylophones
- *Tools:* Bamboo leaf rakes
- *Furniture & Crafts:* Toys; wood working inlay; trim work; paneling; basketry weaving; frames; jewelry; fishing poles; floral stakes; garden stakes; trellis poles
- *Conservation:* Living screens; agroforestry; riparian filter strips; constructed wetlands; wildlife habitat

### **Bamboo Agroforestry**

Agroforestry is the integration of woody plants with other ag enterprises such as crop or livestock production. The idea behind agroforestry is to derive both economic and ecological benefits, two key goals of sustainable agriculture.

Bamboo as a woody grass plant is uniquely suited to agroforestry. Some of the many uses of bamboo in agroforestry are summarized in the table below.

Agroforestry Function $\frac{3}{4}$ Primary Use	Agroforestry Products $\frac{3}{4}$ Value-Added
• Intercropping	• Timber
• Riparian vegetation filter	• Craftwood
• Constructed wetlands	• Fiber crop
• Living screens	• Livestock forage
• Permaculture	• Bamboo shoots

## Bamboo Shoots as a Commercial Food Crop

Each spring, ATTRA gets phone calls on cultivation of bamboo shoots as a specialty food crop. Bamboo shoots are a popular item in Asian stir fry and as a pickled condiment.

The most important genus for bamboo shoot production in the temperate U.S. is *Phyllostachys*, which consists of about 60 species, all of which are edible. Important food species include *P. dulcis*, *P. edulis*, *P. bambusoides*, *P. pubescens*, *P. nuda*, and *P. viridis* (5).

An early USDA bamboo researcher recommended boiling fresh bamboo shoots prior to use for about 18–20 minutes. Bamboo shoots from species imparting a bitter taste should get a change of water after the first 8–10 minutes of cooking (6).

Daphne Lewis, author of *Bamboo on the Farm*, notes that the United States imports 30,000 tons of canned bamboo shoots each year from Taiwan, Thailand, and China. Lewis wrote “it would take 30,000 acres of badly managed bamboo to produce 30,000 tons or 3,000...superbly managed acres” (7).

Small-scale growers are remarkably successful in creating demand for fresh, locally grown produce through niche marketing. Local markets for bamboo shoots include Asian restaurants, farmers' markets, and health food stores, especially in towns with ethnic populations that relish bamboo shoots. Harvesting shoots is also a convenient method of controlling the spread of running-type bamboos.

In 1998, Tim Ogden (8) of the Oregon Bamboo Co. in Myrtle Creek, OR, was featured in an article on bamboo farming (9). He said, “bamboo comes into production in 3 to 4 years and reaches maximum productivity in 7 to 8 years, producing 2 to 10 tons of bamboo shoots per acre. We sell everything we can produce off our mature 3-acre grove and we'll be able to sell all the production from our second 3-acre grove, too, when it comes into production.” Ogden said distributors pay up to \$2 per pound for his bamboo shoots, which retail for about \$6 per pound. Ogden plants varieties that originated in Southwestern China. The plants are spaced every 10 ft. in rows spaced 20-ft. apart. Oregon Bamboo Co. sells an informational packet titled *American Bamboo Agriculture*, which includes a 35-minute video and a hardbound book, for \$22.

Sue Turtle, co-editor of *Temperate Bamboo Quarterly*, explained that bamboo shoots should be harvested as soon as you can feel the tip of the bamboo shoot in the ground with the bottom of your feet. “Once the shoots emerge from the ground, they quickly become tough and bitter” (10). In the following excerpt from the Spring–Summer 1995 issue of *Temperate Bamboo Quarterly*, she notes:

Studies in China on the changes in nutrient content of bamboo shoots of different ages show there is a definite advantage to harvesting the shoots while they are still underground with sheaths just appearing above ground. Tests were done, using *Phyllostachys pubescens*, by harvesting at three different stages: underground, 5 days above ground, and 10 days above ground. It was found that protein and amino acid content are highest when shoots are still underground. In fact the author stated that protein content of a bamboo shoot (*P. pubescens*) underground is higher than any other vegetable (10).

Bamboo shoot production in perspective:

- It does not seem likely that large-scale bamboo shoot production will become a common agricultural enterprise in the United States. Countries that export this product have decided advantages over American farmers with respect to climate, labor, and processing costs.
- This should not deter market farmers from exploring bamboo cultivars, growing methods, and harvesting techniques to sell fresh bamboo shoots to niche markets, but it does give pause to great expectations that bamboo shoots are an easy cash crop or even the primary reason to raise bamboo.

### **Bamboo Plant Material**

A list of bamboo species and their characteristics (e.g., growth habit, cold hardiness, size) and uses (e.g., bamboo crafts or conservation purposes) is certainly one of the first things potential bamboo growers need information on. In this respect, prior issues of *Temperate Bamboo Quarterly* and *The Journal of the American Bamboo Society* are invaluable (see below).

Since bamboos are vegetatively propagated, nurseries ship live plants. Consequently, some plant material may be available only during certain months of the year.

A complete listing of bamboo species and suppliers in the U.S. is available in print through the American Bamboo Society (see address below), as well as on the Internet.

ABS 2000 Bamboo Species Source List No. 20

<http://www.bamboo.org/abs/SpeciesSourceList.html>

*The 2000 Bamboo Species Source List is available in HTML format on the American Bamboo Society's Home Page. Categories include Species Descriptions; Bamboo Plant and Product Suppliers List; and Index of Cold Hardy Species.*

ABS 2001 Bamboo Species Source List No. 21

HTML Gateway

<http://www.bamboo.org/abs/SpeciesSourceListPages/SpeciesSourceListDownload.html>

*The 2001 ABS Species Source List is also available in Adobe Acrobat Reader format (PDF). It is broken into three parts: Part 1 is the Introduction, Part 2 contains the Species List in table format, and Part 3 is the list of bamboo Suppliers.*

Part 1 – Introduction (4 pages)

<http://www.bamboo.org/abs/SpeciesSourceListPages/2001SourceList01.pdf>

Part 2 – Species List (20 pages)

<http://www.bamboo.org/abs/SpeciesSourceListPages/2001SourceList02.pdf>

Part 3 – Plant and Product Suppliers (12 pages)

<http://www.bamboo.org/abs/SpeciesSourceListPages/2001SourceList03.pdf>

Bamboo Under Cultivation at 'Our Nursery'

<http://www.thefarm.org/businesses/bamboo/bam98a.html>

*Adam and Sue Turtle, editors of Temperate Bamboo Quarterly, also run 'Our Nursery' which offers an extensive collection of hardy bamboo species. Their "Bamboo Under Cultivation" list provides an especially helpful summary of bamboos adapted to temperate growing conditions, with species, height, diameter, and hardiness temperature categories.*

Other items of interest—accompanying this packet or mentioned as a resource—that address bamboo species adapted to U.S. growing conditions, include:

- *Hardy Bamboos for Shoots & Poles* by Daphne Lewis
- *The Gardener's Guide to Growing Temperate Bamboos* by Michael Bell
- *Bamboo in the Future*. 1995. By Sue and Adam (eds.) *Temperate Bamboo Quarterly*. Spring-Summer. p. 29, 54–58.
- *Bamboos*. 1979. By John R. Dunmire, et al. (ed.) *Sunset New Western Garden Book*, 4th Edition. p. 194–197. Lane Magazine and Book Company, Menlo Park, CA.
- *Plant Evaluation Notes*. 1996. By Richard G. Hawke. *Perennial Plants*. Vol. 4, No. 2. (Spring). p. 29, 31, 33–37.

### Sources of Information

#### Periodicals:

The American Bamboo Society is a national organization with chapters in Florida, Puerto Rico, Southeastern U.S., Northeastern U.S., Louisiana, Texas, Arizona, California, Oregon, Pacific Northwest, and Hawaii. The ABS publishes a magazine and a journal, *Bamboo Science and Culture* (formerly *The Journal of the American Bamboo Society*). Of particular interest is the Society's *Bamboo Species Source List* (noted on the previous page), which is available on the web or by sending \$5.00 for shipping and handling. The ABS also sponsors a bookstore that sells important books and reprints (see Bookstore section below). Contact:

The American Bamboo Society  
Michael Bartholomew, Membership  
750 Krumkill Road  
Albany, NY 12203-5976  
518-458-7618 Home  
518-458-7625 Fax  
[abs@bamboo.org](mailto:abs@bamboo.org)  
<http://www.bamboo.org/abs/>

*Annual dues are \$35; includes membership in the American Bamboo Society and local chapter of ABS for the calendar year, as well as subscription to the Magazine and Journal.*

*Temperate Bamboo Quarterly*, published by Sue and Adam Turtle, is an indispensable popular journal on bamboo. The Turtles are co-founders of the Southeastern Highland Chapter of the American Bamboo Society. They've also established a bamboo park that is reported to be the largest collection of bamboo—200 species from 22 genera—east of the Mississippi River. In addition, they operate a bamboo nursery called 'Our Nursery'. *TBQ* seeks to publish original and very obscure information on bamboo; in doing so it presents one-of-a-kind articles. The

quarterly is also filled with B&W photographs and line drawings, along with numerous book reviews. Contact:

Temperate Bamboo Quarterly

Sue and Adam Turtle

30 Myers Road

Summertown, TN 38483

931-964-4151

Cost: \$28/4 issues per year

<http://www.thefarm.org/businesses/bamboo/tbq.html>

### Books & Proceedings:

*BAMBOO in the United States: Description, Culture, and Utilization* (1) is USDA Agriculture Handbook No. 193, published in 1961. This 74-page handbook provides a good introduction to bamboos with economic or ornamental potential in the United States. Descriptions are provided for both hardy, running bamboos and tropical, clumping bamboos. Sections on cultivation, harvesting, pests, and utilization are included. Reprints are available through the American Bamboo Society bookstore (see below).

*The Bamboos* by Floyd A. McClure, a 368-page book reprinted by Smithsonian Institution Press in 1994, was originally published as *Bamboos: A Fresh Perspective* by Harvard University in 1966. McClure was a contributor to the USDA Agriculture Handbook on bamboos in 1961. *The Bamboos* is the classic treatise on bamboo in U.S. literature, with sections on the vegetative phase, the reproductive phase, elite bamboo species, and propagation methods. The historical notes, photos, and illustrations may be worthy of purchase alone. Available for \$18.95 through:

Smithsonian Institution Press

470 L'Enfant Plaza

MRC 950

Washington, DC 20560

202-287-3738

800-782-4612

202-287-3184 Fax

<http://www.si.edu/sipress/>

*The Book of Bamboo: A Comprehensive Guide to This Remarkable Plant, Its Uses and Its History* by David Farrelly is probably the most interesting and comprehensive book on bamboo. It contains information on the history and culture of bamboo, as well as varieties, cultivation, harvesting, curing, and utilization. It is richly illustrated and contains an extensive bibliography. This 340-page book, originally published by Sierra Club Books in 1984, was recently reprinted and retails for about \$20. Contact:

Sierra Club Books

85 Second. St., 2nd Floor

San Francisco, CA 94105

415-977-5600

[store@sierraclub.org](mailto:store@sierraclub.org)

<http://www.sierraclub.org/books/>

*Bamboo on the Farm* by Daphne Lewis, published in 1993, is a 48-page primer on the potential uses and cultivation of bamboo in the U.S. Suggested large-scale uses of bamboo include highway roadsides, traffic islands, highway slopes and cuts, stormwater drainage swales, sound barrier walls, strip mine reclamation, sewage treatment, dairy manure treatment, pulp plantations, and animal fodder. A series of design illustrations show how a farm is transformed by the introduction of bamboo. Available for \$21 from:

Bamboo Gardener  
2609 NW 86th Street  
Seattle, WA 98117  
206-782-3490  
[bambuguru@earthlink.net](mailto:bambuguru@earthlink.net)  
<http://www.bamboogardener.com/>

*Hardy Bamboos for Shoots & Poles: Thirty Varieties of Bamboo for Farms in USDA Zones 7,8,9* is a 28-page follow-up pamphlet by Daphne Lewis, published in 1998. It contains information on 30 varieties of bamboo, presented largely in chart form. The intention is to help farmers compare bamboos and decide which ones to plant. Plant characteristics include: Maximum height in feet, maximum diameter in inches, minimum temperature in degrees Fahrenheit, quality of poles and shoots, shooting season, forage quality, botanical and common names, etc. Available for \$12 from the Bamboo Gardener (see address above).

*The Gardener's Guide to Growing Temperate Bamboos* by Michael Bell, published in 2000 by Timber Press, has quickly become a highly recommended garden guide to selecting and growing bamboos in the temperate climatic zones of North America and Europe. Bell is the president of the UK Bamboo Society. This 160-page book addresses history, uses, propagation, and cultivation of bamboos, with tips on finding and growing the more unusual species. The text is accompanied with rich color photography. Available for \$29.95 through Timber Press:

Timber Press  
133 SW 2nd Ave., Suite 450  
Portland, OR 97204-3527  
503-227-2878  
800-327-5680  
<http://www.timber-press.com>

*Bamboo and the Pacific Northwest: Proceedings of 1994 Pacific Northwest Bamboo Agroforestry Workshop* is a 97-page spiral-bound book featuring: history of bamboo in the U.S.; bamboo potential in the Pacific Northwest; bamboo on the farm; experiences in bamboo agroforestry; bamboo pulp and paper; bamboo timber; and bamboo agroforestry in Vietnam. The proceedings is available for \$20 from:

PNW Bamboo Agroforestry Workshop  
c/o Tradwinds Bamboo Nursery  
28446 Hunter Creek Loop  
Gold Beach, OR 97444  
503-247-0835  
Contact: Gib Cooper  
[bambugib@harborside.com](mailto:bambugib@harborside.com)  
<http://www.bamboo.org/abs/GeneralInfoPages/PNW1994BambooAgro.html>

*Proceedings of the 1997 PNW Bamboo Agroforestry Conference* is a 139-page book featuring: Bamboo in sustainable agriculture; building products made from Moso bamboo; advanced bamboo/epoxy composites; bamboo industrialization in North America; temperate bamboo species as forages for livestock; building a bamboo farm; bamboo shoot yields in a Henon grove; bamboo agroforestry in China; bamboo polyculture; bamboo architecture, among others. The proceedings is available for \$30 from:

Ron Kay

2014 SE 57th Ave.

Portland, OR 97215-3411

503-234-8832

[lkay710377@aol.com](mailto:lkay710377@aol.com)

<http://www.bamboo.org/abs/GeneralInfoPages/PNW1997BambooAgro.html>

*The Bamboo Handbook* by Durnford Dart is a 120-page guide to bamboo selection, cultivation, maintenance, and utilization in Australia. A pioneer in commercial production of bamboo in Australia, Dart goes into the economics of growing eight bamboo species on the farm over a 5-year period. Available in the U.S. for \$33 through Tradewinds Bamboo Nursery (see address above).

#### Bookstores:

The American Bamboo Society Book Store, managed by Patricia Hillery in Austin, TX, carries a nice selection of bamboo books as well as photocopy reprints of out-of-print booklets and bulletins.

ABS Book Store

Patricia Hillery

6501 East Hill Drive #110

Austin, TX 78731

512-345-3852

<http://www.bamboo.org/abs/BooksOnBamboo.html>

The Bamboo Gardener, distributor for Daphne Lewis's books, carries an extensive listing of books, catalogs, newsletters, proceedings, and reprints concerning bamboo and Japanese gardening. An excellent source for hard-to-find materials and back issues of old newsletters and journals.

Bamboo Gardener

2609 NW 86th Street

Seattle, WA 98117

206-782-3490

[bambuguru@earthlink.net](mailto:bambuguru@earthlink.net)

<http://www.bamboogardener.com/>

Tradewinds Bamboo Nursery (see address above) also carries a nice selection of bamboo books, proceedings, journals, and technical reports.

*Tradewinds Bamboo Nursery online book catalog*

<http://www.bamboodirect.com/bamboo/catalog/booksctlg.html>

<http://www.bamboodirect.com/bamboo/price/books.html>

Bamboo Web Links:

American Bamboo Society

<http://www.bamboo.org/abs/>

Bamboo Society of Australia

<http://www.bamboo.org.au>

European Bamboo Society

<http://www.bodley.ox.ac.uk/users/djh/ebs/>

Australian Bamboo Network

<http://www.ctl.com.au/abn/abn.htm>

INBAR—International Network for Bamboo and Rattan

<http://www.inbar.int/>

*Especially see the Information Services section with its Working Papers and Technical Reports*

Introduction to Hardy Bamboos

By Earle Barnhart

<http://www.bamboo.org/abs/GeneralInfoPages/BarnhartIntro.html>

*Article from Fine Gardening magazine in 1989*

1999 WSU On-Farm Bamboo Variety Trial

WSU Cooperative Extension Agricultural Systems

<http://agsyst.wsu.edu/bambooarticle.htm>

Bamboo Shoots

WSU Cooperative Extension Agricultural Systems

<http://agsyst.wsu.edu/bambroc.htm>

Planting Bamboo Benefits the Farmer

By Daphne Lewis

<http://www.dogscooter.com/bamboo/more/index.html>

Thin Your Grove to Increase Productivity

By Daphne Lewis, August 1998

<http://www.dogscooter.com/bamboo/more/boothin.html>

Maintaining and Harvesting a Bamboo Grove

Text and photos by Joe Crookston July, 1998

Footnotes by Daphne Lewis

<http://www.dogscooter.com/bamboo/more/boomaintain.html>

## Bamboo Products

[http://esi.athenstn.com/wwt/Bamboo\\_Products.html](http://esi.athenstn.com/wwt/Bamboo_Products.html)

*Informative summaries of bamboo products: Food, Wood Products, Paper, Charcoal, Biomass, Bio-remediation, Composites*

## 1000 Things Made of Bamboo

<http://www.bambus.de/infos/1000/index.html>

*Image gallery of bamboo products: Music, Outdoor, Fun, Art, Building, Other*

## Uses of Bamboo

<http://kauai.net/bambooweb/bambooa2z.html>

*Alphabet soup of bamboo uses at Bamboo Web*

## Bamboos at EarthCare Nursery, Australia

<http://www.earthcare.com.au/bamboo.htm>

*High-quality photos of bamboo species with descriptions; also see online slide shows*

## BambuBrasileiro

<http://www.bambubrasileiro.com/i1.html>

*Informative bamboo web site in Brazil*

## Sorting the Names of Bamboo

The University of Melbourne, Australia

[http://gmr.landfood.unimelb.edu.au/Plantnames/Sorting/Bamboo\\_names.html](http://gmr.landfood.unimelb.edu.au/Plantnames/Sorting/Bamboo_names.html)

*Comprehensive list of bamboo species with botanical nomenclature, synonyms and notes; cross-indexed in different languages*

## Grass Genera of the World

<http://www.biodiversity.uno.edu/delta/grass/index.htm>

*Authoritative notes and descriptions for bamboo genera*

## Bamboo Names and Synonyms

<http://www.rsl.ox.ac.uk/users/djh/ebs/synonyms.htm>

*Comprehensive list of bamboo plant names and their synonyms*

## References:

- 1) McClure, F.A. 1957. Bamboos in the Genus Phyllostachys Under Cultivation in the U.S. Agriculture Handbook No. 114. 69 p.
- 2) Ohrnberger, Dieter. 1999. The Bamboos of the World: Annotated Nomenclature and Literature of the Species and the Higher and Lower Taxa. Elsevier, Amsterdam. 585 p.
- 3) Blethen, Caitlin, and Carol Miles. 2000. Investigating bamboo as an alternative crop in the Maritime Pacific Northwest. Pacific Northwest Sustainable Agriculture. March. p. 4-6. <<http://agsyst.wsu.edu/bambooarticle.htm>>.

- 4) Meckes, Mark. 1995. Stepping Stones organization. Personal communication.
- 5) Rubatzky, Vincent E., and Mas Yamaguchi. 1997. *World Vegetables: Principles, Production and Nutritive Values*. Chapman & Hall, New York. p. 658-660.
- 6) Young, R.A. 1954. Flavor qualities of some edible oriental bamboos. *Economic Botany*. Vol. 8. p.377-386.
- 7) Lewis, Daphne. 1996. Bamboo shoots: Delicious to eat; easy to sell. *Washington Tilth*. Autumn. p.7-9.
- 8) Oregon Bamboo Co.  
Contact: Tim Ogden  
278 Taylor Street  
Myrtle Creek, OR 97457  
541-863-6834
- 9) Editors. 1997. Bamboo farming: New market waits to be tapped. *Farm Show*. Vol. 21, No. 2. p. 21.
- 10) Turtle, Sue. 1995. Bamboo shoots = good food. *Temperate Bamboo Quarterly*. Vol. II, No. 12 (Spring-Summer). p. 8-11.

**Enclosures:**

Blethen, Caitlin, and Carol Miles. 2000. Investigating bamboo as an alternative crop in the Maritime Pacific Northwest. *Pacific Northwest Sustainable Agriculture*. March. Vol. 12, No. 2. p. 4-6.

Crookston, Joe, and Daphne Lewis. 1998. Maintaining and harvesting a bamboo grove. *And Miles, Carol A. 1998. Bamboo research in Southwest Washington. Pacific Northwest Sustainable Agriculture*. November. Vol. 10, No. 3. p.4-8.

Dunmire, John R., et al. (ed.) 1979. Bamboos. p.194-197. In: *Sunset New Western Garden Book, 4th Edition*. Lane Magazine and Book Company, Menlo Park, CA.

Hawk, Richard G. 1996. A bamboo performance report. *Perennial Plants*. Vol. 4, No. 2. Spring. p. 29-37.

Lewis, Daphne. 1995. Bamboo people promote bamboo as a food and fiber crop for Northwest farmers. *Pacific Northwest Sustainable Agriculture*. December. Vol. 7, No. 4. p. 4-5.

Lewis, Daphne. 1996. Bamboo shoots: Delicious to eat; easy to sell. *Washington Tilth*. Autumn. p.7-9.

Lewis, Daphne. 1999. Thin your bamboo grove to increase productivity. Pacific Northwest Sustainable Agriculture. January. Vol. 10, No. 4. p. 6-8.

Schmidt, Melvin. 1990. Bamboo on the move. National Gardening. March. p. 23-25, 42.

Turtle, Sue. 1995. Bamboo shoots=Good food. Temperate Bamboo Quarterly. Spring-Summer. Vol. 2, No. 1-2. p. 8-11.

Turtle, Sue and Adam (eds.) 1995. Bamboo in the future. Temperate Bamboo Quarterly. Spring-Summer. Vol. 2, No. 1-2. p. 29, 54-58.

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