
BAMBOO RESOURCE HANDBOOK

YOUR COMPLETE GUIDE TO BAMBOO INCLUDING:
SELECTION, SPECIFYING, ORDERING, DELIVERY,
INSTALLATION, CARE, MAINTENANCE, REMOVAL & MORE

Because the Utility Research Garden exists in a specific place, the information we provide here is derived from the specific places where we cultivate and sell these particular bamboo, namely the humid and hot Southern United States. The stories told about these bamboo when in Pennsylvania, in Oregon, in California, or when in France will be different stories than those of these southeastern United States. Our temperate and sometimes sub-tropical climate characterized by intense heat, humidity with occasional and sporadic cold spells makes for different growth characteristics than those other places.

In general our southern states resemble the places where these big grasses of the genera Phyllostachys, Pleioblastus, Pseudosasa, Semiarundinaria, Sinobambusa and Bambusa originated. When their

individual cold hardiness is respected, these bamboo really grow here, they thrive, reaching their largest possible heights and diameter. This is a blessing and a curse when utilizing these plants in designed, managed landscapes. Container culture is the most challenging aspect of growing these plants in places where they grow so avidly, so robustly. Design with care. That said, the montane bamboo originating in the Himalayas and Central and South America cannot be cultivated in our region. Don't even try Fargesia, Chusquea or the truly tropical Giant Clumping bamboo. Too hot, too cold, too wet, too something. The bamboo that do thrive here are too beautiful not to plant.

Warm regards from our warm place,
—David and Alissa, the Utility Research Garden



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BAMBOO GLOSSARY

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BAMBOO

Bamboo is a perennial evergreen in the grass family Poaceae. It is not a tree but can grow like one. Bamboo culms are woody and typically hollow and are characterized by horizontal joints or nodes. The culms grow from a rhizomatic root system underground, and when the shoots break ground they are at their full diameter and grow at that constant diameter (not telescoping) to their full height in a single growing season. With each year, the new culms that grow from the ground are successively larger in diameter. There are more than 70 genera and over 1,450 species. Bamboo is found in diversity of climates all over the world, from cold mountains to hot tropical regions. There are numerous Bamboo species which are Native to North America.

BAMBOO TAXONOMY

KINGDOM: Plantae

PHYLUM (DIVISION): Magnoliophyta

CLASS: Liliopsida

SUBCLASS: Commelinidae

ORDER: Cyperales

FAMILY: Gramineae (Poaceae)

SUBFAMILY: Bambusoideae

TRIBE: Bambuseae

SUBTRIBE: bambusinae

B&B

Ball & Burlap refers to a plant that has been grown in the field (in the ground) which is typically where fields are, and not in a container. Plants are dug upon ordering, and the root mass or root ball is wrapped in burlap.

CANE

The main stem of a (Graminae) grass, most often referred to as a CULM for bamboo.

CLONE

All the plants reproduced, vegetatively, from a single parent. In theory, all the plants from the same clone have the same genotype (genetic inheritance).

CLUMPING BAMBOO

Bamboo that have pachymorph rhizome systems.

CONTAINER

Container refers to the plastic liner or pot that the bamboo is often grown in at a nursery.



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BAMBOO GLOSSARY

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CULM

The main stem of the Graminae (grasses). The stem of a bamboo is also referred as a cane. It is the visible part of the bamboo that grows above ground in a straight cylindrical form. Culms are most often characterized by horizontal joints called nodes and internodes that strengthen the culm.

CULM SHEATH

The plant casing (similar to a leaf) that protects the young bamboo shoot during growth, attached at each node of culm. Useful for identification of the species.

CULTIVAR

Seedling sports from a species which have multiplied from a single clonal source. A sport is a plant abnormally departing, especially in form or color, from the parent stock; a spontaneous mutation.

FLOWERING

This occurs asexually, when a bamboo flowers and puts out seed in masses suspended from the ends of the branches. This occurs seldomly and unpredictably, sometimes with 50 and 150 years between flowering episodes. Bamboo is a monocot, so once flowering occurs a plant will slowly decline and die. Environmental stress may induce flowering.

GREGARIOUS FLOWERING (MASS FLOWERING)

This refers to when all plants of a single clone (which has been repeatedly divided and distributed) flower at about the same time.

INTERNODE

Segment of culm, branch, or rhizome between nodes - typically hollow forming cavities.

INVASIVE

Invasive species are plants, animals, or pathogens that are non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause harm.

MATURE HEIGHT

Height at which a bamboo has reached is maximum growth potential in terms of height.

LEPTOMORPH RHIZOME

The rhizome type of a running, or monopodial bamboo.

They are elongated, and typically thinner than the culms they produce.



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MONOCOT

Monocots are angiosperms whose seeds typically contain a single embryonic leaf. This group of plants includes palms, lilies, ginger, agaves, asparagus, grasses and more.

MONOPODIAL

Describes the growth habit of the rhizomes of running temperate bamboo. The main rhizome continues to grow underground, with some buds producing side shoots (new rhizomes) and others producing aerial shoots (new culms).

NATIVE & ADAPTED PLANTS

Native plants are defined as the species that exist in a region without human introduction. Just because a plant is native doesn't mean it will grow anywhere, they must be well suited to the growing conditions of the site. Adapted plants are not native and not invasive, but are able to thrive in the local climate and soil conditions.

NODE

The horizontal joint between hollow segments of a culm, branch, or rhizome; the point at which a rigid membrane of vascular bundles, also called a diaphragm, extends from inner wall to inner wall closing the culm off completely at each node. Each node is set between two rings, the upper ring is scar tissue formed where the internode tissue stops, the lower ring is the "sheath ring" which is scar tissue formed at the point where the SHEATH falls off. Segmented branches and leaves are formed at the node. The distance between nodes and internodes varies between species and can be used in identification.

PACHYMORPH RHIZOME

The rhizome type of a sympodial Clumping Bamboo. These rhizomes have a short root U-shaped structures with a circular cross-section that narrows towards the tips. They grow outward from the center of a clump in a circular manner to form new culms immediately adjacent the parent plant. Pachymorph rhizomes are typically thicker than the culms they produce.

RHIZOME

Is a modified subterranean stem where both roots and shoots grow from its nodes. Bamboo rhizomes exist in two forms: sympodial (tropical, clumping, Pachymorph) and monopodial (temperate, running, Leptomorph).

ROOT BARRIER

A root barrier is most commonly a reference to a landscape product made of heavy duty plastic, often HDPE (High Density Polyethylene). Barriers are installed at the base of bamboo to control growth of rhizomes and spreading. There are other forms of barriers possible.



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BAMBOO GLOSSARY

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RUNNING BAMBOO

Bamboo that have Leptomorph rhizome systems.

SEEDLING

A seedling is a small plant produced from the seed of a parent plant.

SHEATH

Sheaths, as true of all grasses are technically leaves. These tubular leaves are formed at the base of each node and are basally attached. The blade portion of the sheath surrounds the internode section of the bamboo culm or stem. Culm sheaths are thickened to protect the growth of the culm internode within. Once the internodes are formed, these deciduous leaves fall off. Culm sheaths vary significantly between different species of bamboo and are an important for identification.

SHOOT

A shoot is another term for a turion, the new growth of a grass or bamboo.

STEM BASE

The lowest visible part of the bamboo CULM or stem that extends into the soil and connects to the stem petiole and rhizomatic root system, characterized by numerous short sections appearing as horizontal banding. Advantageous roots and buds grow from this section.

STEM PETIOLE

The lowest part of the bamboo CULM and stem base that is beneath the soil and connects to the rhizomatic root system, characterized by its numerous short sections appearing as horizontal banding. Stem petioles are solid and do not form buds.

SULCUS

A groove or depression (but not a groovy depression) running the length of internodes of culms and branches in running bamboo.

TURION

The tender young shoot as it emerges from the ground without branches or leaves.



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CLUMPING BAMBOO

FORM

Clumping (sympodial) Bamboo forms clusters or clumps that are relatively narrow at the base, with bamboo culms that reach up and outward from the center to form a gentle arching canopy. In Zones 7, 8, 9 and 10, there are bamboo that range in height from 8' to 75'. Due to its form, clumping bamboo makes an excellent specimen plant, or if planted closely together, will form a very dense screen.

ROOT SYSTEM

Clumping Bamboo grows via an underground system of "pachymorph" rhizomes that have a short, U-shaped structure. These roots grow outward from the center of a clump in a circular manner to form new culms immediately adjacent the parent culm. Over time, as the oldest culms die and decompose, the rhizomes begin to grow back in on themselves.



GROWTH RATE

Clumping Bamboo, in our climate, only grow roughly 4-12 inches overall in diameter each year due to its rhizomatic structure. Therefore the rhizome spread itself is much slower than in Running Bamboo, even as the visible photosynthetic growth (leaves and culms) is much faster than in running bamboo. In fact they get taller more quickly than Running Bamboo, but because of the predictable way pachymorph rhizomes grow they are relatively easy to limit and control in terms of their breadth and spread. As with all bamboo, new shoots or culms emerge from the ground at their full diameter and grow to their full height in a single growing season. Each year, new culms are produced that are larger both in diameter and height than the previous year. Individual culms never increase in size from year to year, they only produce new leaves. Clumping Bamboo reaches its mature height around the third year of growth. Older culms will droop with age cascading outward and should be thinned.

CONTROL + BARRIERS

Root Barriers can be effective at controlling the growth of Running Bamboo, but in general are a bad idea for Clumping Bamboo. Only the most massive barriers (concrete) are a long term obstacle to large Clumping Bamboo. Like difficult children, they thrive best when given freedom and proper placement in the World. For more Info SEE BARRIERS under BAMBOO INSTALL / INSTALLATION.



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RUNNING BAMBOO

FORM

Running bamboo is the most widely familiar bamboo to those of us in temperate climates. It is a giant grass that forms an open grove of dispersed, distinctively tall robust culms. Think Crouching Tiger-Hidden Dragon. The culms are branched at each node and with a sulcus or indentation running along the side of each cane, distinguishing it from the smooth, round culms of clumping bamboo.

ROOT SYSTEM

Running Bamboo grows via an underground system of rhizomatic roots called a Leptomorph rhizome. These roots grow outward horizontally from the parent plant in a spreading, linear or running manner that follows the path of least resistance towards areas of sun. When a rhizome reaches an ideal location, it sends up a new shoot. Rhizomes are typically found in the top 6" of soil. Support roots grow down into the ground up to 24" to anchor and support tall varieties such as *Phyllostachys bambusoides*.



GROWTH RATE

Running Bamboo grows fast and can be effective at creating full groves or screens. While Clumping Bamboo may appear to outperform Running Bamboo in the first couple of years, there is a saying that goes like this, Year 1 - they sleep, 2 - they creep, 3 - they leap. This is true of Running Bamboo. It is still growing quickly in those first years, it's just growing below ground in the rhizomes. Once mature, Running Bamboo groves can produce new shoots that grow up to 12" or more per day, emerging from the ground in early spring and reaching heights of 60' by mid summer. Running Bamboo can double its footprint in a growing season as well - so plan carefully. As with all bamboo, new shoots or culms emerge from the ground at their full diameter and grow to their full height in a single growing season. Each year, new culms are produced that are larger both in diameter and height than the previous year. Individual culms never increase in size from year to year, they only produce new leaves. Older culms will droop with age cascading outward and should be thinned out.

CONTROL + BARRIERS

Barriers can be effective at controlling Running Bamboo growth if properly installed and maintained. Barriers should be installed at least 24 inches below ground and 2-3 inches above ground. For more Info SEE BARRIERS under BAMBOO INSTALL / INSTALLATION.



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BAMBOO SELECTION

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PROJECT LOCATION + GROWING CONDITIONS

1. CLIMATE

- Identify where your project falls on the USDA Hardiness Zone.
- The Utility Research Garden is located in Texas and carries Bamboo for southern US states - Zones 7b through 10.
- NOTE that urban areas are often warmer due to Urban Heat Island Effect and this may allow you to plant up a grade, or down if you are outside of the City.

2. SOIL + DRAINAGE

- Identify your soil type and drainage conditions.
- Most bamboo prefers well draining soil, but it has been found to thrive in most soil conditions including rocky, heavy clay, and alkaline soils.

3. SUN / SHADE

- Most (tall) bamboo thrive in FULL SUN, but can also thrive in a wide range of sun to shade conditions.
- Yes, bamboo can be planted under tree canopies. The one thing you will want to consider is the height of the mature bamboo as compared to the tree height. Bamboo grows fast and can and will shade out your tree canopy if not properly selected or placed. In general, the shorter the stature of bamboo, the more shade it requires. As well, variegated bamboo in southern climates tend to require additional shade in order not to burn.

4. WATER

- Most bamboo is quite drought tolerant and will thrive in unirrigated settings. Watering is recommended during establishment, or extreme drought conditions, but after that period it is at your discretion.
- A general guideline for watering is to ensure 1" per week through rainfall, irrigation, or hand watering.

5. SIZE + LOCATION OF PLANTING AREA

- It is important to select a bamboo that will thrive in the conditions you have available. Consider the mature height and breadth of the plant, available soil volume, proximity to buildings, walkways, barriers, natural, constructed, and legal boundaries, overhead wires, and underground utilities. Bamboo WILL conduct electricity when in contact with over head wires!
- If planting in CONTAINERS / POTS / RAISED PLANTERS, the bigger the better. Ensure proper drainage.

6. ROOT BARRIERS

- Root Barriers are recommended near underground Utilities, or if you are installing bamboo along a Property Line or fence that your neighbor would not welcome it crossing, ensure that you have planned for proper maintenance or have installed a Barrier, especially if installing a Running Bamboo. See also BARRIERS under BAMBOO INSTALL / INSTALLATION.



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BAMBOO SELECTION

MATURE HEIGHT

1. The Bamboo we grow comes in variety of heights, from groundcovers as small as 3" all the way up to timber bamboo reaching 75' at Maturity. Bamboo height at purchase in most cases will be less than its Mature Height. Please be sure to understand the difference.
2. Please refer to our BAMBOO INVENTORY LIST for a complete listing of available bamboo organized by CLUMPING and RUNNING, including available CONTAINER SIZES + corresponding HEIGHTS upon purchase / install, as well as MATURE HEIGHTS noted in the DESCRIPTIONS.
3. Identify a height range for the Bamboo you might be looking for based upon your PROJECT & SITE CONDITIONS and USE.

		MATURE HEIGHT	SPECIES
LARGE	TIMBER	35' - 75' HT	Bambusa (CL), Dendrocalamus (CL), Phyllostachys (R), Pseudosasa (R)
	TALL	18' - 35' HT	Bambusa (CL), Dendrocalamus (CL), Otatea (CL), Phyllostachys (R), Pseudosasa (R), Semiarundinaria (R), Sinobambusa (R), Thyrostachys (CL)
SM / MED	HEDGE	8' - 18' HT	Bambusa (CL), Chimonobambusa (R), Hibanobambusa (R), Phyllostachys (R), Pseudosasa (R), Sasa (R), Semiarundinaria (R)
	SHRUB	2' - 8' HT	Bambusa (CL), Chimonobambusa (R), Hibanobambusa (R), Indocalamus (R), Pseudosasa (R), Sasa (R), Semiarundinaria (R), Shibataea (R)
	GROUNDCOVER	0' - 2' HT	Pleioblastus (R), Shibataea (R)

TYPE / FORM

1. Identify whether or not you would like to select a (CL) CLUMPING or (R) RUNNING Bamboo species.
2. For additional information that may aid you in the selection and design process, refer to LANDSCAPE USES + SPACING under BAMBOO USES.
3. See also RUNNING & CLUMPING for more detailed descriptions, growth, and root systems.

(CL) CLUMPING BAMBOO

SPECIES - Bambusa, Dendrocalamus, Otatea, Thyrostachys

DESCRIPTION - Clump forming, narrow at base with a cascading upright to arching canopy of culms and leaves.

(R) RUNNING BAMBOO

SPECIES - Chimonobambusa, Hibanobambusa, Indocalamus, Phyllostachys, Pleioblastus, Pseudosasa, Sasa, Sasaella, Semiarundinaria, Shibataea, Sinobambusa

DESCRIPTION - Stand forming, dispersed footprint with upright to arching canopy of culms and leaves.



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BAMBOO SELECTION

LANDSCAPE USES + SPACING

1. Bamboo has many uses, however, in the U.S.A. we've only utilized a few. You can start by just browsing our **BAMBOO INVENTORY** and selecting based upon a description, or perhaps first consider why you are planting bamboo and what you are trying to achieve.
2. Plant **SPACING & QUANTITIES** required to achieve your design intent will be dependent upon the bamboo you select, whether its **CLUMPING** or **RUNNING**, and its Mature **HEIGHT** range, in addition to your intended **USE, LOOK** or **AESTHETIC** effect you are trying to create. Please consider the list of uses outlined below.
3. Please Note that the **SPACING RECOMMENDATIONS** are specific to the bamboo that we grow at our nursery, and our experience with growth and performance in the various climates of Texas, Temperate + Sub-Tropical regions of the U.S. of A, **USDA Zones 7,8,9** and **10**. Bamboo growth and performance outside of these zones may vary from our base recommendations.
4. All bamboo looks best when it is thinned and maintained properly. **GROVES & SCREENS** in particular require regular thinning & maintenance to achieve an open character, both short and long-term. In a mature grove, one could walk through freely with an umbrella.

LANDSCAPE USES	SPACING RECOMMENDATIONS*				NOTES
	CLUMPING BAMBOO		RUNNING BAMBOO		
	SM-MED	LARGE	SM-MED	LARGE	
OUTDOOR ROOM	16' - 20' +	10' - 20' +	10' - 20' +	8' - 20' +	Spacing Dependent Upon Size of Room Desired
GROVE	6' - 20'	6' - 20'	6' - 20'	2' - 20'	Running Bamboo Works Best in a Grove. All Require Regular Thinning & Maintenance
SCREEN	5' - 10'	8' - 25'	5' - 10'	2' - 10'	Select Varieties with Open / Layered Growth, Requires Regular Thinning / Maintenance
HEDGE	5' - 10'	5' - 10'	24" - 48"	2' - 5'	Select Varieties with Dense Growth. Triangulated Spacing Recommended for Highest Density
SHRUB	2' - 5'	-	2' - 5'	-	For 5 Gallon - Low Growing Bamboo 2' - 8' in HT
GROUND COVER	-	-	6" - 12"	-	For 3 Gallon - Dwarf Running Varieties 3" - 24" tall
SPECIMEN	SINGLE +	SINGLE +	SINGLE +	SINGLE +	Clumping Bamboo Works Best Running Varieties Will Require Containment
CONTAINER	SINGLE +	SINGLE +	SINGLE +	SINGLE +	Dependent Upon Container Size

* NOTE: Spacing Recommendations are Based Upon Installation of 15 to 65 Gallon Container Plants (Unless Otherwise Noted). Adjust Spacing Accordingly for Other Container Sizes or Larger Field Grown Specimens.



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BAMBOO SELECTION

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ENVIRONMENTAL USES + BENEFITS

Bamboo has long been recognized for its environmental benefits. You might consider some of these for your project:

EROSION CONTROL + SOIL STABILIZATION
ENVIRONMENTAL REMEDIATION / PHYTOREMEDIATION / BIOREMEDIATION
WINDBREAKS + SOUND SCREENING
CO2 SEQUESTRATION + BIOENERGY / BIOFUEL
HEAT ISLAND MITIGATION + WILDLIFE HABITAT & FOOD

OTHER USES

Questions. Inquire.

EDIBLE BAMBOO

Bamboo Shoots, Beer, Wine, Tea, Vinegar, Medicine

BUILDINGS / CONSTRUCTION MATERIAL

Houses, Pavilions, Bridges, Particle Board, Medium Density Fiberboard (MDF), Oriented Strand Board (OSB), Corrugated Roofing Sheets, Flooring, Beams, Plybamboo, Veneer, Lumber, Strand Woven Bamboo (SWB), Poles, Bio plastics & Composites

FURNITURE, KITCHENWARE & ACCESSORIES

Chairs, Benches, Beds, Tables, Baskets, Window Blinds, Incense Sticks, Matches, Eyewear, Phone Cases, Computer Mouse & Keyboards, Headphones, Speakers, Laptops, Cutting Boards, Tableware, Kitchen Utensils, Chop Sticks

CLOTHING, TEXTILES, PAPER & PULP

Clothing Apparel, Blankets, Towels, Bed Sheets, Blankets, Mattresses, Baby Diapers, Bullet Proof Vests, Newsprint, Printer / Copy Paper, Cardboard, Toilet Paper, Paper Towels, Coffee Filters, Tea Bags, Paper Bags

RECREATION EQUIPMENT & VEHICLES

Fishing Poles, Surf Boards, Skate Boards, Snow Boards, Bikes, Skates, Baseball Bats, Golf Tees, Ski Poles, Polo Balls, Helmets, Toys, Musical Instruments, Steering Wheels, Dashboards, Interior Trim And Other Parts

FARMING & GARDENING

Garden Stakes & Poles, Fencing, Screens, Greenhouses, Bee Hives, Farm Tools, Fish Nets & Traps, Baskets & Containers, Nursery Posts, Animal Pens, Water Pipes, Water Wheels, Animal Fodder



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BAMBOO SELECTION

CONTAINER / B&B SIZING

Our Bamboo is available in both Container and B&B stock. See typical sizing below. Remember that the plant itself may be larger in breadth or diameter than the pot containing it. SEE BAMBOO INVENTORY LIST for a complete availability listing.

CONTAINER - Container Bamboo is grown in a variety of container sizes, also referred to as a pot or liner. See below for a general list of (G) GALLON SIZES and their corresponding POT DIAMETERS.

B&B (BALL + BURLAP) - B&B bamboo is grown in the field and dug per project. Sizing varies greatly upon the specified size and height requested, as well as the bamboo species. Below is a general guideline for correlating SIZE, in terms of HEIGHT, and potential ROOT BALL DIAMETER. Root Ball sizes for larger B&B bamboo will be provided UPON REQUEST.

CONTAINER SIZE (GALLON)	POT DIAMETER	B&B SIZE - HT (FT)	ROOT BALL DIAMETER
3G	8" Dia	SMALL - 6'-10'	14"-18" Dia
5G	10" Dia	MED - 10'-15'	18"-26" Dia
7G	13" Dia	LARGE - 15-25'	30"-36" Dia
15G	18" Dia		
30G	24" Dia		
45G	29" Dia		
65G	34" Dia		
95G	36" Dia		

DEEP SHADE

Most bamboo thrives in FULL SUN, but will tolerate a wide range of sun to shade conditions. There are however some varieties that stand out as thriving better in PART SHADE to SHADE. These bamboo may incur leaf burn if placed in conditions that are too sunny.

(R) Pleioblastus / Viridi-striatus; (R) Pleioblastus / Pygmaeus; (R) Pseudosasa Species + Varieties;
(R) Sasa Species + Varieties; (R) Sasaella masumaniana; (R) Shibataea chinensis



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BAMBOO SELECTION

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COLOR / TEXTURE

All of our bamboo have wonderful color and texture and can be layered in the garden. Some are more prominent than others.

COLOR: Coloration on Culms, Leaves, or Both

YELLOW / GOLDEN	(CL) <i>Bambusa eutuldoides</i> / <i>Viridivittata</i> ; (CL) <i>Bambusa multiplex</i> / <i>Alphonse Karr</i> ; (R) <i>Phyllostachys aurea</i> / <i>Holochrysa</i> ; (R) <i>Phyllostachys viridis</i> / <i>Robert Young</i>
LIGHT OR LIME GREEN	(CL) <i>Thyrostachys siamensis</i> / <i>Monastery Bamboo</i> ; (R) <i>Phyllostachys dulcis</i> / <i>Sweetshoot</i>
DEEP GREEN	(CL) <i>Bambusa multiplex</i> / <i>Green Hedge</i> ; (CL) <i>Bambusa textilis</i> / <i>Emerald</i>
BLACK	(CL) <i>Bambusa lako</i> ; (R) <i>Phyllostachys nigra</i> (multiple varieties available)
BLUE / PALE GREEN	(CL) <i>Bambusa chungii</i> / <i>Blue Bamboo</i> ; (CL) <i>Bambusa textilis</i> / <i>Kanapaha</i> ; (CL) <i>Bambusa textilis</i> / <i>Lee Ching Kuo</i> ; (R) <i>Phyllostachys nigra</i> / <i>Henon</i> ; (R) <i>Phyllostachys glauca</i>

SPOTTED: Color Spots or Blotches on Culms, Leaves, or Both

(CL) *Bambusa textilis* / *Maculata*; (R) *Phyllostachys nigra* / *Bory*

VARIEGATED: Colored Striping on Culms, Leaves, or Both

(CL) *Bambusa dolichomerithalla* / *Silverstripe*; (CL) *Bambusa emeiensis* / *Flavidorivens*; (CL) *Bambusa lako*; (CL) *Bambusa multiplex* / *Alphonse Karr*; (CL) *Bambusa multiplex* / *Silverstripe*; (CL) *Bambusa perviabilis viridistriata*; (CL) *Bambusa textilis* / *Maculata*; (CL) *Bambusa tuldooides* 'Ventricosa Kimmeii' (R) *Hibanobambusa tranquilans* / *Shiroshima*; (R) *Phyllostachys aurea* 'Flavescens inversa'; (R) *Phyllostachys aurea* / *Koi*; (R) *Phyllostachys bambusoides* / *Castilion*; (R) *Phyllostachys vivax* f. *aureocaulis*; (R) *Pleioblastus* / *Viridi-striatus*; (R) *Pseudosasa japonica* / *Akebono-Suji*; (R) *Semiarundinaria yashadake* / *Kimmeii*; (R) *Sinobambusa tootsik* / *Albostrata*

BIG LEAVES: (CL) *Bambusa multiplex* / *Richard Waldron*; (CL) *Bambusa textilis* / *Glabra*; (R) *Pseudosasa japonica*; (R) *Indocalamus* sp.

SMALL LEAVES: (CL) *Bambusa multiplex* / *Featherleaf*; (CL) *Bambusa multiplex* / *Fernleaf*; (CL) *Bambusa multiplex riviereorum* / *Chinese Goddess*; (CL) *Bambusa nana* / *Small Leaf*

BIG CULMS (4" or greater):

(CL) *Bambusa beechyana* - 5"; (CL) *Bambusa oldhamii* / *Giant Timber* - 4"; (CL) *Bambusa vulgaris* / *Vittata* - 4"; (CL) *Dendrocalamus hamiltonii* - 7"; (R) *Phyllostachys makinoi* - 5"; (R) *Phyllostachys bambusoides* / *Rib Leaf* - 4"; (R) *Phyllostachys edulis* / *Moso* - 7"; (R) *Phyllostachys vivax* (multiple varieties) - 5"

THIN CULMS (1/2" or less):

(CL) *Bambusa multiplex* / *Fernleaf*; (CL) *Bambusa multiplex* / *Golden Goddess*; (CL) *Bambusa multiplex* / *Richard Waldron*; (CL) *Bambusa multiplex riviereorum* / *Chinese Goddess*; (R) *Chimonobambusa quadrangularis* / *Suow*; (R) *Indocalamus longiauritus*; (R) *Indocalamus tessellatus*; (R) *Pleioblastus Viridi-striatus*; (R) *Pleioblastus Pygmaeus*; (R) *Pseudosasa owatarii*; (R) *Sasa* (multiple varieties); (R) *Sasaella masumaniana*; (R) *Shibataea chinensis*



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BAMBOO SPECIFYING

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SPECIFICATIONS + ORDERING

1. BAMBOO INVENTORY

Please see our BAMBOO INVENTORY for a complete list of Bamboo Species and Varieties, including Descriptions, Heights, USDA Hardiness Zones, Container Size or B&B, Height, Cost, and Availability.

NOTE: We also CUSTOM grow bamboo to specification. Please call to Pre-Order.

2. NEED HELP?

The Utility Research Garden has over 100 different species of bamboo. We are a WHOLESALE NURSERY, we do not have a public retail center, but you are welcome to come and VISIT our farm in Jones Creek, TX - BY APPOINTMENT.

We'll be happy to introduce you to the bamboo. Just Ask.

3. SPECIFYING for CONTRACT DOCUMENTS

If you are a Landscape Architect, Designer, Architect, or Design/Build Professional. Please include the following information in your contract documents:

SPECIES - LATIN NAME & COMMON NAME

VARIETY - SPECIFIC CULTIVAR NAME (If applicable)

CONTAINER SIZE-TYPE (Container Grown = Gallon SIZE or Field Grown = B&B)

HEIGHT

OF CULMS / CANES

SOURCE: Utility Research Garden, LLC

1737 CR 2800

Colmesneil, TX 75938

512-626-9825

DAVID@UTILITYRESEARCHGARDEN.COM

4. ORDERING DIRECTLY

If you are ordering directly, please CALL or EMAIL us with your SPECIFICATIONS and DELIVERY DATE REQUEST.

We will confirm AVAILABILITY, COST, and DELIVERY.

5. No Minimum Order (Individual / Residential Inquiries Welcome)

6. TAXES & DELIVERY FEES do apply

7. DELIVERING WEEKLY across Texas, Louisiana, Oklahoma, and the Southeastern United States



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BAMBOO DELIVERY

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ORDER CONFIRMATION

1. Upon ordering, you shall receive a phone call or email CONFIRMING your ORDER AVAILABILITY.
2. An ESTIMATED DELIVERY DATE will be provided.
3. An INVOICE will be sent to you VIA EMAIL from JENNY@UTILITYRESEARCHGARDEN.COM.
4. If you are a TAX EXEMPT Entity - please provide documentation to Jenny.

DELIVERY / RECEIVING

1. DELIVERY is by TRUCK.
2. We DELIVER WEEKLY across Texas, Louisiana, Oklahoma, and the South.
3. Please provide DELIVERY ADDRESS & any special instructions.
4. UNLOADING - It is the responsibility of the contractor to off-load all orders.
5. Please INSPECT & APPROVE YOUR ORDER to ensure that you have everything requested. If something is not right, please notify us before the driver leaves.
6. We GUARANTEE that all plants will arrive alive and in healthy condition. We do not sell plants that do not meet our standards. If you have a problem with something, please let us know, and we will do our best to make it right.
7. WARRANTY - We do not provide Warranties for plants. Once the plant has left the truck and has been ACCEPTED by your representative on site it belongs to you.
8. QUESTIONS - If you have any questions about your Bamboo, please refer to our Website & Resource Handouts for information on Installation, Care, and Maintenance. If you still have questions, feel free to give us a call. Customer Satisfaction is our priority.

INSTALLING, MAINTAINING & CARING FOR YOUR BAMBOO

SEE BAMBOO INSTALL & CARE RESOURCE SHEETS. Still have questions. Just ASK.



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BAMBOO INSTALL

WHEN TO PLANT?

1. Containerized bamboo (plants purchased in pots / containers) can be safely planted ANY time of year. However, SPRING, SUMMER and FALL are typically the best times to plant B&B bamboo that is field dug.
2. For planting in the cold of WINTER, mulch and provide extra protection from any cold dry winds. Cold dry winds are much more damaging to bamboo than the summer sun, but either way, water is the key to establishment.

INSTALLATION

1. Select location & layout spacing. Ensure proper space has been provided for growth.
2. Determine if you want or need a barrier (SEE BARRIERS).
3. Remove any existing vegetation & roots at site of install.
3. Dig a hole 1.5 to 2x the size of the root ball. Ensure proper drainage.
4. Place plant in hole.

For B&B FIELD GROWN PLANTS: Place bamboo in hole with burlap left on.

For CONTAINER PLANTS: Carefully remove plastic liner prior to placing in hole. Carefully spread loose roots out.

5. Gently backfill the hole with soil and tamp as you go. Do not over compact, but ensure plant is securely anchored in ground and that there is no loose soil or large air pockets created by large soil clumps.
6. Mulch with/ organic material.
7. Water thoroughly & regularly.

ESTABLISHMENT PERIOD

1. WATERING

Water three times per week for a month after install. Water daily if planted during times of intense heat or cold wind.

2. STAKING

Bamboo rarely requires staking, however, if high winds are expected, tall or slender bamboo plants may want to be staked or guyed. Secure protected guy wires about 2/3 up the plant on culms with the largest diameters, and stake on 3 or 4 sides at a sufficient distance prevent uprooting.

3. LEAF DROP

Bamboo leaves may drop in response to stress of new planting. This is normal. New leaves will usually flush out immediately after leaf drop. This also occurs in the Spring for both newly planted and established bamboo - it's a part of the normal growth pattern of bamboo.



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BAMBOO INSTALL

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BARRIERS

1. WHAT IS A BARRIER?

- Barriers can be concrete or metal curbs, walls, or edging, or a plastic HDPE Root Barrier.
- Massive barriers, such as concrete are probably the most effective at controlling CLUMPING BAMBOO.
- HDPE Root Barriers can be used for RUNNING BAMBOO, but are NOT recommended for CLUMPING BAMBOO.
- An alternative approach to barriers in the installation of an open or sand filled trench surrounding the area of bamboo that you wish to contain. This can be done for both RUNNING & CLUMPING BAMBOO. For more info SEE ROOT PRUNING in BAMBOO MAINTENANCE.

2. DO YOU NEED A BARRIER?

- No, not necessarily. If you want to MANUALLY maintain bamboo growth and spread by breaking off new shoots, culms and rhizomes as they appear, or on a regular maintenance schedule.
- Root Barriers are however RECOMMENDED near Underground Utilities, or if you are installing bamboo along a Property Line or Fence that your neighbor would not welcome it crossing. Always ensure that you have planned for proper maintenance prior to installing bamboo, even with a barrier.

3. HDPE ROOT BARRIERS

- HDPE Root Barriers can be used for RUNNING BAMBOO, but are NOT recommended for CLUMPING BAMBOO.
- Root Barriers in the landscape industry are typically referring to a Heavy Duty Plastic that is commonly used in the field for controlling the growth of RUNNING BAMBOO to limit it to a specific area.
- This should be a (HDPE) High Density Polypropylene, at least 60-80 mil thick.

4. ROOT BARRIER INSTALLATION

- It is recommended that root barriers be installed at least 2-3 feet below ground around the area to be maintained, and should remain about 2-3 inches above ground.
- Root barriers should be installed at an angle out from the center of the plant or grove. This is to direct rhizomes upward so that they can be made visible and cut during regular maintenance.

5. ARE THEY EFFECTIVE?

- Massive Barriers and Root Barriers are effective at limiting and directing bamboo growth and can be used to control bamboo if properly installed and maintained. Bamboo and Rhizome growth will not be stopped by barriers, but it will limit the available rooting area and make the soil beyond the barrier difficult to access. Barriers help to direct the growth (especially angled barriers) in such a way that pushes the rhizomes up out of the soil so that they are visible and can be cut during regular maintenance.



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BAMBOO CARE

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WATERING

1. HOW MUCH & WHEN? Once established, bamboo doesn't need much water and is quite drought tolerant once established. It will thrive best on about 1" of water per week, either through irrigation, manual watering or rainfall.
2. HOW? Deep watering is recommend to ensure that the root area is fully watered and to help encourage deep root growth.
3. Bamboo cannot thrive in constantly wet conditions. Ensure proper drainage.

FERTILIZING

1. Fertilizing is usually not necessary for Bamboo planted directly in the ground in good growing conditions, but it will promote more vigorous growth and more vibrant coloring.
2. WHEN? Fertilizer is best applied in the Spring & Early Summer
3. TYPE? Organic fertilizers are recommended - organic compost, mushroom compost, fish meal, sea weed, worm castings.
4. Bamboo do have Arbuscular Mycorrhizal affiliations and can benefit from AM fungi Inoculations.

MULCHING

Bamboo Leaf Mulch - Sweep or rake leaf litter, sheathes, and branches that have fallen back into the grove or up to base of each plant. This provides nutrient cycling and uptake from the decomposing material, while also helping to retain moisture.

TREATING DISEASES & PESTS

The Utility Research Garden practices natural agriculture that is BEYOND Organic. It is our philosophy to work with natural systems to find the best solution for all living things. We understand that diseases and pests sometimes occupy your garden and that they are not always welcome.

1. When pests and disease arrive it is always an indication of poor siting, and/or poor soils.
2. Pests are the solution, not the problem.
3. Review your conditions, maintenance, and care regime to help determine the cause and best solution for going forward.
4. QUESTIONS? Just Ask.

YELLOWING OR DROPPING LEAVES

1. Bamboo is evergreen, however it does drop ALL of its leaves and grow new ones in the spring.
2. The leaves may turn yellow and appear dry in the early spring prior to leaf drop. This is normal and is not a concern.
3. Leaf yellowing and Leaf Drop occurs gradually and not all at once, so Bamboo will often have a mix of both green and yellow leaves at the same time until they are being replaced by new young leaves.
4. Leaf drop and Yellowing may also occur with newly planted bamboo in response to stress upon transplanting / planting. This is normal. Be sure to water and fertilize plants as recommended during this time. New leaves will flush out immediately after new roots are formed. NOTE: New culms will grow to their full height before branches and leaves in the summer and fall.



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BAMBOO CARE

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EDGE MAINTENANCE

1. Bamboo grows via rhizomes like grass, so it's boundaries will need to be maintained. We recommend doing this once per year.
2. Remove new shoots and culms above ground in locations that are unwanted. Simple.

NEW SHOOTS are produced during spring and early summer in RUNNING bamboo, late-summer and FALL for clumping bamboo. They are tender and can be easily broken off at base.

LARGER CULMS will require a horizontal cut with a hand saw. It is best to do so at the end of summer for RUNNING Bamboo, and in WINTER or EARLY SPRING for CLUMPING Bamboo.

THINNING

1. Bamboo groves look the best when they are properly maintained and thinned. We recommend doing this once per year.
2. Start at the outside of the grove. Remove dead, broken, and thin leaning culms.
3. Work you way into the grove thinning out culms in a uniform fashion to allow for additional space and light to reach the center. Because bamboo grows new culms every year, while the old culms still remain, the center quickly becomes dense with old growth (especially in Clumping Bamboo). New growth will emerge in the center once the old growth has been thinned out.
4. OUTDOOR ROOMS or PATHWAYS can be created in or through larger groves as desired by thinning out entire sections, however, it is recommended that you thin no more than 1/3 of a grove in a year or growing season.
5. It is best to do so at the end of summer for RUNNING bamboo, and in WINTER or EARLY SPRING for CLUMPING Bamboo.

TRIMMING / PRUNING (OPTIONAL)

While this is not necessary or recommended, some folks like their plants to maintain a certain height or shape. This can be done by having very long arms.

ROOT PRUNING (OPTIONAL)

If you did not install a Barrier and you want to restrict the bamboo to a very specific area, biannual root pruning can be used. This is a very aggressive and thorough form of EDGE MAINTENANCE targeting rhizome growth below the ground before new shoots or culms are formed at the surface with an open trench or sand-filled trench.

1. Dig a trench around the perimeter of the bamboo area 8-10 inches deep, 6-12 inches wide
2. Cut away any rhizomes reaching into that area or beyond.

Another option (if this concept is appealing to you) is to install your bamboo in a raised planting bed or with a boundary trench surrounding it (this can be filled with sand). This allows you to easily observe boundaries and maintain.



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BAMBOO CARE

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CONTAINER PLANTINGS

1. Bamboo can be grown in pots, raised planters or containers, however, it is recommended that it be DIVIDED every 2-3 years.
2. If DIVIDING does not sound like a desirable task, plants may be POTTED UP or TRANSPLANTED to a larger container size.
3. The need for DIVIDING or TRANSPLANTING will be dependent upon the Bamboo Species and Variety, spacing, growth rate, and container size you begin with.
4. Ensure that containers have proper drainage, soil quality & volume, and are appropriately sized. The bigger the better.
5. Bamboo grown in containers will require more care and are often more susceptible to environmental stresses. Some things to watch out for are increased heat and cold sensitivity, and susceptibility to tipping over in strong winds.
6. Container planted Bamboo requires REGULAR WATERING and FERTILIZATION because of their very rapid growth in southern climates.

DIVIDING BAMBOO (OPTIONAL)

1. If your bamboo has outgrown its original home, it can be DIVIDED and/or TRANSPLANTED.
2. Dividing is best done in EARLY-SPRING for clumping bamboo, FALL for running bamboo.
3. Water plant and soil thoroughly to hydrate bamboo, allow for easier maneuvering, and help prevent stress.
4. Remove plant from ground or container.
5. Cut back culms as desired (down to 18" or more) for ease of handling or to encourage new growth upon transplant.
6. Split / cut rhizome clumps apart with an axe, hoe, or saw at natural points of division.
7. Cut away old or damaged rhizomes to help encourage new growth.
8. Plant divisions in new landscape areas or pots. See notes on BAMBOO INSTALL / INSTALLATION.

TRANSPLANTING / POTTING UP BAMBOO (OPTIONAL)

1. If your bamboo has outgrown its original home, but you do not wish to DIVIDE it, bamboo can be TRANSPLANTED to a larger container, pot or in ground location.
2. Transplanting is best done in MID-SPRING.
3. Water plant and soil thoroughly to hydrate bamboo, allow for easier maneuvering, and help prevent stress.
4. Remove plant from ground or container.
5. Cut back culms as desired (down to 18" or more) for ease of handling or to encourage new growth upon transplant.
6. Plant in new landscape areas or pots. See notes on BAMBOO INSTALL / INSTALLATION.

BAMBOO REMOVAL (OPTIONAL)

1. Bamboo is a grass with a rhizome system that can and must be removed to stop its growth and spread.
2. Dig up bamboo and entire root mass with a skid steer, bobcat or other machinery.
3. Bamboo rhizomes grow close to the surface, so slide bucket just under the root mass 6"-12" down, and scoop up or tip over bamboo. Easy. Check the area during the next growing season for any missed rhizomes that may have sprouted.



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