

Nursery De Groene Prins

price €2,50

BAMBOO
CATALOGUE

2024/2025

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Hans Prins
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ESPECIALLY ...

Devoted to people who love adventurous gardening and love to play with plants!

frontpage: *Phyllostachys vivax* 'Aureocaulis'
backpage: new culms of *Phyllostachys bissetii*

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Rhododendrons like the same growing conditions as bamboo, this combination adds colour to the garden as well.

Visit the nursery & Botanical Garden by appointment only

PREFACE

This is the 4th english edition of the catalogue of nursery “De Groene Prins”, available from the website or in printed form. Via Google Earth the nursery can be found at 52°48'08.10" N and 6°04'40.43" E.

It's amazing to see the farm, the tunnels and the garden so well. Even the number of bows of the tunnels can be counted! But if you want to see the garden really good, you should visit us.

In 1990 we started with only bamboos, but over the years we gradually shifted towards a varied range of exotic plants.

The non-bamboos have been given more and more attention over the last few years. Extreme freezes in early march 2005 (when the temperature dropped suddenly to -22°C) and 2012 wiped out some plants in our assortment, but the surviving plants are still being propagated .

The winter of 2019/2020 was a mild one! None of the plants from the Southern Hemisphere have suffered. Heavy unusual storms did some damage however. Field testing of new bamboos continues, especially with new *Fargesia*'s and *Borinda*'s, as most customers prefer non-running bamboo. Hybrids between ***Fargesia nitida*** and ***F. murielae*** perform very well in the garden. The best ones are available. We avoid the many inbred inferior selections from these 2 bamboos.

Unfortunately some bamboos have been micro-propagated on a large scale without proper testing the resulting inferior plants. This may have spoiled the market for bamboo. We guarantee that our bamboos have been propagated in the traditional way without loss of quality!

So far (April 2020) no insect pests have reached our nursery (no mites!).

Our assortment can be seen at the website, click 'Plant info' on the homepage, then select 'bamboo' at www.degroeneprins.nl

We issue a newsletter for which you may register at the homepage.

Edible gardens have become trendy, and many *Phyllostachys* species yield tasty shoots in spring. Read more about it in this brochure. Traditional gardening is still dominant in our country, but I keep asking attention for exotic gardening and hope to meet you in the jungle garden!

Hans Prins, April 2020



Vigorous shoots of *Phyllostachys kwangsiensis*, by far the fastest bamboo in the garden; after gregarious flowering this bamboo died and is lost for the future

BAMBOO IN THE LOW COUNTRIES

Bamboo in the garden!

Many people are not aware of an awesome assortment of different bamboos available nowadays.

Since about 30 years, bamboo has slowly found its way into Dutch gardens. This rapid growing treelike grass is indeed a most valuable addition to our gardens!

Bamboo is one of the fastest growers of the plant kingdom: within 2 months time a young shoot reaches its final height and thickness! Under optimum conditions a height of 12 m and a diameter of \pm 8 cm is possible.

Some 1000 different species exist worldwide, of which about 100 are hardy in Holland. Since I planted my first bamboos in 1990 in a paddock, my knowledge about bamboo has steadily increased. It started as a hobby but soon resulted in a small nursery.

This booklet is a result from practical experience with bamboo under Dutch circumstances. Our climate is quite different from the climate in China or Japan, where most bamboos come from. We usually have only little snow in winter. Damage by dry, eastern winds may occur. In combination with sun the results can be devastating!

Dutch summers are rather dry compared to Chinese and Japanese summers; especially in the mountains precipitation is twice as much as here - or even more! This shows that we must pay special attention to the water supply as most summers are relatively dry here. Very wet summers are sometimes sufficient for bamboos like *Fargesia*, but the low temperatures prevent maximum growth. Therefore we must pay special attention to irrigation of our garden. In windy area's bamboo uses much more water than in wind protected environments where the relative humidity can get higher.

Hardiness of bamboo depends largely on location. As an example we take the popular ***Phyllostachys aurea***: in France it is winter hardy and winter green and attains in the south a maximum height of \pm 9 meter. Within the warmer city centre of Maastricht a giant plant is also quite tall. The minimum temperature for this bamboo according to many catalogues is said to be -18 to -20 °C. However almost every winter the plants in our garden here in Steenwijkerwold are damaged by the weather! The wind chill effect can cause more damage than expected when only the temperature is observed. Up north near Bergen, Norway, this bamboo behaves like a low, deciduous shrub. Although the minimum temperatures are within the limits for this plant, it cannot develop into its natural form due to very short summers in Bergen.

Sometimes bamboos make a second growth spurt in august. Often these culms will not ripen in the cool climate of The Netherlands before the first cold spell and are better removed early. However, when these culms tend to grow in a horizontal direction, it is better to bury them and force them to become a rhizome. This stimulates a better growth next spring.

Exceptions to this rule are ***Fargesia***, ***Bashania*** and ***Chimonobambusa***.

Growth

The growth of bamboo is tremendous. When you plant for instance a ***Phyllostachys*** about 1 m tall with a pot size of 3 liter or even better 5 liter on a protected and warm spot in rich, well draining soil in early spring, this plant may have produced new culms of 150-200 cm and new rhizomes up to 1 meter after its first growing season.

After the 2nd growing season the expected height will be 200-250 cm and the expected width may be 50-100 cm (depending on the species)

The 3rd growing season will produce culms up to 300 cm and the 4th growing season up to 400 cm, sometimes at 2 m distance from the original plant!

The adult size of a bamboo will be attained normally between 5 and 10 years after planting. The plant will then continue to produce adult culms between 6 and 10 meters in the climate of North Western Europe.

The biggest size possible in our region seems to increase slowly due to global warming of our planet from 8 meter around 1990 till 10 meters or more under very favorable conditions nowadays. Even taller culms may be expected in the near future if our climate keeps getting warmer and the length of the growing season increases. Yearly pruning of the thinnest culms is beneficial for a maximum result as is the thinning of the new shoots in spring by removing the thin ones. A liberal supply of compost and lava powder stimulates adult growth. Dwarf bamboos reach their adult size within a few years.

Fargesia reaches adulthood faster as well, but spreads much slower in horizontal direction.

Flowering

Not always flowering bamboo will eventually die, causing widespread starvation in the wild among Panda bears. This catastrophe is mainly caused by humans who turn wild land into farmland. Several ways of flowering have been observed in **Fargesia murieliae**. Gregarious flowering will usually last some years (sometimes as much as 20 years!) and the plants may eventually die and make room for a new generation of seedlings.

Simultaneous, gregarious flowering has been observed in Western Europe at **Pseudosasa japonica** in the early 90's. All plants have completely recovered after a few years. The reason for the simultaneous flowering is the fact that all plants originated from only one introduced plant long ago. All of these **Pseudosasa japonica** belong to one clone - they all share exactly the same genes.

Fargesia nrurieliae has been propagated on a very large scale probably from only one original introduction. When the flowering began, many seedlings became available in the trade under all sorts of fancy names. Unfortunately these seedlings often lacked the superior qualities of their mother due to inbred.

Artificial crossing with various **Fargesia nitida** clones has resulted in extremely vigorous, healthy plants like "Viking", "Green Prince", "Winter Joy" and "Black Pearl". In a corner of the garden all these new varieties are grouped together. The differences can now be observed.

Quite a few inferior **Fargesia**'s have been propagated on a very large scale in laboratories through in vitro technique. These inferior bamboos have given many people a bad impression about bamboo! Very sad indeed.

At our nursery usually one or two bamboos out of a collection of over one hundred are flowering, sometimes just on one branch only which doesn't harm the plant at all.

It is still unknown how the biological clock that triggers the flowering cycle works. **Fargesia**'s with a long life expectancy are the above mentioned crosses, *denudata*, sp. *Jiuzaihou* and *dracocephala*. Seedlings from *F. murieliae* and *F. nitida* are also safe to plant with their life expectancy of ± 100 years.





Chusquea culeou from S. America is not an easy bamboo but very beautiful. The flowering cycle of this bamboo is only about 35 years. Of *Fargesia*'s it is roughly 100 years!

*All information may be used free **when mentioning it's source***

MANURE

Winter hardiness improves by appropriate fertilization. However, very heavy fertilization may weaken bamboos.

Try to avoid very cheap fertilized garden soil from super markets. I have had disappointing results with it. (weak leaves with many aphids and lanky culms). Home made compost is a lot better.

In the garden I use composted horse manure or commercial organic fertilizer for lawns. Don't apply more than prescribed unless you have a very poor soil. Be careful with chemical fertilizer; too much may result in tall but weak plants with reduced hardiness. Organic fertilizer 10+4+6 or 5+3+2 (\pm 2 times more Nitrogen than Phosphorus and Potassium (in combination with lava powder, available at the nursery). A liberal yearly gift of lava powder is beneficial for sandy soils, because it improves the water holding capacity and fertility of the soil. Lava powder is very rich in silicon in a form that plants can use. Bamboo needs a lot of silicon (that's why the culms are so tough) and needs plenty of it. On loamy soils less lava powder is needed. On acid soils a regular supply of lava powder in spring is very good for bamboo.

One of the main reasons for planting bamboos is the fact that it's evergreen.

The best evergreen bamboo species are pasted green in appendix I. Half wintergreen bamboos are pasted yellow. All other species are evergreen, however sometimes extreme weather conditions in winter may cause loss of leaves. The local conditions in my country garden are used as a standard. In more protected environments all bamboos stay in a better condition. And the further your garden is situated from the coast, the taller they grow.

Always maintain a layer of mulch under the bamboo of straw, dead leaves, rough compost etc.

BAMBOO IN THE GARDEN

Gardens with too many conifers can be brought back to life again by planting some airy and waving bamboo. A bamboo hedge or screen gives protection and gives you as well as many birds privacy.

Dwarf bamboo is excellent as low maintenance ground cover. In gardens bamboo is used:

- as specimen planting
- as ground cover
- between shrubs and trees as a (spreading) grove
- as a hedge

Whatever your choice may be, please beware that bamboos will spread; some are slow but some run fast!

An exception are tight clumping bamboos such as *Fargesia's* (in the old days known as *Sinarundinaria*) and a few less well known species (*Borinda*, *Yushania*, *Thamnocalamus* en *Chusquea*).

The fastest runners are *Sasa's*. Without barriers they may outgrow other plants.

Phyllostachys runs quite fast as well, although *Phyllostachys angusta* grows rather as a clumping bamboo.

In most gardens rhizome barriers are essential to keep running species under control. This barrier should be about 60 cm deep to control the roots and is usually made of tough, thick HDPE.

When you plant a running bamboo be careful and use a so called rhizome barrier to

confine your plant! See appendix IV for more information.

Bamboo as a specimen plant

As a solitary plant bamboo is very effective. At unprotected, open spaces, wind can do some harm but usually in spring the plant will recover again.

The most common choice is *Fargesia murielae*, but there is nowadays more choice: very beautiful is *Phyllostachys aureosulcata* 'Spectabilis' and its form 'Aureocaulis', much hardier than *P. aurea*, *P. nigra* and *P. vivax* 'Aureocaulis'. In the milder parts of the country *Semiarundinaria viridis* or *Pleioblastus hindsii* create awesome effects.

The hard architecture of modern houses may need bamboo for a soft contrast.

Sasa palmata along a pond will create a nice atmosphere.



Phyllostachys atrovaginata grows within \pm 8 weeks from a young shoot into an adult culm.

Bamboo as ground cover

Very fast runners among the bamboos are the *Sasa*'s. As some sort of low maintenance substitute for a lawn *Sasa* or *Pleioblastus* may be used, a quickly spreading bamboo that will cover the soil completely. Many dwarf bamboos need heavy pruning after winter; the regrowth makes them look as new again.

Among the dwarf bamboos many variegated forms exist. Especially *Pleioblastus auricomus* (= *viridistriata*) shows yellow and green variegated leaves (however some people find this ugly ...). Species with very large leaves can also be found in this group, like *Sasa tessellata*, that even thrives in deep shade.

Many taller bamboos are good for ground covering as well. Depending on the plant size at the

time of planting, it may take a few years before an area is completely covered. Little maintenance is then required.

Bamboos between shrubs and trees

When used in combination with contrasting, bold leaved shrubs like *Fatsia japonica* the bamboo looks at its best. Combinations with trees such as *Ligustrum*, *Betula* or *Salix* are rather monotonous and best avoided. Sun loving bamboos (especially *Phyllostachys*) should be allowed to catch the sun, otherwise they will suffer and not attain their full glory. Remember: bamboo without root control barriers will spread infinitely!

The best soil for bamboo is a light, well drained, rich, loamy soil. A yearly gift of plenty composted horse dung and/or garden compost is very beneficial. However, in humus rich soil from forests bamboos are doing very well too.

Too heavy or too light soils need liberal gifts of compost or peat. Heavy clay soil should be mixed with coarse sand and old, composted horse dung. Heavy clay needs addition of shredded garden waste. Dry, sandy soil need regular additions of lava powder.

Irrigation during dry spells is essential for optimum growth of bamboo. Even in winter watering may be necessary during dry (not freezing) weather. The two deadly extremes may be fatal for bamboo: **desiccation** or **drowning** caused by bad drainage

A really nice bamboo garden is only possible when irrigation facilities are optimum.



Running bamboo need a much stronger barrier than this!

A bamboo grove or forest

On fertile soil, which never dries out, one bamboo may eventually develop into a grove. In our country this is practically unknown. Now and then little patches of bamboo grove have been planted with imported big plants (i.e. in some zoos). This is very expensive and most people start with a young plant or pieces of rhizome with at least 3 viable buds (the more the better). This can best be done in March. The following species are excellent colonizers (on wind sheltered places):

Bashania fargesii (extremely invasive!!),

Semiarundinaria viridis, *Phyllostachys prominens*, *P. atrovaginata*, *P. rubromarginata*,

P. nuda (for a fairly open forest), *P. aureosulcata*, *P. bissetii*, *P. nigra* 'Boryana' and 'Henonis' and

P. vivax (for sheltered gardens)

The layer of dead leaves under the bamboo should not be removed. Bamboo likes recycling; moreover this layer prevents desiccation of the soil. Shredded bamboo canes used as a mulch layer is most beneficial for bamboo. It provides exactly the right ingredients!



Artist impression of a bamboo forest by Rob Komala

(could be *Phyllostachys vivax* ...)



An open grove of *Phyllostachys iridescens* yields delicious, edible shoots each spring

Clumping bamboo

Re-introduction of *Fargesia murielae*

After the gregarious flowering of this popular bamboo new seedlings were imported from the wild. One of the best from this bunch has bright red new shoots and dark bronze culms. The ultimate height is $\pm 3-4$ meter. In autumn 1/3rd of the leaves turn yellow and fall as a protection against very dry winters. In China young shoots are eaten by both people and Panda bears. *Fargesia*'s are preferred by birds as a safe shrub for their nests because cats cannot climb in the thin, bending culms.

Many seedlings of *Fargesia murielae* and *F. nitida* from self pollination were inferior. This in-breeding is not good. Many inferior plants came on the market. Hybrids between these two species showed remarkable vigour! Selections have been introduced under various names like "Black Pearl", "Dawei", "Viking" and "Pillar". These hybrids are now more and more available in the trade.

Other *Fargesia*'s

The most popular *Fargesia* at the nursery is ***F. robusta* 'Campbell'**. The 2nd best choice by customers is ***F. sp. Jiuzaihou*** with tiny leaves.



Phyllostachys bissetii for sale in 25 liter containers for immediate privacy in gardens



This *Fargesia murielae* with red shoots and culms aging to a dark color from Shennongjia nature reserve is even better than the “old” *F. murielae*, that died after flowering.

All information may be used free when mentioning it's source

F. murielae

Many new bamboos are now under observation in my test garden. Among them are the so called "KR" collections (named after Keith Rushforth, a British plant hunter). Some of the hardest ones are:

KR4175 (Yunnan, 3100 m) resembles an upright growing *Fargesia utilis*.



KR5287 (pictured) from Kyikar, Tibet, 3400m, similar to *Borinda papyrifera*, is quite hardy and now 6m tall. Tough, brown hairs appear on the culm sheath and young canes; they disappear when the longitudinal growth is completed and the sheath blades fall on the ground. It seems to prevent slug damage. Some bamboos are favorite among slugs when new shoots grow. The beautiful silvery blue young canes slowly change into dull olive green.

KR5288 and **KR5600** could become good garden plants..

KR5913 from Nyingshi, Tibet at 2950 m altitude. Takes a lot of room, is still in observation. Said to have survived -21°C in Germany.

KR6356 (*F. grossa*?) Tibet 3500 m.

KR6438 and **KR6439** from Pasum Tso, Tibet at 3600 m altitude (!) attain max 7 m tall. May become deciduous after extreme frost, but culms turn green again in spring.

KR6791 (*Borinda grossa*?) comes from a 13 m tall plant in Bago, Tibet at 3500 m altitude with 5 cm thick culms. Very interesting as this one could be the first clumping giant! The canes grow wide apart like *Yushania*, so it needs plenty of space. Propagation is difficult, so scarce availability is expected in the years to come.



KR7613 is a nice Borinda with blue new culms, aging to yellow-brown (from Caojian, Yunnan, at 3200 m altitude)

New seedlings

Seeds from China under various names (F. gaolinensis, F. songmingensis and F. albocerea 'Black') gave identical, vigorously growing plants. In the garden they develop into tall and wide Borinda's, the species name is still unknown. They seem to be quite hardy, grow up >6 m , shooting quite late with a tropical look. An old fashioned Dutch winter is needed to know how hardy they really are ...

Pruning

Dwarf bamboo (< 100 cm)

These bamboos belong mainly to the genus *Pleioblastus* and *Sasaella*. Trimming can be done in early spring just before the new shoots appear. When a lawn is needed, a second trim may be done in early summer.

Trimming results in new, fresh leaves. A complete trim is necessary to remove half dead leaves from the previous year. Some dwarf bamboos have still good leaves after winter and only need trimming if you want to keep them short.

Medium bamboo (100-300 cm)

Pruning back to the ground is usually not necessary for medium bamboo. (NB *Fargesia*'s need no pruning at all!). Yearly thinning of old and (half) dead culms is all. Crooked or otherwise malformed culms, or very old culms (over five years) are cut back to the ground. Look regularly at the result from a distance. Some old, heavily leaved canes and culms hanging over a path during rainy weather, may be pruned to allow for more light for other plants; autumn and winter are the best seasons for pruning.

Tall bamboo (300-1200 cm)

These are the real giants (*Phyllostachys*, *Semiarundinaria* and *Bashania*) that grow tall and thick (4 - 8 cm) under favorable conditions. In an exotic garden these giants are important for their impact and for the protecting canopy for plants growing underneath them.

The best time for pruning is in winter. Leave newly planted bamboos alone for their first 3 years.

When tall bamboo is used as a hedge or screen, pruning is restricted to the removal of dead and bending culms. The tops of bending culms may be pruned as long as this is visually not disturbing. When a hedge hangs over too much, it may help to tighten it between horizontal canes. Do this with two people rather than alone. The horizontal culms can be drawn to each other with pieces of rope through the hedge. When tall bamboo is used as a specimen or as a grove, pruning can be skipped to allow for nesting possibilities for birds. Usually one will try to create a fairly open plant with scattered thick culms. When a tall bamboo is not pruned, it will eventually turn into an impenetrable amorphous mass. Thinning must be done! First remove all dead culms. Then all thin and deformed canes.

Unlike trees, bamboo culms don't grow in diameter or height after initial growth is completed. As long as the growing conditions for the plant are good, new culms will on average be thicker than the ones from the previous growing season. The youngest culms are among the thickest ones as long as the bamboo is developing into adulthood.

Prune away the oldest culms with dying branches 3 years after planting. The color of the oldest culms is often dull. Very old culms (4 years old or more) don't contribute to the plant's development anymore, and should be harvested (or shredded). Prune away the branches and the top. Culms older than 3 years are fully ripened and after a drying period they can be used for many purposes. Sometimes good culms are pruned by mistake. This often happens when you work too long, so be careful!

The thinnest culms from the last growing season may be pruned away as finishing touch. As a result you should now have created a rejuvenated new bamboo grove! Some people prune the lowest branches for a better view.

In spring when the new shoots are about 50 cm tall, only allow the thickest ones to grow and remove the rest.

When the new culms are still growing, the soft branches may be pulled down easily by hand in order to maintain an open structure and allow some under growth.

Many people are afraid for tall bamboo in their gardens. In Japan tall bamboo is more common, even in a tiny garden. The Japanese are used to controlling giant bamboo like *Phyllostachys pubescens*, *P. bambusoides* or *P. viridis* with saws and secateurs. In the cooler climate of North Western Europe other species like *P. atrovaginata*, *P. prominens*, *P. parvifolia* and *P. vivax* are hardier and a better choice. The art of pruning is: select only the very best shoots to replace older culms later.

Use a barrier around the bamboo to control the roots (60 cm deep). The minimal space for a giant bamboo is about 10 m². Prune in autumn all rhizomes that climb over the barrier. Keep thinning and fertilizing the bamboo every year, so the limited area will remain sufficient for a long time. Don't neglect this!



This giant shoot of *P. vivax* 'Huanwenzhu' was 68 mm thick in the summer of 2004! In March 2005 it froze to the ground during an unseasonal winter with temperatures dropping to -22°C.

It took 10 years for the plant to fully recover with new shoots up to 83 mm thick. In January 2016 one of the thickest canes was demolished by loads of glazed frost.

BAMBOO AS SCREEN OR AS HEDGE

Bamboo is excellent for a hedge. Unlike conifers or shrubs, bamboos tend to walk away, and produce rhizomes from which new culms arise. When conditions are good, this can happen at high speed! In a wild garden this may be allowed but in most cases bamboo must be confined. Have a look under "Preparations" on the next page for details.

A neat, trimmed hedge as well as an informal hedge can be made with bamboo. From very low (20cm) until tall (5 meters or more), from transparent until a green massive wall - it is all

possible. A full grown tall hedge provides not only shelter but also canes for free because every year the oldest canes are pruned.

Soil

Preparation of the soil is important to ensure a good growth. Important is:

1. drainage. Bamboo disgests wet feet.
2. plenty of humus like compost, peat, composted horse- or cowdung etc.
3. clay or loam is a good basis, on poor soils add lava powder (± 500 gram/m²)

Bamboo is very hard because of its high silicon content. Sand does consist of SiO₂ for a great deal but not in a form that a plant can absorb, so add lava powder. Other soil types may also benefit from lava powder, and become more fertile.

Water

Irrigation in dry periods is very beneficial for bamboo. In small gardens an ordinary garden hose will do. Larger plantings like a long bamboo hedge can effectively be watered with a hose through the bamboo. Make holes at every plant and tie up the end. Then connect the hose to the tap. The cheapest hose will do.

Irrigate in the evening or early morning. Avoid water with a high iron content! Too much iron disturbs the mineral balance in the soil, resulting in unhealthy leaves. The nursery garden is irrigated with well water, pumped into a pond where iron flocculates to the bottom. Then it flows to a second pond, it warms up and then it is used for irrigation.

Sun

For sunny spots there is much choice in good bamboos for planting a nice hedge. Table 2 at page 23 lists some of the most suitable bamboos. The choice for tall hedge bamboos in the shadow is quite limited: *Pseudosasa japonica* and *Fargesia* are the first options. *Phyllostachys* doesn't grow well in the shade and tends to grow rather leggy.

For a low hedge many *Sasa*'s or for instance some of the dwarf *Pleioblastus* species are a good choice.

Preparations

(Do not begin with these preparations when the site for the hedge is not well drained)

Dig a trench first. For a low hedge 30x30 cm will do. For a very tall hedge 100 cm wide x 50 cm deep is fine.

When the bamboo of your choice is a running bamboo, and you don't want an infinite growth, a rhizome barrier needs to be placed. You may use concrete tiles but a strip of HDPE is safer. Do not use pond foil. (Check appendix IV)

When the barrier has been placed, mix the soil with liberal amounts of compost and lava powder. Add coarse sand and peat moss if the soil is sticky (as is the case with loam or clay soil); add loam or clay and lava powder if you have peat soil. Throw the improved soil back in the trench. The best time to do this job is in autumn or winter. Planting is best done in early spring; if you plant later in the year, be sure of adequate irrigation.

Potted plants may be planted at any time. However, small bamboo plants are best planted in the spring, to avoid the risk of winter damage. Protect the plants during their first winter with a thick layer of mulch as even the hardiest bamboo is vulnerable as a young plant.



Planting

The faster you want a dense and mature hedge or screen, the bigger the plants should be; it may be economic to use a few large, bushy plants and divide it yourself. Do this only in early spring before the new shoots emerge! For a tall hedge the planting distance may vary between 50 and 100 cm, depending on your patience and/or budget. The gaps between the plants will be quickly colonized with new canes

The exception is *Fargesia*, which expands after the planting year only ± 10 cm per year in all directions. *Fargesia*'s are clumping, non running bamboos and are usually planted more closely with gaps of 30-40 cm. It is not invasive and spreads slowly.

A hedge of **running** bamboo can also be realized with rhizomes only, when the shipping of plants would cost too much for example. This is not possible with **clumping** bamboo. The best rhizomes are one year old, with sheath blades still covering the segments. Use pieces with about 6 buds in March or April. Planting depth is ± 25 cm. Some pieces may not give shoots, and it will take an extra year or two before the hedge or screen has reached an adult size.



Pleioblastus hindsii is a very good bamboo for a tall and dense screen

**plant
height distance remarks**

Sasa kurilensis	50-100	30-50	more winter green than S. tsuboiana
Fargesia robusta 'Campbell'	300-350	30-40	clumping, dense, erect
Fargesia murielae	200-300	30-40	clumping, dens, erect
Fargesia 'Jiuzaihou'	200-300	30-40	clumping, dens, erect
Pseudosasa japonica	250-350	40-70	large leaves, shadow or sun, erect
Pleiochl. hindsii	250-350	30-60	dense, protected spot, very Japanese
Pleiochl. linearis	200-300	30-60	dense, protected spot, very Japanese
Semiar. viridis	300-500	50-100	stately, tall hedge, very hardy
P. aureosulcata	300-500	50-100	'Spectabilis' has yellow canes, very hardy
P. bissetii	300-450	50-100	very tough leaves and extremely hardy
P. atrovaginata	300-500	50-100	very tall, stately runner, extremely hardy
P. rubromarginata	300-500	50-100	very tall, stately runner, for a nice screen

Table 2 some good bamboos for hedges and screens.

Vertically planted rhizomes promotes the development of canes, where as horizontally planted rhizomes stimulates the growth of new rhizomes. Plant the rhizomes in the same direction as the hedge. Rhizomes may be planted in long boxes on a warm place to promote early shooting. Wait for mild and rainy weather. The new shoots need protection for some time in order to adapt to sun and wind.

Important: planting rhizomes only works for running bamboos!

Pruning a hedge

When you need to reduce the height of a hedge, prune when the new shoots have attained their final height. For a tight hedge use thick wires on each side and connect cross wires in between. After a while the wires will not be visible anymore. However, I prefer bamboo canes instead for a natural look. Prune away dead and old canes.

Pruning is best done in winter. Do not harvest more canes than have grown in one year. Unless you want to reduce the density or height of your hedge. Low Sasa hedges can be cut to the ground for a complete renewal in early spring.

If the hedge is too tall, prune away the tallest canes in order to promote the growth of new, shorter ones. Don't remove the dead bamboo leaves on the soil – it protects the soil from drying out and feeds the plant. A ground cover of organic mulch is very beneficial



Bamboo on the summit of mount Fansipan, with 3400 m altitude the highest peak in Vietnam



This gardener must be a control freak ... normal development of the bamboo is impossible and it is vulnerable for frost too. Nevertheless it may live for years. An ugly sight!

BAMBOO AS A HOUSE PLANT

Bamboo dislikes dry air and low light; it is unsuitable for indoor cultivation. But if you still want to try, choose an ordinary dwarf bamboo. When it fails, it can still be planted outside. My advice is to use a winter hardy bamboo, for instance *Pseudosasa japonica*. In case of failure, it can still be planted in the garden.





BAMBOO IN A TUB

Mind the following rules when you grow bamboo in a tub:

- 1 Drainage holes at the bottom of the tub are essential.
- 2 Throw a 5 cm thick layer of split or gravel on the bottom.
- 3 The bigger the tub, the better the growth will be - at least 80 liter for larger species.
- 4 Use a good quality potting soil, which contains about 10% clay and at least 50% peat and compost. (do not use garden soil only!)
- 5 **From April onwards water well and apply liberal amounts of fertilizer (organic or osmocote).** Bamboo uses a lot of water, especially during sunny, windy days! Put large plants on a water bowl to avoid drying out. When temperatures drop at the end of summer, stop fertilizing. Use a fertometer to control the fertilizer concentration at the roots.
- 6 **Avoid a windy spot.** Avoid a windy, cool spot. (unless you use *Fargesia* or a large leafed species like *Pseudosasa japonica*)
- 7 Never allow the plant to dry out; If the leaves begin to curl water immediately! Potting soil warms up much quicker than garden soil; therefore a bamboo in a tub drinks lots of water in summer. A water bowl prevents desiccation very effectively.
- 8 Old and/or ugly canes must be pruned at soil level in December-January (Old is after 4 or 5 years) It stimulates fresh, new growth.
- 9 Subtropical bamboo like *Bambusa* must be kept frost free in winter on a light spot. Indoors these bamboos suffer from dry air. Bring them outside in summer for recovering.
- 10 Hardy bamboos should not be kept indoors during the winter. Treat them like conservatory plants or plant the pot in the garden and cover with mulch. Surplus water must drain, otherwise the plant suffers a lot. If the tub cannot be put in the soil, protect it with lots of straw and insulating bubble plastic. **The roots may never freeze!**
- 11 **Propagation** is best done in early spring. Use a cane connected to a piece of rhizome. Keep it moist under plastic, allow filtered sunlight the first weeks. When the shoots have produced leaves, give some fertilizer and allow more and more fresh air each day thus lower humidity.

The worst mistreatment is:

- **Desiccation (mainly in summer) and “drowning” (mainly in spring and autumn);**
- **Far too little or too much fertilizer and/or water;**
- **Unbalance between pot and plant**

Many examples may be seen in garden centers.

Good luck!



Phyllostachys nuda escaped and pushed up a heavy concrete tile. Good barriers will prevent such outbreaks. Pruning doesn't help. Separating the rizomes from the mother plant should be done as well, otherwise the invasion doesn't stop. Left over pieces of rizome will sprout again; prune them just before these shoots finished their growth - **not earlier!**

This treatment will exhaust the rizomes. These will slowly decay in time. Sometimes this (mis)treatment must be repeated, but it will be eventually successful.

The use of chemical weed killers like roundup is not effective (and bad for your health!).

To avoid problems with neighbours many people prefer clumping bamboos like ***Fargesia***. However, with root barrier properly applied (as described in appendix IV), running bamboos can be planted without risk.

BAMBOO CALENDAR

January. A good month to prune the ugly canes and harvest the canes, older than 4 or 5 years. A thick mulch should now cover the soil as protection against severe frosts. Water during dry, non freezing weather if necessary.

February. A good month to give rotten cow- or horse dung or compost. (It may also be done in December) Begin with the propagation if you have a glasshouse or polytunnel.

March. Ground covering bamboo (like *Sasa* and dwarf forms of *Pleioblastus*) must now be cut to the ground. Prune tops from bamboos if you want to stimulate new growth. Those who use chemical fertilizer may start by the end of this month with the first dose (although organic fertilizer gives stronger plants); when the plants produce their first new leaves it is the right time.

This month is excellent for propagation and division.

April. When frosts in the night are no longer expected, all winter protection can be removed. The very first bamboos start shooting now. Harvest of fresh edible shoots starts. (they taste a lot better than preserved ones)

May. Shooting is now at its peak; extra irrigation during dry periods may be necessary. Weeding begins, but mind the young bamboo shoots. When too many shoots grow together, harvest the thin ones for the kitchen. (for edibility see appendix I)

June. A few bamboos start shooting from now on; extra irrigation during dry periods may be necessary; give manure again.

July. Prune bamboo hedges when the new growth has ended. Water and manure!

August. As July. Stop giving manure. Prune away unwanted canes.

September. Apply a last gift of fertilizer, rich in Potassium and Phosphorus i.e. with bone meal.

October. Propagation is possible, although results are not as good as in early spring. Bring tender tub plants in safety. Check drainage in the garden after heavy rain.

November. From November on mulch your bamboo with straw, shredded garden waste or leaves. Protect young plants against drying wind. If frosty days are forecasted, bring even the toughest tub plants into safety.

December. Finish winter protection against wind and sun, especially for half hardy plants.

Canes can be tied together when snow is forecasted. Pruning can begin now 4 year old canes can be harvested.

Order new plants now for delivery in spring.

NB The increasing instability of our climate makes this calendar only a guideline. Extreme warm springs or autumns make the growing season longer, in 2014 even 4 weeks!



This rhizome of *Bashania fargesii* is washed clean to show the young shoots and the roots with the hair roots. The rhizomes of this invasive bamboo grow much deeper than other species, up to 1 meter! In a garden 1 m deep barriers are necessary for this monster. Most other bamboo species only grow 30-50 cm deep, so barriers of 60cm will do.

BAMBOO SHOOTS AS VEGETABLE

During shoot thinning (a new verb) I like to nibble on a raw shoot. The flavor and the taste reminds me at my childhood when I used to play in a swamp, nibbling on reed. In the future, when bamboo is a common crop, I think it will be possible to eat bamboo shoots from Holland.

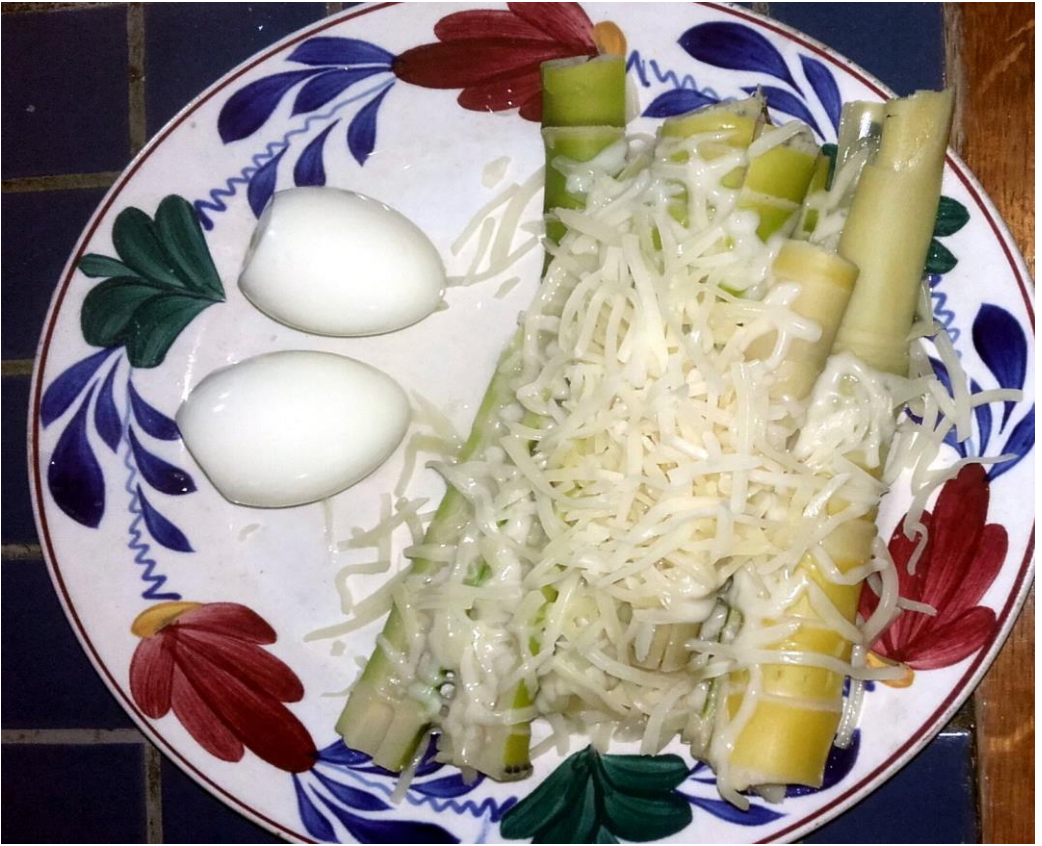
At my nursery I have a small patch in the jungle garden that is planted with *Phyllostachys* sp. 'Shanghai 3'. This selection, similar to *P. iridescens*, yields a good harvest every year in May. According to the 'Compendium of Chinese Bamboo' and myself the shoots of this species are very good. Other good bamboos for shoot production, mentioned in this book are: *Phyllostachys dulcis*, *elegans*, *flexuosa*, *pubescens*, *iridescens*, *nidularia*, *nuda*, *parvifolia*, *praecox*, *propinqua* and *vivax*. (even more species are mentioned, but these are not (yet) available)

My *P. dulcis* is rather sensitive and doesn't like harsh winters. *P. elegans* is still rare. *P. flexuosa* disappeared after years of flowering. *P. pubescens* doesn't grow well north of Paris. *Phyllostachys* sp. 'Shanghai 3' is a tough species and very good for shoot production.

P. nidularia is not hardy enough, but *P. nuda* is a good candidate. The shoots of this one are not very thick. *P. parvifolia* is very hardy and can give very thick shoots, but in some years it doesn't shoot. *Ph. praecox* is a tender, very early shooting species. *P. propinqua* was very tough but flowers gregariously since 2014 and has been removed. *P. vivax* tastes excellent and is one of the best choices I think. *P. bissetii* is good also, but the shoots are not big. The best choice I think is *Phyllostachys* sp. 'Shanghai 3', *bissetii* and *vivax*. Other species are also edible, but the Chinese book doesn't characterize them as tasty.

For those with room in their gardens: make your own source of bamboo shoots!

The site must be sunny and wind-protected; remove weeds regularly. Create irrigation during the summer



For those who have some space left in their gardens it might be fun to create a small grove for shoot production. Here are suggestions for these lucky people:

A protected and sunny spot is optimal. Weeding is important in the first years. Abundant irrigation and fertilization with rotted manure and/or compost + lava powder is beneficial. Start with healthy plants that will produce many rizomes. The use of giant divisions doesn't really give a big advantage, as these are slower to settle than vital younger plants. During the first few years harvest the thinnest shoots and the competing shoots that are growing too close together. When the bamboo has reached adult size, harvest only 2/3 of the shoots and leave 1/3 untouched. New culms are necessary for next year's shoot production. During the shooting season daily harvest is beneficial. Only shoots that just emerged are suitable for consumption; as soon as a shoot elongates it is too late to harvest. Canes should be evenly spread as much as possible. In Japan, as a rule of thumb for shoot production of *P. pubescens*, 2000 canes/ha. = 1 cane per 5 m² are maintained. At the Dutch latitude the optimal cane density probably needs to be 3 times more, but we lack experience on a large scale so far. A culm should not be older than 7 or 8 years. Very tall canes must be topped to avoid wind damage. Topping must be done as soon as the shoot has grown into its adult size. Mark the new cane, each year with a different color or symbol for future thinning. After many years the grove slowly gets exhausted despite extra fertilization. Rejuvenation is

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done by replacing the central part of the grove with new plants and compost. Grow your own shoots (and canes as a side product); it provides you with very healthy food. It is easy and makes a man lucky! (For more information check The Journal of the American Bamboo Society Vol 3, nrs. 1, 2 and 3.)



Constructions with home-grown bamboo



This carport was built in 2009 only with bamboo canes from our jungle garden. It withstood 30 cm of snow easily!

The roof is made waterproof by enclosing plastic between bamboo canes. The skeleton that supports the roof is made from *Phyllostachys parvifolia*, *P. kwangsiensis* and *P. atrovaginata*.

We tested the strength of the construction by hanging on the skeleton and consolidating the weakest parts of it. Overall 2000 m of canes were used. In 2016 some maintenance was needed, but the carport was recycled in 2022. A new one will be built soon! (2024).

CANE CULTIVATION

The most frequently used building material in the world is ...bamboo. A lot is used as raw material for paper and particleboard. Bamboo plantations in the Netherlands might be possible also. As Tonkin canes from China are not cheap anymore, so it might be economic to produce them here now. It saves a lot of transport costs too.

Pilot projects for commercial bamboo culture are currently taking place in the Netherlands. As precipitation in Dutch summers is usually not enough for optimum growth, irrigation is necessary. The following bamboo species are suitable:

Bashania fargesii

A very robust, beautiful, thick-walled bamboo, naturally occurring in a cool, wet climate. The max. height is 10 m, with rather long internodes (segments); maximum diameter is 4-5 cm. Heavy, wet soil is perfect. The rhizomes travel deep, 50 cm or more. Leaves are as big as in *Pseudosasa japonica*. Growth is upright and slightly zig-zag. Protection from wind is beneficial. Trials at the nursery show a yearly yield of \pm 300 canes per are.

Phyllostachys rubromarginata

A very tall bamboo that does quite well here. Canes are very straight, the nodes are less prominent than in most other species. Maximum height is \pm 10 meter, de maximum diameter is \pm 3,5 cm. Initially growing as a clump, it turns out to be a runner after some years.

Phyllostachys atrovaginata

is a premium choice, extremely frost hardy and very strong with a maximum height of 12 m and a maximum diameter of 8 cm. Root competition with trees should be avoided!

***P. nigra* 'Henonis'** yields good quality canes up to 10 m tall and 5 cm thick and grows well in the Dutch climate. **Warning: Flowering is soon expected, don't plant now!**

Phyllostachys bissetii

A really tough species, doing very well here, up to 8 m tall and 3.5 cm thick.

Other good species are ***P. nigra Boryana***, ***P. parvifolia***, ***P. prominens***, ***P. angusta***, ***Semiarundinaria viridis***.

Warning: Cane cultivation is a very labour-intensive job!

Initially, the planting distance can be 5 meter. Cultivation of pumpkin, corn, courgette or other vegetables is possible during the first years. These plants require plenty of manure and compost, which improves the soil for the future bamboo growth.

Cover the soil with mulch to suppress weeds. N.B. Don't apply roundup, as this disturbs the development of bamboo! Allow undisturbed growth for the first 4 years.

After 4 years prune away all dead and thin canes. Fertilize each year and mark all new canes each year with a different symbol; remove each year all thin, crooked and other useless shoots and canes. In the winter following the 8th year harvest all canes, marked in the 5th year. In de winter following the 9th year harvest all canes, marked in the 6th year etc. etc. leave the branches as mulch. Sort, cut and bundle the canes at the desired length.

Cut the canes at ground level to allow easy access.

Bring the canes in a dry, airy place; allow 3 months for the drying process.

Avoid bending during the drying process The first estimated harvest will be about 2000 canes/ha with an average length of 3-4 meter. More information is available upon request.



Chimonobambusa tumidinoda. This bamboo with its characteristic pronounced nodes is used in China for the production of walking sticks.

Phyllostachys aureosulcata is not suitable for the production of straight canes, as this bamboo occasionally produces zig-zag canes :



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On March 3rd 2005 the temperature suddenly dropped from +10°C to -20°C. Such extreme temperature drops had never occurred in the past 300 years. We received almost 50 cm of snow. This picture shows how bamboo bends under the weight of the snow. When the snow has melted, most canes turn upright again. It took a few years for many bamboos to recover again. The very hardest bamboos only showed little damage.



NEW DEVELOPMENTS

The nursery began almost exclusively as bamboo nursery in 1990. Over the years the collection extended with exotic, “jungly” plants. New plants are observed for a few years to test their hardiness. Only tough plants that contrast with bamboo are tested.

Among these new plants you will find architectural plants with limited hardiness like palm trees and tree ferns. These plants need winter protection and are only suitable for the real plant freak.

Some bamboos have been removed from the collection. The most important criteria are hardiness and ornamental value. The following bamboos for instance did not survive the terrible freeze of '95/'96:

Chusquea gigantea (but replanted in 2015, unfortunately flowering later)

Phyllostachys bambusoides “Castillonis”

Phyllostadiys bambusoides “Subvariegata”

Drepanostachyum aristatum

The following bamboos frequently suffered badly from harsh winters and are no longer available:

Hibanobambusa tranquillans

Phyllostachys aurea and ***P.bambusoides***

Pleiolblastus simonii, ***Pl. simonii*** ‘Heterophyllus’, ***P. china*** and ***P. kodzumae***

Sasa (all species except ***S. kurilensis*** and ***S. palmata***)

Semiarundinaria kagamiana , ***S. villosa*** and ***S. yamadorii***

Excellent alternative species for most of these bamboos are available; I try to separate continuously the wheat from the chaff.

Both winters in '95/'96 and '96/'97 proved that most bamboos have excellent hardiness. Only 4 out of 150+ varieties were frozen to death. From the current assortment of garden plants a much higher percentage passed away.

In some gardens even very hardy bamboos did not survive as they dried out in extremely dry, frosty weather. Irrigation during long, dry weather could have saved some of them.

An extreme drop in temperature early March 2005 (from +10°C to -22°C within a few days!) caused unexpected damage, even in bamboos that never were harmed before. The old temperature record was surpassed with 4°C! This cold wave made me say goodbye to ***Phyllostachys viridiglaucescens***. It gave room to new experimental plantings, not only bamboo but also Eucalyptus, various ferns, palm trees and much more.

Global warming is already clearly noticeable in the jungle garden: bamboos grow ever bigger and taller!

New species under observation since 2021:

Yushania boliana appeared to be not hardy enough

Fargesia fungosa borderline hardy



***Phyllostachys vivax* 'Huanwenzhu'**. Young developing culm. When the culm sheath that protects the segment is fallen, a powder is revealed under the node. The growth speed of this 74 mm thick shoot during warm weather was an astonishing 2 cm/hour!

NEW INTRODUCTIONS

During the last 5 years some promising clumping bamboos of the genus *Borinda* are under observation:

Borinda (Fargesia) KR5287 is a hardy form of *B. papyrifera* from Tibet

Borinda (Fargesia) KR6438 from Tibet, hardy and promising

Borinda (Fargesia) KR7613 another hardy form of *B. papyrifera* from Yunnan “Blue Dragon”, a *B. papyrifera* from tissue culture. Survived -15°C so far.

F. murielae – reintroduced from the wild; suffers from bamboo mites

KR means Keith Rushforth, the plant hunter who introduced many bamboos from the far East.



Hibanobambusa tranquillans 'Shiroshima'



APPENDIX I - bamboo characteristics

	col 1	col 2	col 3	col 4	col 5	col 6	col 7	col 8	col 9	col 10
ARUNDINARIA	Used in the past for other bamboos than Phyllostachys and Bambusa.									
<i>gigantea en tecta</i>	zw	mh	m	m	w		4 oe	B?	-	Disappeared after flowering
BASHANIA										
<i>fargesii</i>	zw	zh	di	gr	fw		3-5 bo	Bs	xx	Running tall monster!
<i>qingshengshanensis</i>	zw	mh	m	gr	fw		3-5 bo/ha	B	xx	Less tall, good for hedges
CHIMONOBAMBUSA										
<i>quadrangularis</i>	hw	mh	m	m	fw		4 bo	A	xxx	Almost square culms
<i>tumidinoda</i>	mw	mh	m	kl	fw		2 s	A	xxxx	Pronounced nodes; walking stick
DREPANOSTACHYUM	Tender bamboos for enclosed city gardens, very ornamental!									
<i>hookerianum</i>	nw	mh	du	kl	pol		3 kuip	-	xxx	On order only
CHUSQUEA	From South America									
<i>culeou</i>	mw	h	di	kl	pol		4 s	-	xxx	Temperamentful bamboo
<i>gigantea</i>	mw	zh	di	kl	pol		4 s	-	xxx	Temperamentful bamboo, half hardy
<i>montana</i>	mw	mh	du	kl	pol		4 s	-	xxx	Lower, montane form
FARGESIA incl.										
Borinda	Clumping bamboos from West China; many branches on each node.									
<i>crassinoda</i> Kew Beauty	hw	mh	m	kl	pol		2 s	-	xxxx	Tiny leaves; protected garden only
<i>denudata</i>	zw	mh	m	kl	pol		3 so	-	xxx	Small leaves, elegant
<i>dracocephala</i>	w	mh	m	kl	pol		4 so/ha	-	x	Similar to murieliae, tight clump
KR5287 <i>F. papyrifera?</i>	w	h	m	M	pol		4 so	-	xxxx	From Kiyakar, Tibet, must try!
KR5913 <i>F. grossa?</i>	w	mh	m	m	pol		3 so	?	xxx	from Tibet, under observation
KR6438	w	h	m	m	pol		3 so	?	xxx	from Pasum Tso, Tibet, under observation
KR7613 <i>F. papyrifera?</i>	w	h	m	m	pol		3 so	?	xxx	fat blue canes
<i>murielae</i> x <i>nitida</i>	zw	h	m	kl	pol		3-5 So/ha	-	xxx	vigorous hybrids, better than parents
<i>murielae</i> Various clones	zw	h	m	kl	pol		3 so/ha	-	xx	Only re-introduced forms from the wild
<i>nitida</i>	zw	h	m	kl	pol		2 so/ha	-	xx	After flowering (2006) many new clones
<i>robusta</i>	zw	h	m	kl	pol		4 so/ha	-	xxxx	Upright, one of the very best Fargesia's
<i>robusta</i> Wolong	zw	h	m	m	pol		4 so	-	xxxx	fargesia with larger leaves
<i>scabrida</i>	zw	h	m	m	pol		4 so	-	xxxx	Big, blueish, arching, nice
<i>sp. Jiuzaiyou</i>	zw	h	du	kl	pol		4 so/ha	-	xxxx	Red canes in the sun
<i>utilis</i>	w	h	m	kl	pol		3 so	-	xx	Long arching thick canes
<i>rufa</i>	zw	l	du	kl	pol		3 so/ha	-	xx	Low, spreading very tough
<i>yulongshanensis</i>	w	zh	di?	m	pol		4 so	-	xxx	Similar to utilis but upright growth
INDOCALAMUS										
<i>latifolius</i> Hopei	zw	mh	du	zgr	w		2 so	-	xx	Bamboo with very large leaves
PHYLLOSTACHYS	biggest group multi purpose (construction, food, housing etc.)									
<i>angusta</i>	zw	h	di	m	mw		5 so/ha	As	xxx	Nice upright, slow spreading
<i>atrovaginata</i>	zw	zh	zdi	m	fw		5 bo	As	xxxx	Smell as incense, upright, straight growth
<i>aurea</i>	mw	h	di	m	pol		5 so/ha	As	xxx	Nice but not hardy enough in Holland
<i>aureosulcata</i>	zw	zh	di	m	mw		3-5 bo	Bs	xxx	zig-zag canes, green and yellow
„ Alata	zw	zh	di	m	mw		3-5 bo	Bs	xxx	idem totally green form
„ Aureocaulis	zw	zh	di	m#	mw		3-5 bo	Bs	xxxx	idem totally yellow form; very nice!
„ Harbin	zw	zh	di	m	mw		3-5 bo	-	x	idem ree and yellow stripes
„ Spectabilis	zw	zh	di	m#	mw		3-5 bo	Bs	xxx	idem green with yellow sulcus

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col 1 col2 col3 col4 col5 col6 col7 col8 col9 col10

bambusoides	Castillonis	mw	zh	di	m	mw	5 so/bo	As	xxx	Lost after a freeze
"	Albovariegata	mw	h	di	m#	mw	5 so	A	xxx	Variegated leaves; Icollectors plant
<i>bissetii</i>		zw	zh	di	m	mw	3-5 bo/ha	As	xxx	Dark green, tough as old boots
<i>decora</i>		zw	zh	di	m	mw	5 so/ha	Bs	xx	Red shoots
dulcis		zw	zh	zdi	m	fw	5 bo	s	xx	Best tasting shoots
elegans		w	h	di	m	mw	5 so	As	xxxx	elegant, upright
glauca		w	zh	di	m	mw	5 bo	s	xx	Various forms exist
"	Yunzhu	w	zh	di	m	mw	5 bo	s	x	With brown spots;currently flowering
heteroclada	Straightstem	w	zh	di	m	fw	5 bo	-	xxx	Blue grey culms, tolerates floods
iridescens		w	zh	zdi	m	fw	5 bo	Bs	xxx	Lovely shoots, similar sp. Shanghai 3
nigra		w	h	di	m	mw	5 so	As	xxxx	Shiny, black canes, needs hot weather
"	Boryana	zw	zh	zdi	m	w	5 so/bo	As	xxx	green with black spots
"	Henonis	zw	zh	di	m	w	5 so/bo	As	xxx	green elegant, strong
<i>nuda</i>		zw	h	di	m	fw	5 bo	B	x	very hardy
<i>parvifolia</i>		zw	zh	zdi	kl	fw	5 bo	As	xxxx	Real hardy giant
praecox		w	h	di	m	mw	5 bo	s	x	Early edible shoots
<i>prominens</i>		zw	zh	di	m	mw	5 so	-	xx	Giant with pronounced nodes
<i>propinqua</i>	Li Yü Gan	zw	zh	zdi	m	mw	5 so	s	xx	Flowered to death
pubescens		mw	mh	di	m	w	5 bo?	As	x	Biggest in Europe (25 m), much lower here
<i>rubromarginata</i>		zw	zh	di	m	w	5 bo	As	xxx	slender, very tall and shiny culms
<i>virella</i>		zw	zh	di	m	fw	5 bo	-	x	Incense smell,untidy growth
vivax		w	zh	zdi	m	mw	5 so/bo	s	xxxx	Graceful giant
"	Aureocaulis	w	zh	zdi	m	mw	5 so/bo	s	xxxxx	Graceful giant with yellow culms
"	Huanwenzhu	w	zh	zdi	m	mw	5 so/bo	s	xxxx	Idem green with yellow sulcus
"	Huanwenzhu									
"	Inversa	w	zh	zdi	m	fw	5 so/bo	s	xxx	Idem, yellow with green sulcus

PLEIOBLASTUS

argenteostriatus		w	l	zdu	kl#	fw	2 bb	-	xx	Variegated dwarf for ground covering
fortunei		w	l	du	gr#	w	3 bb	-	xx	idem
gramineus		w	h	m	ga	fw	4 so/ha	-	xxxx	Small leaved form of <i>P. hindsii</i>
hindsii		w	h	di	m	fw	3 so/ha	Bs	xxx	Nice shootsstraight canes
linearis		w	h	m	ga	fw	4 so/ha	-	xxxx	Similar to <i>P. gramineus</i>
pygmaeus		w	zl	zdu	kl	fw	3 bb	-	x	Real dwarf, for a "bamboo lawn"
"	Distichus	w	l	du	m	fw	3 bb	-	x	Dwarf with fern like leaves
shibuyanans	Tsuboi	w	l	du	m#	fw	4 so	-	xxx	Cream yellow leaves, nice
viridistriatus	=auricoma	w	l	zdu	m#	fw	3 bb	-	xxxx	Very bright yellowish-greenish leaves

PSEUDOSASA Arrow bamboo

japonica		w	h	m	gr	mw	3-5 so/ha	A	xxx	upright, very common bamboo
viridula	=pleioblastoides	w	h	m	gr	mw	3-5 so/ha	A	xxx	Very similar but slightly hardier

SASA

<i>glabra</i>		zw	l	zdu	gr	fw	3 bb	-	x	Tough green ground cover
"	<i>Albostriata</i>	zw	l	zdu	gr#	fw	3 bb	-	xxx	Variegated form
<i>kurilensis</i>		zw	l	du	gr	fw	3 bb	-	x	Used for paper production in Japan
<i>nipponica</i>		zw	zl	zdu	m	w	2 bb	-	xx	White edges on leaves in winter
palmata		w	mh	m	zgr	fw	2 so/oe	s	xx	Graceful, tolerates water logging
tessellata		w	l	du	zgr	fw	1 so	-	x	Biggest leaves of all bamboos
veitchii		w	l	du	gr	fw	3 bb	-	x	White edges on leaves in winter

kol 1 kol2 kol3 kol4 kol5 kol6 kol7 kol8 kol9 kol10

SEMIARUNDINARIA**Good for tall hedges, bird's favorite nesting bamboo**



fastuosa	w	zh	zdi	gr	mw	5 so/ha	B	xxxx	Upright, tall and thick culms
viridis	zw	zh	di	gr	mw	5 so/ha	B	xxxx	idem, but more hardy

THAMNOCALAMUS

tessellatus	w	h	m	kl	pol	4	so/ha	-	xxx	From Sth Africa, tender clumping
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YUSHANIA

anceps	mw	mh	du	kl	w	4 so	-	xxxx	Tender but beautiful
chungii	w	mh	du	kl	w	4 so	-	xxxx	Like maculata but smaller
ferox	w	l	du	m	w	4 so	-	xxxx	Grass like leaves, graceful
maculata	mw	h	m	m	w	4 so	-	xxx	Beautiful, propagation difficult

	=	Very tough
	=	tender
	=	May drop leaves in harsh
No background color	=	winter

MEANING OF SYMBOLS

col1:	hardiness	w = hardv
		zw = Very hardy
		mw = Not so hardy
		hw = half wintergreen, will survive
		nw = <i>Not hardy</i> (tub-plant)
col2:	height	zh = Very tall (5-10 m)
		h = tall (4-5 m)
		mh = medium (2-3 m)
		l = low (1-2 m)
		zl = dwarf (< 40 cm)
col3:	culm	zdu = Very thin (till 5 mm)
		du = thin (5-15 mm)
		m = medium (15-25 mm)
		di = thick (25-35 mm)
		zdi = Very thick (> 35 mm)
col4:	Leaf shape	kl = small (tot ± 8 cm)
		m = medium (8-15 cm ongeveer)
		gr = large (15-25 cm ongeveer)
		zgr = Very large (> 25 cm)
		ga = Grass like
		# = variegated
col5:	growth	pol = Clumping
		w = Spreads a little
		Medium
		mw = spreading
		fw = Fast runner
col6:	site	1 = Full shadow
		2 = 70% shadow
		3 = Medium shadow

		4 =	20% shadow
		5 =	Full sun
col7:	use	s =	ornamental
		ws =	Little ornamental
		so =	Specimen plant
		ha =	Hedge plant
		bo =	Bamboo grove
		oe =	Loves moisture
		bb =	Ground cover
		kuip =	Tub plant
col8:	Usefulness	A =	For good canes
		B =	For med. Quality canes
		s =	For edible shoots
col9:	ornamental	x =	More x=more beautiful
col10:	remarks		



Bamboo fence made of home-grown bamboo – cheap but time-consuming



Climbers also love bamboo

APPENDIX II – frequently asked questions

Help! My bamboo invades my garden.. How can I control this plant again?

Running bamboos may invade a garden if not properly confined. They must be embanked. Dig a small, deep trench around the plant and cut through all rhizomes that you encounter. Place a root barrier around the plant.(see appendix IV) Consequently remove all rhizomes outside the barrier. Never place running bamboos in tubs in the ground, as they will demolish the tub and escape in time!

Which bamboo is not running, does not grow very tall and is nice evergreen?

Fargesia. F. rufa remains rather low (1.50 meter); **F. sp. Jiuzaihou** 1, 2-3 meter tall, and **F. robusta**, 3-4 meter tall. **Thamnocalamus tessellatus** is suitable for mild climates, 3 meter tall. People with green fingers may prefer **Chusquea couleu** in mild climates.

Which bamboo is suitable for screens or hedges?

Especially upright growing species are used. Which ones? That depends on the amount of sun. In full sun **Phyllostachys atrovaginata**, **P. rubromarginata** and **Semiarundinaria viridis** are good for a tall screen.

In medium sun i.e. **Bashania qingshengshanensis**, **Pseudosasa japonica** and **Brachystachium densiflorum** are suitable, and all *Fargesia*-species for a medium tall and very dense hedge. Use rhizome barrier if you plant runners! Long hedges should be composed of different species to spread the risk of flowering.

How many plants do I need for a hedge or screen?

When you start with plants in a 3 or 5 liter pot, on average after 3 growing seasons your hedge will be closed. The average planting distance for running bamboos is between 1 to 1.5 meter, for clumping bamboos 40 to 60 cm. Running bamboos grow faster than clumping bamboos. For immediate privacy big plants in 25 liter pot or more are used.

Potted bamboos look rather miserable. Do you have luxuriant plants?

Bamboos in pot lack enough room for their roots. As soon as they produce too many shoots, they will be divided. Once planted in the ground luxuriant growth will come.

My bamboo hedge turns yellow in winter; do I something wrong?

Possible answers:

1. You may have bought a different plant, sometimes sold as “bamboo” i.e. *Miscanthus*. *Miscanthus* is an ornamental reed, it turns yellow and dies back each winter.
2. You may have bought a half hardy bamboo like ***Phyllostachys aurea***; in many garden centers this bamboo is still for sale although it is not hardy enough in the Netherlands.
3. High water table in winter causes dead roots and yellow leaves.
4. Fresh dung in autumn may cause dead roots and thus yellow leaves.
5. Extreme weather conditions like salt wind (at the coast) or extreme dry wind in a barren landscape may cause yellow leaves.
6. Voles may have eaten from the roots.
7. Desiccation

during extreme frosts in combination with winter sun and high wind.

8. Some *Fargesia*-species naturally drop a part of their leaves in autumn which is normal

9. Chalky soil with pH>8 causes yellowing of the leaves.

Which bamboos are suitable as houseplants?

The air in houses is usually far too dry for bamboo. (Some florists sell non bamboo plants with “bamboo” in their name like “lucky bamboo”).

Do you grow bamboos with fat culms that are not tall?

No. The fatter a culm is, the taller the plant will be.

Do you grow clumping bamboo with really thick culms?

In the tropics this is common. Some new clumpers like Borinda are now under observation. In a very mild climate you may grow Bambusa for fat culms.

Can I pay by switch card at your nursery?

Yes you can.

Do you guarantee that your plants are healthy?

Yes we do. When you follow our advice your bamboo will thrive. Sometimes plants die, it is part of gardening. Different environmental factors in your garden affect plants, we cannot control this anymore when you cultivate your plants. But when loss of a plant is caused by the nursery, we will replace it.

Do you design gardens?

No, but I can bring you into contact with good designers.

Do you lay out gardens?

No, but I can bring you into contact with good landscapers.



Not all bamboos give straight canes. The zigzagging canes in the centre from *Bashania fargesii* are thick walled, and last longer than the other straight ones from *Phyllostachys*.

APPENDIX III - more information

Bamboo names

There is a lot of confusion about names. Common errors are:

<i>Arundinaria murielae</i>	should be	<i>Fargesia murieliae</i>
<i>Sinarundinaria</i>	should be	<i>Fargesia</i>
<i>Bambusa metake</i>	should be	<i>Pseudosasa japonica</i>
<i>Bambusa aurea</i>	should be	<i>Phyllostachys aurea</i>
<i>Bambusa nigra</i>	should be	<i>Phyllostachys nigra</i>
"giant bamboo"	should sometimes be	<i>Miscanthus floridulus</i>
House bamboo	is usually not a bamboo	
<i>Pleioblastus simonii</i>	is sometimes sold as	<i>Pleioblastus humilis</i>
<i>Hibanobamhusa tranquillans</i>	'Kimmei' is sometimes sold as	<i>Sasa(ella) glabra</i> 'Albostrata'
<i>Semiarundinaria fastuosa</i>	is sometimes sold as	<i>Pleioblastus hindsii</i> or <i>P. simonii</i>

Recommended books:

"The gardener's guide to growing temperate bamboos", Michael Bell

"The book of bamboo", David Farrelly, Sierra Club Books, San Francisco

"A compendium of Chinese Bamboo", China Forestry Publishing House, ISBN 981-00-3435-0

"Hardy Bamboos, taming the dragon", Paul Whittaker, Timber Press

addresses:

EBS Nederland

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Essenlaan 84

3442 JK Woerden

Nederland.

APPENDIX IV – root barrier

Running and non running (clumping) bamboos

Clumping bamboos don't run away and are no direct threat for pond foil, pavement or neighbours.

Hardy clumpers are *Fargesia*, *Borinda*, *Chusquea* and *Drepanostachyum*. Usually *Fargesia* is the best choice for smaller gardens. All runners can be invasive and need to be confined to their spot with root barrier.

Root or rhizome barrier

Root barrier is 1 or 2 mm thick and 60-100 cm deep. It is made of High Density Poly Ethylene. We sell 64 cm HDPE in any desired length.

The shape and dimensions of the bamboo area

Choose the site and the shape of the bamboo area first. Once the barrier has been placed the bamboo can only grow within its allocated space; make it big enough for the bamboo you wish to grow. The minimum area for a dwarf bamboo is one square meter, for medium tall bamboo 2 - 3 m² and for tall bamboo 6 m². For giant bamboo 10 m² is the absolute minimum. The shape of the area is not important but don't make it smaller than 1 meter. The most economic shape is a circle.

Placing the barrier

The barrier must encircle the bamboo and a long, narrow spade is helpful for digging the trench in which the barrier must be placed. To ensure that the bamboo cannot escape, both ends of the barrier must be folded backwards and then connected into each other. Use strips on both sides to tighten the connection with bolts and nuts. Keep 2-3 cm of the barrier above the soil, if unsightly cover with grit or bark.



Check regularly

Bamboo rhizomes may try to climb over the ridge of the barrier, so check each autumn if the bamboo still "behaves". This is important! If you find an escaped rhizome, cut it off and remove all parts that grow outside the barrier. The nursery is not responsible for escaping bamboo in your garden ...

BARRIER LENGTH IN RELATION TO DIAMETER AND SURFACE

LENGTH FOIL	CIRCLE		SQUARE		RECTANGLE 1:4	
	Diameter	Surface	Side	Surface	Sides	Surface
4 m	1,2 m	1,1 m ²	0,9 m	0,9 m ²	0,4 x 1,5 m	0,5 m ²
5 m	1,5 m	1,8 m ²	1,2 m	1,4 m ²	0,5 x 1,9 m	0,9 m ²
6 m	1,8 m	2,6 m ²	1,4 m	2,0 m ²	0,6 x 2,3 m	1,3 m ²
7 m	2,1 m	3,6 m ²	1,7 m	2,8 m ²	0,7 x 2,7 m	1,8 m ²
8 m	2,5 m	4,7 m ²	1,9 m	3,7 m ²	0,8 x 3,1 m	2,4 m ²
10 m	3,1 m	7,5 m ²	2,4 m	5,9 m ²	1,0 x 3,9 m	3,8 m ²
12 m	3,7 m	10,9 m ²	2,9 m	8,6 m ²	1,2 x 4,7 m	5,5 m ²
15 m	4,7 m	17,2 m ²	3,7 m	13,5 m ²	1,5 x 5,9 m	8,6 m ²
20 m	6,3 m	30,9 m ²	4,9 m	24,3 m ²	2,0 x 7,9 m	15,5 m ²
25 m	7,9 m	48,5 m ²	6,2 m	38,1 m ²	2,5 x 9,9 m	24,4 m ²
30 m	9,5 m	70,2 m ²	7,4 m	55,1 m ²	3,0 x 11,9 m	35,3 m ²

**(Extra 30 cm for the connection as described on the previous page is included)
If you want to create more waving forms, choose the barrier 10-15% longer.**



Route description from highway A32: take exit 7, turn left at the roundabout, after \pm 1 km turn right at the traffic lights. You see a water tower at your left. After this tower, turn right (Kwickels). After 400 m the nursery is at your left (number 3, enter through the iron gate).

Coming from the road Blokzijl – Steenwijk: follow the sign “Steenwijkerwold” at the first roundabout. When you approach traffic lights turn left, you see a water tower on a hill at your left. After this tower, turn right (Kwickels). After 400 m the nursery is at your left (number 3, enter through the iron gate).



Most cars can transport much more bamboo than thought!

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