



Propagating Bamboo Through Culm Cuttings

Ethiopia | Madagascar | Tanzania

Introduction

Culm cutting is a vegetative propagation method, highly suitable for thick walled bamboo with prominent nodal buds (Figure 1) or branches with aerial roots. The best season to practice this method is pre-monsoon/early monsoon as the culms have high growth hormones and carbohydrate reserves during that time.

Propagation Medium

Propagate culm cuttings in a sand bed (Figure 2). Use locally available, cheap and chemically inert sand as it accelerates drainage, improves aeration and allows easy rooting and rhizome formation with minimal damage to roots and rhizome while transplanting. Culm cutting propagation can also be carried out in well-drained sandy soil.

Sand Bed

Use three layers of bricks to hold the sand. The size of sand bed could be (Height = ~ 20 cm; Width = 1.2 m; Length = 5 or 10 m or more depending on requirement). Alternatively, locally available material such as flattened bamboo can also be used instead of bricks.



Figure 1



Figure 2

* Please note, sticky or clayey soil should be avoided.

Step by step

Select a 1-2 year old bamboo culm. To avoid younger or older bamboo stems, it is advised to mark the age in bamboo culms by using different color paint). Cut the selected poles at their base with an axe, knife or hacksaw. Avoid splitting of culms.



Discard the top of the culm. In most species, the middle portion of bamboo is highly suitable. Now, prune its foliage and retain the branches (up to 3-5 internodes) close to the culm portion.



A culm cutting can have one, two or three internodes with buds or branches. Cut at the half internodal point on each side. Avoid damage to buds or splitting of poles.



Cuttings should be stored in shade and be covered in wet rice sacks while transporting to nursery.



In Nursery, leave the cuttings immersed in rooting hormone mix (Indolebutyric acid (IBA) or Napthlene Acetic Acid (NAA) solution (200 ppm) for few hours (preferably over night).



Just before planting, dip the cut ends of the culm cuttings in 0.1% fungicide solution (1 gram per liter). Fill the hollow interior part of culm with wet soil/sand to facilitate moisture availability.



Ensure that the culm cuttings are placed flat on the sand bed at a distance of 10 cm, to avoid overcrowding and root overlap. Cover the cuttings with sand/soil.



Sprouting usually takes 10-20 days from the day of planting and continues till 2-3 months. Depending on the variety of bamboo, root and rhizome formation takes approximately 1 – 3 months.



Soaking in rooting hormone combinations improves root formation and increases the survival rate. However, if propagation is carried out during pre-monsoon season, rooting hormones are not needed.

Partial shade is necessary to avoid drying of cuttings and to maintain humidity. Water the sand beds twice daily but avoid water logging in case of soil beds.

Check for roots and rhizome formation before removing them from propagation beds. Scoop the cutting with roots, rhizome and stem intact. In case of soil beds, water them thoroughly for few days before transplanting.



Keep the potting mixture ready (Soil, sand and compost; 1:1:1 mixture) beforehand. Carefully separate the bamboo plant (Roots, rhizome and stem) using hack saw or sharp knife.



Immediately after separating the bamboo plant from cutting, transplant them into poly bags. Water the plants immediately and place them in partial shade. Thereafter water them regularly.



Keep the plants under partial shade for a month and then expose to direct sunlight. After four to six months, bamboo saplings are ready for planting in the field.



"This publication has been produced with the assistance of the European Union and International Fund for Agricultural Development. The contents of this publication are the sole responsibility of International Network for Bamboo and Rattan and can in no way be taken to reflect the views of the European Union or International Fund for Agricultural Development."

For further information, please contact:

For further information, please contact:
INBAR secretariat:
No. 8, Fu Tong Dong Da Jie, Wang, Jing Area, Chaoyang District, Beijing
100102, P.R. China
Telephone: +86-10-6470 6161, +86-10-8471 3337, +86-10-6471 7108
Fax: +86-10-6470 2166 | Email: info@inbar.int

