

## Short Communication

# Bamboo: a versatile plant

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### Abstract

This paper deals with the versatile uses of bamboo plant species. It has many useful properties and used for various purposes. Bamboos are used in landscaping, fencing, housing, raw materials for crafts, pulp for paper industry and fabrics for cloth industry besides culinary products, fodder etc. The young shoots of bamboo are used for preparing various delicious foods, processed products and also used as medicines. Various bamboo species are also utilized in herbal and traditional medication. It also has huge potential for solving many problems of environmental and social needs.

**Key words:** Bamboo, environment, culinary, medicine and ornamental use.

### Introduction:

Bamboo (*Bamboo* Schreb.) is an evergreen perennial flowering plant belonging to the monocots family Poaceae. This woody grass widely grows in tropical, subtropical and also in temperate zones of India and world as well. The genus is mainly in distributed Asia, Africa, and Tropical America. There are about 90-114 genera and about 1200-1400 species of Bamboo found all over in the world. Most of the Bamboo species are found in forests and also in farmlands, riverbanks, roadsides and rural areas. Bamboo is a diverse plant, which have the ability to adopt any extreme climatic and soil conditions, (Hossain *et al.*, 2015). It is widely used as a substitute for wood, timber for construction purpose. They are also used for preparation of bamboo hut, crafts, making

pulp for the paper industry, storage and transportation baskets, used in flooring and roofing, preparation of fabrics etc. Young rhizomes of Bamboo are widely used to preparing many kinds of food products. The products of Bamboos are gaining popularity among the people and bamboo industries are increasing rapidly in various continents from Asia to America (FAO, 2007). Due to its versatile importance and utilization, it is alleviating poverty, providing employment, controlling air and water pollution in many countries (Quintans, 1998). It is reported that Bamboo plants occupy about 13% of the total forest area of India. Out of 13% about 50% of bamboo species found in North Eastern states of India. It is estimated that the India has second largest bamboo reserves in the world after China (Panda, 2011). Therefore,



*Bambusa vulgaris*



*Dendrocalamus giganteus*



Edible Bamboo shoots

Bamboos are very useful plant both socially and economically (Ogunjinmi *et al.*, 2009; INBAR, 1999).

#### Culinary Uses:

Young Bamboo shoots are used as a good source of protein, fiber and calories. Due to low fat content and presence of essential amino acids, selenium, potassium as well as antioxidant together with minerals, Bamboos are good for healthy heart. Young shoots of some species of Bamboo are used as important vegetable, pickles and many products in preserved form in the daily meals in India (North East India), China, Japan, Taiwan and Thailand (McClure, 1996). Bamboo rhizomes (*Acidosasa iingchuanensis*, *Bambusa bambos* etc.) are suitable for human diet as they are rich source of food fiber, low fat, calories and rich in antioxidant (Bal *et al.*, 2012).

**Table 1: Nutritional contents of Bamboo**

Sl. No	Nutrient content in Bamboo	Nutrient content (mg) / 100 gm of Bamboo young shoot
1	Crude protein	10.1
2	Crude fiber	21.7
3	Ether extract	02.5
4	Ash	21.3
5	Phosphorus	86.0
6	Iron	13.4
7	Vitamin B1	00.1
8	Vitamin B2	2.54
9	Carotene	12.3

**Source:** (INBAR, 2009 and Ogunjinmi *et al.*, 2009)

#### Medicinal Importance:

Young rhizomes and leaves of many Bamboo species have been in use as medicine from the ancient era based on traditional knowledge. Such medicinal products are bamboo preserve with salt, bamboo vinegar, fresh bamboo extracts for controlling diabetes and balancing the cholesterol level (Singhal *et al.*, 2013). Bamboo rhizomes are used for reducing the hot phlegm that coats or obstructs the orifices of the heart, which may affect the brain functions. Generally bamboo is used as cooling, calming, and phlegm resolving product (Shukla *et al.*, 2012). Bamboos and its extracts are used for traditional treatment to relieve hypertension, sweating and paralysis. It has been revealed that bamboo extract has antioxidant property and anti-inflammatory effects (Hu *et al.*, 2000 and Choi *et al.*, 2005).

#### Environmental Importance:

Bamboo plants have wide environmental benefits. Major benefits obtained are as follows.

- Act as a carbon sinks

- Produces oxygen
- Control air pollution
- Prevent soil erosion
- Land rehabilitation
- Rapid supply of organic matter to soil
- Regulate water levels in watersheds
- Conserve biodiversity
- Control deforestation
- Beautify landscapes
- Clean / purify environment and provide healthy atmosphere for to human beings.

Bamboo clumps have extensive rhizome system, thick litter layer, dense plant canopy which makes bamboo forests able to control erosion and landslide, soil and water conservation, protection of riverbanks (Song *et al.*, 2011). Extensive root system of bamboo relevantly play major role in stabilizing soils on slopes and river banks (Kassahun, 2003; Pandey and Shyamasundar, 2008).

#### Ornamental Use:

Bamboo is widely used as an ornamental plant in landscaping. In all most all gardening style Bamboos are used as ornamental plant especially in Japanese garden. They are also used for various other purposes in gardening viz. as hedge (*Arundinaria appalachiana*; *Arundinaria Bambusa eutuldoides*, *Bambusa multiplex*); bonsai making (*Bambusa ventricosa*) and many others ways. Dry bamboo craft (*Dendrocalamus strictus*; *Calamus rotang*) are used in daily life and also providing employment opportunities for young youth (Reddy *et al.*, 2007).

#### Conclusion:

Bamboos are very popular plant in tropical and sub-tropical parts of the world. A wide diversity has been recorded in generic and species level. A large number of species are found in northern India, a natural habitat of bamboos. They are very useful for various purposes viz. economic, medicinal, environmental, social etc. and considered as a most versatile plant for the welfare to human beings.

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