International Journal of Research in Pharmaceutical and Biomedical Sciences | ISSN: 2229-3701

Review Article

Therapeutic Potentials of *Bambusa bambos* Druce

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ABSTRACT

From ancient times mankind is dependent on plant sources for the ailments of various disorders. *Bambusa bambos* is one of these medicinal plants, which is a large genus (about 37 species) of clumping bamboos. These species are usually giant ones, with numerous branches at a node and one or two much larger than the rest. They are found in tropical and subtropical areas of Asia, especially in the monsoon and wet Tropics. In growing Bamboo Above ground bio mass production and nutrient distribution require two days (0.12 m height) to maturity (28.5 m height), studied over five months. Literature review reveals that studies on food safety aspect of bamboo shoot are unsystematic and scanty hence need special attention. Present study highlights the therapeutic uses of *Bambusa bambos* along with the responsible chemical constituents.

Key Words: *Bambusa bambos*, Morphology, Therapeutic uses.

INTRODUCTION

Most of the drugs used in primitive medicine were obtained from plants and are the earliest and principal natural source of medicines. There is no doubt that plants are a reservoir of potentially useful chemical compounds which serve as drugs, are provided newer leads and clues for modern design by synthesis. The bamboos are woody tree-like grasses, have a long history as an exceptionally versatile and widely used resource. Over 75 genera and 1250 species occur in the world. Bamboo resources in their natural habitat have decreased considerably due to over exploitation, shifting cultivation practices, and extensive forest fires. Compared with the vast forests of bamboo found in South and Southeast Asia at the beginning of this century , there is acute scarcity now. Efforts are, therefore underway to research into cultural and agronomic techniques which will boost bamboo production so that raw material in sufficient quantity can be made available to farmers, rural house holds and large industries. In view of this an experimental trial of *Bambusa bambos* was conducted in Tamil Nadu, India. A thorough study has been carried out on the growth and productivity of *Bambusa bambos* growing over 1-6 years. The present study highlights a broad therapeutic uses of this plant along with responsible chemical constituents[1].

Morphology

Culms strong, cylindrical, erect, hollow, dark green- coloured, up to 30 m tall , 15-18 cm diameter, the walls very thick with a lumen; branching at all nodes, those from the lower nodes recurved and bent downward towards the ground with the upper branches arching and producing a fan like plume, the upper leafy branches bearing small spines. Nodes slightly swollen and few lower nodes produce short aerial roots. Nodes contain a single branch bud at the ridged nodal line. Leaves diffuse in complements, 15-30 cm long and 8-15 mm broad, are with about 10 leaves in each complement. Leaf blades are linear and variable in size, lanceolate, narrowed to an acuminate tip. Inflorescence an enormous panicle, branchlets spicate with loose clusters of about 5 pale spikelets; rachis variable, usually stiff, shining, smooth, striate, occasionally angular. Spikelets are lanceolate, acute, 1.25-2.5 cm long and 0.5 cm broad, sessile. Stamens are 6, filaments long, filiform, anthers free, basifixed. Ovary is the styles and arising from shortly above the summit variable in length and fusion, stigmas 3. Fruits are fusiform caryopsis, pale brown in colour and covered by three persistent glumes. Average length and width varies from 7.2-8 mm and 1.5 to 2 mm respectively. Rostrum is mucronate resulting from acute extended apex, erect or curved. Surface is smooth, navel at one side of the fruit base , orbiculate with a protuberance at the centre. Ventral suture extends from fruit base to the apex[2].

Chemical properties

Bamboo leaves contain the highest protein levels as compare to stem. Bamboo resin is the siliceous secretion found in the internodes of the stem of various species of bamboo. It occurs in fragment of masses and transparent bluish white colour. The sprouts are acride, bitter,

laxative and useful in inflammation ulcer and wounds. Leaves of *bambusa bambos* contain digestible crude protein mainly lysine and methionine. The root of *bambusa bambos* showed the presence of cynogenic glycosides and this is identical with taxiphylline. Six phenolic acids viz., Chlorogenic acid, Ferulic acid, Coumeric acid, Protocatechuic acid, Vanillic acid and Coffeic acid were identified in the aqueous extract of *Bambusa bambos* matured leaves. The phenolic acids might be responsible for allelopathic (Weedicidal) effects. Betaine is another important class of compound identified in the aerial parts of the *Bambusa bambos*. Seeds of this plant contain a number of vitamins and amino acids such as thiamine, riboflavin, arginine , histidine, lysine, tryptophan, phenylalanine, tyrosine, methionine, cysteine, threonine, leucine, isoleucine and valiene[3].

Ethnopharmacology

It is used as astringent, acrid, sweet, cooling, expectorant, constipating, cardio tonic, haemostatic, aphrodisiac, and diuretic. The sprouts are acrid, bitter, laxative and are useful in inflammations, ulcers and wounds. The infusion of leaves is used as an eye wash. Its extract is capable of controlling halitosis, with black pepper and common salt. Leaves are also used to check the diarrhea in cattle, as anathematic and febrifuge. Its leaves are also given to horse as a remedy for cough and cold. The leaf of this plant having emmenagogue property and the active principle behind this activity is Betaine. The leaves are also used as anthelmintic, astringent and as a febrifuge. The burnt roots are applied in the ringworm, bleeding gums and to painful joints. The bark of this plant has been reported to be used as a cure for eruption. The stem and leaves are also used as blood purifier. Roots are used to cure for eruption. Stem and leaves are used as blood purifier. The shoot deposited on culms mixed with lime or even with fine powdered coke is applied to cuts and wounds[3].

Therapeutic uses

Fresh juice of the leaves of *Bambusa bambos* was tested for uterine activity on isolated human as well as rat uterus and it was found to have a weak ecbolic action (an agent produces rapid labour) in a dose 1 to 10 mg/ml. Extract of its leaves show antitumor activity in rat. Extract of its leaves show antitumor activity in rat. Extract of its leaves show antitumor activity in rat. Hot water extract and alcoholic extract of the leaves of this plant was used as deodorant. An ethanolic extract of *Bambusa bambos* tender shoot caused a reduction in fertility of male rat. The dealcoholized extract of leaves has shown antibacterial activity against *Bacillus subtillis, Micrococcus pyogens, Staphylococcus aureus* and *Salmonella typhi* at a concentration of 0.1-0.35% (at pH 7 and pH 5.5). Hot water extract and alcoholic extract of leaves used as deodorant. The dealcoholised extract of leaves has shown antibacterial activity. Leaves of *Bambusa bambos* contain digestible crude amino acid, mainely methionine and lysine[3]. Literature review reveals that studieson food safety aspect of bamboo shoot are unsystematic and scanty, hence need special attention. Similarly indepth investigation on effect of processing (boiling, fermenting, canning etc.) on total nutrient content (macro and micro) of various bamboo shoot species growing in different agro-ecological regions needs to be carried out. It would help in converting the non-edible species into edible one, thus enhancing the business scope for rural people. Scientific validation of indigenous knowledge of tribal coupled with modern scientific inputs would provide guidelines for evolving a simple, efficient system for bamboo shoot utilization. Thus, several important knowledge gaps identified in this paper would give impetus to new academic and R&D activities, in turn generating innovative job profile in food industries as well as rural entrepreneurship[4].

CONCLUSION

The plant *Bambusa bambos* is one of the most important sources of medicine phytochemicals widely experimented by scientist. The initiation to such a huge number of investigation on this plant come from Ethnopharmacology where a number of uses of all the parts of this plant have been sited. Present study enlisted the pharmacological properties of the plant like *Bambusa bambos.* The investigated pharmacological uses may be due to the presence of the phytoconstituents. Furthermore in future detailed phytopharmacological studies are to be done on this highly propagation plant. The pharmacological studies will be exploited for the responsible mechanism and phytoconstituent.

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