Popular Article

Popular Kheti

Volume -2, Issue-3 (July-September), 2014

Available online at www.popularkheti.info
© 2014 popularkheti.info
ISSN: 2321-0001

Parkia roxburghii: A Multi-purpose Tree Species of North Eastern Himalaya

D. M. Firake*, P. D. Firake, G. T. Behere and N. S. Azad Thakur

Division of Crop Improvement, ICAR Research Complex for NEH region, Umroi raod, Umiam, Meghalaya-793103, India

***Email of corresponding author: dfirake@gmail.com**

Tree bean, *Parkia roxburghii* (Mimosaceae), is an underutilized nutritious leguminous plant found in North-Eastern India and South-East Asian countries. Ethno-botanically, this tree species is highly important. Right from flowers and tender pods to the mature seeds of this plant is edible and it is a good source of nutrients. It is a multipurpose tree species having variety of uses. Besides this, it could be an excellent crop in *Jhum* land for their rejuvenation.

Introduction

Tree bean, *Parkia roxburghii* (Mimosaceae), a lessar known nutritious leguminous plant is grown luxuriantly in North-Eastern India and South-East Asian countries. It is a large tree upto 25 meter in height and having spreading branches. (http://www.icfre.org/UserFiles/File/rfri/rpap4.htm). It is distributed in India, Bangladesh, Burma (Myanmar), Thailand and the Malesian region. Trees are generally found in lowland rain forest and often along streams. Flowering in tree bean take place during October to December and fruits are found during December to October. In states like Manipur, it is considered as the most costly vegetable. Both flowers and pods are eaten as vegetable. (http://www.icfre.org/UserFiles/File/rfri/rpap4.htm). Cultivation of this plant is comparatively easier and it does not compete for the available land with other crops. Furthermore, being a leguminous plant, it enriches exhausted land; therefore, it could be excellent crop in *Jhum* land for their rejuvenation (Firake *et al.*, 2013).

Vernacular names of tree bean in India

Tree beans are commonly known by variety of names in different languages across the country *viz.*, Supota, Kharial (Hindi); Manipur-urohi, Khorial (Assamese); Manipuri seem (Bengali); Zongto (Mizo); Yongchak (Manipuri); Aoelgap (Garo); Bire-phang (Kachari); Themuk-arang (Mikir); Unkamn-pinching (Naga); Shivalingada mara (Kannada) and Unkampinching (Marathi) (http://www.flowersofindia.net/catalog/slides/Tree%20Bean.html).

Different uses of tree bean

Ethno-botanically, this tree species is highly important (Seal, 2011). Right from flowers and tender pods to the mature seeds of this plant are edible and it is a good source of ascorbic acid (26.0mg/100g), fat (20.28%), proteins (32.82%), minerals (4.45%), Na (51.0), Mg (34.7) and

P (160 mg/100g), Ca (97.47), K (2400), Cu (2.3) and Zn (2.77 mg/100g), Fe (57.1 mg/100g) and Mn (35.0 mg/100g) at par with other legumes (Singh et al., 2009). Tree bean is a multipurpose tree species having variety of uses (Table 1).

Table 1. Different uses and activities of *Z. Armatum*

Uses/ Activities	**Against/For**	**Plant part used**	**References**
Medicinal	Diabetes	Bark	Pramila Devi, 2011
	Bleeding piles	Pods	Thingtam, http://findmeacure.com/2011/01/16/tree-bean/ http://www.icfre.org/UserFiles/File/rfri/rpap4.htm http://www.flowersofindia.net/catalog/slides/Tree%20Bean.html
	Diarrhaea	Bark extract	
	Dysentry	Bark extract	
	Scars	Bark and leaves	
	skin infections	Bark and leaves	
	Ulcer	Bark and leaves	
	Abdominal colic	Seeds	
	Plaster in Eczema	Bark paste	
	Stomach disorder	Seeds	Siswoyo et al., 1993
	Cholara	Seeds	
Insecticide	*Aphis craccivora*	Oil	Salam et al., 1995
	Podagrica spp. on okra	Seeds	Oparaeke et al., 2009
	Microtermes nigeriensis	Seeds	Matt et al., 1993 Morisawa et al., 2002, Chen et al., 2004 Neya et al., 2004
Piscicide	*Clarias gariepinus*	Pods	Abalaka and Ahuta, 2010
Anti-bacterial	*Escherichia coli, Vibrio cholerae, Staphylococcus aureus* and *Bacillus cereus*.	Leaves	Juhud et al., 2001
Alleopathy	Striga in Maize	Root exudates	Magani et al., 2009
Human food		Leaves, pods	Longvah and Deosthale, 1998
Tanning	dyeing nets	Bark	http://www.icfre.org/UserFiles/File/rfri/rpap4.htm
Washing head and face	Aesthetic	Pods pounded in water	
Firewood	Cooking	Timber	

Conclusion

Cultivation of this plant will not compete for the available land with other legumes and if properly exploited it would serve as a supplementary source of vegetable proteins. The maintenance is not required because being a legume it will also enrich soil through nitrogen fixation. Therefore, more attention and priority should be given on cultivation of tree-bean in larger area, especially in the area or regions where practice of *jhum* cultivation is higher.

References

Abalaka SE and Ahuta J. 2010. Toxicity of aqueous and eathanol extracts of Parkia biglobosa pods on Clarias gariepinus juveniles. *Journal of Animal and veterinary Advances*. 9(6):1068-1072.

Chen K, Ohmura W, Doi S and Aoyama M. 2004. Termite feeding deterrent from japaneese larch wood. *Bioresource Technology*, 95(2):129-134.

Firake DM, Venktesh A, Firake PD, Behere GT and Azad Thakur NA. 2013. *Parkia roxburghii*: an underutilized but multipurpose tree species for reclamation of jhum land. *Current Science*. 104(12):1598-1599

Longvah T and Deosthale YG. 1998. Nutrient composition and food potential of Parkia roxburghii, a less known tree legume from north east india. *Food Chemistry*. 62(4):477-481.

Magani IE, Ibrahim A and Avav T. 2009. The use of Parkia biglobosa based products in the control of *Striga hermonthica* in maize (*Zea mays*. L.). *Journal of Applied Biosciences* 18: 983 – 991

Matt FI, Umeh VC and Mutsaers HJW. 1993. Laboratory toxicity of the crude extracts of *Piper guineense* schum and thonn,*Azadirachta indica* A. Juss and *Parkia clappertoniana* (Jacq) to the termites *Macrotermes nigeriensis* (Sjostedt) (Isoptera: Termitidae). *International Journal of Tropical Insect Science*. 14 (2) 229-233

Morisawa J, Kim CS, Kashiwagi T, Tebayashi SI and Horrike M. 2002. Repellents in the Japanese cedar, Crytomeria japonica against the Pill bug, Armadillidium vulgare. *Bioscience, Biotechnology and Biochemistry*. 66(11): 2424-2428

Neya B, Hakkou M, Petrissan M and Gerardin P. 2004. On the durability of Burkea Africana heartwood evidence of biocidal and hydrophobic properties responsible for durability, *Annals of forestry science*. 61:277-282.

Oparaeke A M, Dike MC and Amatobi CI. 2005. Evaluation of Botanical Mixtures for Insect Pests Management on Cowpea Plants. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*. 106(1):41-48

Pramila Devi A. 2011. Plants Used by Meitei Community of Manipur for the Treatment of Diabetes. *Assam University Journal of Science & Technology: Biological and Environmental Sciences*. 7(1):63-69

Salam JS, khuman MS and Singh MP. 1995. The oil of Parkia roxburghii G. Don, a potential insecticide. *Current science*, 68(5): 502

Seal T. 2011. Nutritional Composition of Wild Edible Fruits in Meghalaya State of India and Their Ethno-botanical Importance. *Research Journal of Botany*. 6(2): 58-67

Singh SJ, Singh PK, Dutta BK and Sahoo UK. 2009. Chemical Composition and Nutritive Indices in *Parkia roxburghii* G. Don, A Leguminous Plant of India. *Indian Journal of Agricultural Biochemistry*. 22(2): 87-93.

Siswoyo Ekarelawan, Zuhud EAM. 1993. Experimental Breeding of Rare Medicinal Plant *Parkia roxburghii* G. Don. *Media KonseMsi*. 1(2): 89 – 94

Zuhud EAM, Rahayu WP, Hanny Wijaya C. and Sari PP. 2001. Antimicrobial Activity of Kedawung Extract (*Parkia Roxburghii* G. Don) on Food Borne Pathogens. *Journal Teknologi Dan Industri Pangan*. 12(1):1-5

Internet sources

http://www.icfre.org/UserFiles/File/rfri/rpap4.htm
http://www.flowersofindia.net/catalog/slides/Tree%20Bean.html
http://findmeacure.com/2011/01/16/tree-bean/