Review

Recovery of Katha in India- a review

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ABSTRACT

Khair (*Acacia catechu* Willd) is a deciduous tree that belongs to the family Fabaceae. It yields mainly two products Katha and cutch which have many medicinal benefits and industrial uses. A review was conducted on the recovery of Katha obtained from *A catechu*. The overall results revealed that the recovery percentage of Katha and cutch ranged from 1.90 to 9.35 and 5 to 17.26 per cent respectively. Most of the work has been done in Uttarakhand state where the mechanical method for extraction of Katha was mostly used. However more investigations on the recovery of Katha and cutch are needed to be conducted in future.

Keywords: Katha; *Acacia catechu*; cutch; recovery; extraction

INTRODUCTION

Acacia catechu Willd is a medium size deciduous tree belonging to the family Fabaceae. The tree has moderately straight and cylindrical stem which grows up to about 10-16 m in height and 0.5-1 m girth with a clear bole of 2-4 m. The tree coppices well up to moderate size and produces root suckers (Troup 1921). Khair is distributed throughout the drier regions of the sub-Himalayan tract up to an altitude of 1,200 m from Punjab to northeastern states, Madhya Pradesh, Gujarat, Maharashtra, Andhra Pradesh and Tamil Nadu (Rashid et al 2015). This species is scattered on natural plains as well on farm fields and private lands of Konkan region of Maharashtra state (Wanage et al 2013).

The tree yields two main commercial products viz Katha and cutch. The species is being used from ancient times for the production of Katha and cutch by the local people. These products are used in various local and industrial formulations. Katha is used in Paan (betel) and it produces red colour when mixed with lime. This acts as an astringent and is used for the relaxation of the throat and gums and also cures diarrhea and cough (Singh et al 1996). Total area under Khair is estimated to be about 5,800 sq km in the country with annual consumption of 63,000 tons of Khair heartwood for Katha making. It has been estimated that about 3,000 to 3,500 tons of Katha is produced annually by small scale and cottage industries in the country. However the annual demand of this species is increasing exponentially as numerous small cottage industries are established every year (Wanage et al 2013).

Katha plant has more medicinal and industrial uses and it is a scientifically more important plant. It appears that the gap between the demand and supply of Khair wood is increasing. In India, studies were conducted on Katha yield from Khair in the last 4-5 decades, but sufficient information is not available about the recovery of Katha. This paper reviews the work done on Katha recovery from Khair. The study will be helpful for the sustainable management of Khair plantation and Katha industry.

Recovery of Katha

Karnik et al (1965) obtained a maximum recovery (9.35%) while Jain (1980) and Tewari (1995) reported a minimum recovery which was 3 to 4 per cent. Most of the researchers used the mechanical method for the extraction of Katha while very few used

Table 1. Recovery of Katha and cutch reported by different workers

Worker	Location of study	Method of extraction	Katha recovery (%)	Cutch recovery (%)
Fernandez (1894)	Gujarat, India	Traditional	6.46	
Mathur (1961)	Rajasthan, India	Traditional	5.70	-
Karnik et al (1965)	Uttarakhand, India	Mechanical	9.35	-
Jain (1980)	Uttarakhand, India	FRI	3-4.5	6-8
		Mechanical	3-4	5-8
Dobhal and Beri (1981)	Uttarakhand, India	Mechanical	1.90-6.55	11.96-17.26
Mitra and Kapoor (1999)	Uttar Pradesh, India	-	3.00-4.50	6-8
Luna et al (2009)	Punjab, India	Mechanical	3.48-6.02	5.40-7.84
Anon (2020)	Uttar Pradesh, India	Mechanical	4-5	-
Tewari (1995)	Uttar Pradesh, India	FRI	3-4.5	6-8
		Mechanical	3-4	6-8

the traditional method for extraction purpose. More work was conducted in Uttarakhand state. Details of the recovery of Katha obtained from the Khair tree are presented in Table 1.

Recovery of Katha is attributed to various factors. Yield of Katha is mainly governed by weight of heartwood and locations (Jain 1980); locality, forest type, annual rainfall and girth of heartwood (Dobhal and Beri1981); chip thickness (Vasishth 1996, Vasishth et al 2010); oven dry weight of heartwood (Karnik et al 1965); locality factors (Hill 1952, Bosshard 1966); age factor (Wanage et al 2013); locality factors, site quality and general form of trees and density of other associated species (Kumar 1998) and disc position of the heartwood of Khair (Luna et al 2009).

The yield of Katha from heartwood varies considerably depending upon the climate, locality and age of the trees. The maximum yield of Katha is obtained from trees felled in autumn or winter. Trees that are gnarled or crooked are found to give a higher yield than straight stems (http://www.supusparegmi.com.np/2017/11/extraction-process-of-katha.html).

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