

HAND OPERATED TUBULAR BLAZER FOR CHIRONJI (*B.LANZAN*) GUM TAPPING



Network Project on Harvesting, Processing and
Value Addition of Natural Resins & Gums



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Introduction

India is a rich centre of biodiversity, encompassing more than 15,000 plant species of which about 112 (major: 31; others: 81) plants producing natural gum have been identified. Chironji is a gum producing tree found in India mostly in the states of Madhya Pradesh, Bihar, Orissa, Andhra Pradesh, Chhattisgarh, Jharkhand, Gujarat, Rajasthan and Maharashtra. It is known in different regions by different names as Charoli (Gujarat), Piyal (Assam, Jharkhand), Chavar, Pickle, Kadapa Badam (Bengali), Charu (Oriya), and Char (Telugu). Chironji is a medium-sized hardy plant (Fig. 1) that also grows well on barren, rocky, gravelly red soils, saline and sodic soils. It is a tree that has many medicinal properties. The seeds and gum obtained from this tree are the major commercial forest products. Its root, leaf, fruit, seed and gum are used in Ayurveda to treat many diseases. Generally, gum ducts are developed by making suitable incisions by forest dwellers on the trunk of the gum producing tree. This technique of gum tapping is commonly used for gum production in which large size blaze are made on tree. These traditional gum tapping methods in practice are cruel and harmful to the plants, which often leads to their death. To overcome this problem, a tubular blazer has been developed which reduces blaze size and increases gum production from chironji tree.



Fig. 1 : B. Lanzaan Tree

Tubular Blazer for chironji gum production

The method of gum production in practice is still traditional which requires a lot of time and labour. The industrial application of natural gum for food and medicinal purposes has expanded considerably in recent years in the world. Keeping these facts in view, a suitable hand operated blazer was developed at ICAR-National Institute of Secondary Agriculture, Namkum, Ranchi to increase gum production, reduce time and labour requirement, and minimize blaze size (Fig. 2). It is capable of producing natural gum throughout the year. The developed tubular blazer is suitable for gum production from Chironji, Baheda, Karaya, Moringa and Palas gum producing trees. It is a hand-operated tool with two main components, handle and working blade whose detailed descriptions are as follows:

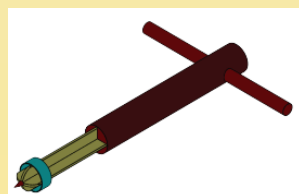


Fig. 2 : Tubular Blazer for chironji tapping

Handle

The handle of the developed tubular blazer (150 mm long with a diameter of 25 mm) is made from a piece of stainless steel cylindrical rods (Fig. 3). With this rod other two cylindrical pieces of rods (diameter 10 mm and length 40 mm) were joined horizontally

at one end of the handle, which facilitate withdrawal of the tool after making a blaze on the trunk of the tree by rotating the tool. The working blade was connected at the other end of the handle by welding.

Working blade

The front edge of the tool was sharpened by a square shaped base made of stainless steel sheets of 100 mm length, 25 mm width and 2 mm thickness to fix the working blade in the front which helped the tool to penetrate easily inside the tree by striking with the hammer while making blazes on the trunk (Fig. 4). Also, this base plate is welded with a circular blade constructed from a stainless steel hollow pipe with sharpened from end (radius 12.5 mm and height 10 mm) which helped in making a 25 mm diameter blaze in a circular shape on the tree trunk. The depth of blaze varied according to the thickness bark of the gum-producing tree.



Fig. 3 : Handle

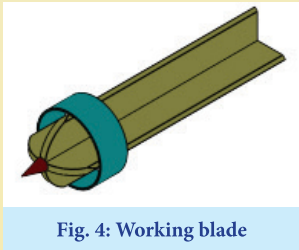


Fig. 4: Working blade

Blaze development with the blazer

- Trees with good health were selected for gum production (Fig.5). The blade portion of the Tubular blazer (Fig. 6) was placed on tree trunk at a suitable height (operator shoulder’s height~ 1.5 m from ground) and the tool was held with left hand. It was then hammered with right hand (Fig 7) from handle end using a hammer (1-1.5 kg in weight) till front sharp edge of the circular blade portion of tool cut the bark of tree trunk.



Fig. 5: Selection of Tree



Fig. 6: Tubular Blazer



Fig. 7: Making blaze on tree trunk



Fig. 8: Rotation of blazer with help of hammer



Fig. 9: Developed blaze on tree trunk

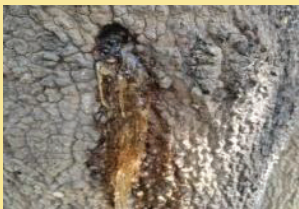


Fig. 10: Gum exudation from developed blaze

- After the desired depth of cut was achieved, the blazer was removed from the tree trunk by rotating the handle with the help of hammer. Due to rotation of the tool (Fig 8), the base part of cut mass still attached to the tree trunk gets sheared and helps in removing the cut mass while withdrawal of tool from the tree (Fig 9). Same blazing process was followed for subsequent blazing. Once the production of gum starts from developed blaze, it is collected at regular interval after gum dries up (Fig 10).

Specification of Tubular Blazer

Overall dimension, (length, width and Thickness), mm	235 x 130 x 25
Weight, Kg.	0.77
Price, Rs.	860
Time requirement for making blaze, Second	15-20
Blaze making capacity, Blaze/day	1400-1500*
Increase in gum productivity	2 to 20 times

*Requirement of 2 man per day for making blaze 1400-1500

Advantages of the Tubular Blazer

- The newly developed Tubular Blazer is a small size hand operated tool which is user friendly (for both male and female).
- With the use of this blazer with minimal injury to the bark of the tree, more amount of gum can be produced.
- Time required in making blaze is less in this method, thus reducing the cost of operation.
- The tool is simple in design and helps in obtaining pure gum free from impurities. The cost of The blazer is less which can be afforded by the gum pickers.

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