

SOCIOECONOMIC IMPROVEMENT IN THE LIFESTYLE OF TRIBAL BPLS IN NANDED CITY (MS), USING LAC INSECT INFESTED SAMANEA SAMAN AS MODEL

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ABSTRACT

Tribes across the world are known to collect various natural products from the forest since time immemorial. Tribal BPLs are mostly dependent on natural forest products like lac, honey, wax, gum etc. to earn their livelihood. With increasing deforestation it has become a matter of serious concern that lac insects are losing their host plants, which they inhabit. This has imposed the issue of survival of those tribes who depend on such natural products from forest and earn their livelihood. The point here to note is that these tribes are BPLs. *Samanea saman* (rain trees) is one of the trees commonly infested by lac insects. In Nanded city (Maharashtra State) good density of rain trees can be encountered. Survey carried out in 47 different locations provided a data of 355 rain trees. It was found that out of 355 rain trees 38 were infested by lac insects. Annual collection of lac from ten tree can generate about ₹ 32,600 in local market annually for 100 Kg of lac. This can create a substantial income if 10 such plants are adapted by one tribal BPL. All 355 rain trees in city Nanded alone can generate income for approximately for 35 tribal BPL. This will also ensure protection and care of all the rain trees as it has been recorded that some of the rain trees died and cut down due to low maintenance in the near past. The present study strongly recommends an innovative method of improvement of economic status of tribal BPLs.

Key words: *Samanea saman*, Lac insect, Bellow Poverty Line (BPL), *Kerria lacca*.

Introduction

There is a strong feeling that forest eco-system services are not a luxury but they are a necessity for local livelihood as well as for wellbeing of wider society. Need of the hour is to increase opportunity and decrease dependency on the forest. Instead of depending on the old and traditional methods of collection of forest litter to earn the livelihood, efforts can be taken to generate the opportunities by producing the economically important forest commodities such as honey, lac, etc.

Lac for an instance should gain more attention; as the corporate movements and federal efforts for improving the lac production in India are rare. Stray examples of such efforts and their at length reports are available (Lakra 2008- http://www.teriuniversity.ac.in/mct/pdf/assignment/vs_lakra.pdf). In these reports lac cultivation on four different tree species is well discussed along with its economic logistics. Efforts are not reported in Maharashtra although large population of various tribes inhabit the state and they depend on lac collection as a major source of earning.

Lac is a secretory product of lac insect, scientifically known as *Kerria lacca* (Kerr.), belong to family - Kerridae inder order Hemiptera in Class insecta of Phylum

Arthropoda. It is the only source of resin from animal origin. Chemically lac is a complex mixture of several resins, dyes and waxes. It possesses unique physical and chemical properties which make it invaluable gift of nature. The lac insects inhabit the plants and secret protective covering of lac around itself and live inside permanently. Lac insects inhabit variety of host plants. More than 400 lac hosts have been observed to carry lac insects throughout the world. In India there are about 113 varieties of plants identified as lac host plants (Sharma et al., 2006).

The host *Samanea saman* (Rain tree) is a common host of lac insect. It is believed to be native plant of northern South America (Colombia, the Caribbean slope and the Orinoco drainage of Venezuela), and in Central America as far as north El Salvador. Rain tree is important as a shade tree and planted on large numbers along the roadside and in parks in India. Rain tree is known as minor host plant of lac insect and known to be used for cultivation of lac in India and Thailand (George and Craig, 2006).

The present study will focus on the possibilities of lac cultivation on rain tree and their use in improvement of socioeconomic status of poverty.

Lac cultivation on rain tree is profitable and alleviate the lifestyle of Tribal BPLS.

Material and Methods

The present survey is carried out in 131 different location which includes colonies, Roads, parks, offices, etc. of Nanded City. Nanded city is located in southern part of India (19.15°N 77.30°E). Nanded city is divided in to two parts old Nanded (20.62 Km²) and new Nanded (31.14 Km²). The *Samanea saman* plants were identified on the morphological characters like size, leaves, flowers, fruits, bark and seeds with the help of scientific description by George and Craig (2006). The lac bearing and without lac infested plants were recorded by visual observation.

Results and Discussion

In the present survey 131 locations of Nanded city are observed and results are recorded. 355 *Samanea saman* plants are recorded in 47 locations of Nanded city out of which 38 plants bearing lac infestation and 317 plants do not carry any lac infestation. Three (3) plants on road of Bhagya Nagar were earlier know to carry infestation. These plants died and hence cut down due to lack proper care.

Samanea saman is a versatile plant and used extensively for variety of purposes throughout the world. The pods are edible and nutritious for livestock and make an excellent feed supplement with protein contents of about 13–18% (Flores, 2002). In Asia, rain tree is grown as a green fodder supplement for goats, sheep, and cattle. A 5-year-old tree can produce as much as 550 kg (1210 lb) of green forage. The pods are ground into a nutritious animal feed in several South American countries.

George and Craig (2006) reported about medicinal uses of *Samanea saman* in several folk remedies prepared from various parts of rain tree. The boiled bark is applied as a poultice to cure constipation. In the Philippines, a decoction of the inner bark and fresh leaves is used for diarrhea. In Venezuela, the roots are made into a hot bath

for stomach cancer. In the West Indies, the seeds are chewed for sore throat.

The timber is valued for carvings, furniture, paneling, veneers, and is also used for turnery, posts, framing, boatbuilding, plywood, boxes, and crates. It is generally considered a durable wood and resistant to attack by drywood termites (Longwood, 1971; Chudnoff, 1984). The seeds of *Samanea saman* are used in making seed necklaces, jewelry, and other crafts in Hawaii. In Thailand, rain tree is used as a foodsource for the lac insect (*Kerria lacca*), the source of shellac. Honey made from rain tree nectar is harvested in several places for local consumption but is not an item of commerce.

Lac is an important commercial commodity used in divers industries and put to a variety of uses. It is because lac possesses some unique physical and chemical properties. The lac, processed lac or its refined products are used in cosmetic industries, Jewellery industries, electrical industries, dye industries, textile industries, printing ink industries, painting industry, food and pharmaceutical industries. It is also used in making of decoration articles. Many ayurvedic formulation contain lac as an ingredient e.g. Lakshadi tail, lakshadi guggul, etc.

Lac cultivation for upliftment of poor BPL families: As plenty of *Samanea* plants are available in the Nanded city. These plants can be given on lease basis to poor peoples in ratio of 10 plant per family for lac cultivation under the "socioeconomic status improvement programme". This programme will generate employment as well as money for the poor families. These people be trained for lac cultivation, lac processing, production of various lac products like paint, varnish, Dyes, adhesives, insulation material, Food coating materials, ornaments and bangles, cosmetics, medicines from lac and lac hosts, etc., so that they can earn through this programme. The tentative logistics is given in Table 1.

Table 1: Expenditure against lac culture for ten plants*

| Sr. No. | Initial investment | Amount |
|---------|---|----------------|
| 1 | Brood lac Approximately 2.5 Kg /per tree (Panya et al., 2016) Six time yield is expected from initial inoculation of unit amount of brood lac. | |
| 2 | Fertilizers (as per the requirement) and Insecticides and fungicides 0.5lt (http://www.teriuniversity.ac.in/mct/pdf/assignment/vs_lakra.pdf) | 400X10=4000 |
| 3 | Accessories Scraping knife Axe Nylon Rope Nylon Net | 400 1000 |
| 4 | Training ** | |
| 5 | Total | 2000** 7400 |

* The expenditure for lac culture except Nylon net, nylon rope, fertilizers and pesticides is one time investment.

**Fees for Training programme is based on the fees incurred by Indian Institute of Natural Resins and Gum, Namkum Ranchi for "Modern method of lac culture (4 months)". If the project is funded by the government organization the about mentioned fees can be exempted.

Annual income of lac culture from the ten plants.

| Sr. No. | Income | Amount (₹) |
|---------|--|---|
| 1 | Production of total amount of lac (Panya <i>et al.</i> , 2016) Six time yield is expected from initial inoculation of unit amount of brood lac. | 100Kg ₹ 400 / Kg |
| 2 | Approximate Market rate of lac | 100X400 = ₹ 40,000/- |
| 3 | Total income | 40000-7400 = ₹ 32,600 |
| 4 | Net profit (B-A) | The calculated income is only for the first year which would increase approximately by ₹ 6000 in the subsequent year as initial investment (component A) would not be required. |

* As per the online market rate varies from place to place and season to season. According to Indiamart (<https://dir.indiamart.com/impacat/seedlac.html> accessed on dated 11-01-2017) the seedlac price is ranging between ₹ 125 to 750 / Kg. Report entitled "Great depression of lac" estimates the rate of seedlac to be ₹ 400 per Kg. (<http://www.downtoearth.org.in/coverage/great-depression-of-lac--2250>)

The recent estimate provided by TRIFED suggest that the current lac price in Madhya Pradesh is between 50 to 500 ₹ per Kg. ([http://www.trifed.in/trifed/\(S\(1kb4un5ihbvjbvbw3mz3aq1\)\)/Commodity_Price_Report.aspx](http://www.trifed.in/trifed/(S(1kb4un5ihbvjbvbw3mz3aq1))/Commodity_Price_Report.aspx))

It is expected that farmers will sale seedlac in open market if appropriate training is available .

Lac cultivation is mainly carried out in few Indian states like Jharkhand, Chhattisgarh, Bengal, Orissa, Madhya Pradesh, Maharashtra, Gujarat, Uttar Pradesh, Andhra Pradesh and Assam [2]. According to Indian Institute of natural gums and resin total annual lac production in year 2013-14 was 21,008 tons (<http://ilri.ernet.in/~iinrg/Lac%20Statistics.pdf>).

The total export of lac and its value added products were 8153.10 tons during the year 2013-14. Their market value was estimated approximately about 568.53 crores (<http://ilri.ernet.in/~iinrg/Lac%20Statistics.pdf>).

Exclusive properties of lac made it an excellent raw material for several industries. It is used extensively around the world for the production of cosmetics, Allopathic and Ayurvedic medicines, Electric industry as insulator and insulating varnishes, in Paint, dye and textile industries, Food, confectionaries and beverage industries, ornamental industry. (Siddique, 2004).

Conclusion

The problems like unemployment, socioeconomic problems, fodder, draught, etc. can also be effectively tackled with lac cultivation and maintenance of rain trees. Keeping in view about multiple ecological and economic

benefits of lac and *Samanea saman* there is a need for plantation of and maintenance of *Samanea saman* and promote / popularise lac cultivation on *Samanea saman*. The present study strongly recommends an innovative method of improvement of economic status of poor tribal.

मॉडल के रूप में लाख कीट से ग्रसित सेमेनीया सेमन का उपयोग करके नान्देड़ शहर (महाराष्ट्र) में जनजातीय बी.पी.एल की जीवन शैली में सामाजिक - आर्थिक सुधार

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सारांश

विश्वभर में जनजातीय लोग पुरातन काल से वन से विभिन्न प्राकृतिक उत्पादों का संग्रहण करने के लिए जाने जाते हैं। जनजातीय बी पी एल अपनी आजीविका कमाने के लिए लाख, शहद, मोम, गोंद आदि जैसे प्राकृतिक वन उत्पादों पर अधिकतर निर्भर रहते हैं। बढ़ते निर्वाणीकरण के साथ यह गंभीर चिन्ता का विषय हो गया है कि लाख कीट अपने परपोषी पादपों को खाते जा रहे हैं, जिन पर ये निवास करते हैं। इसने उन जनजातियों की उत्तरजीविता पर प्रश्न चिह्न खड़ा कर दिया है, जो वन से इस प्रकार के प्राकृतिक उत्पादों पर निर्भर हैं और अपनी आजीविका कमाते हैं। यहाँ नोट करने वाला बिन्दु यह है कि ये जनजातियाँ बी.पी.एल हैं। सेमेनीया सेमन (वर्षा वृक्ष) वृक्षों में से एक है, जो आम तौर पर लाख कीटों द्वारा ग्रसित होता है। नान्देड़ शहर (महाराष्ट्र) में वर्षा वृक्षों का अच्छा घनत्व देखा जा सकता है। 47 विभिन्न स्थानों में किए गए सर्वेक्षण ने 355 वर्षा वृक्षों के आँकड़े उपलब्ध कराए। यह पाया गया कि 355 वर्षा वृक्षों में से 38 वृक्ष लाख कीटों से ग्रसित थे। प्रत्येक दस वृक्षों से लाख का सालाना संग्रहण 100 कि.ग्रा लाख के लिए सालाना स्थानीय बाजार में करीब ₹ 32,600/- की आय दे सकते हैं। यह पर्याप्त आय का सृजन कर सकता है, यदि इस प्रकार के 10 पादपों को एक जनजाति बी पी एल द्वारा अपना लिया जाए। अकेले नान्देड़ शहर में सभी 355 वर्षा वृक्ष 35 जनजातीय बी.पी.एल. के लिए आय सृजन कर सकते हैं। यह सभी वर्षा वृक्षों की सुरक्षा और देखभाल को भी सुरक्षित करेगा क्योंकि यह अभिलिखित किया गया है कि हाल के सालों में निम्न अनुरक्षण के कारण कुछ वर्षा वृक्षों को काट दिया गया और कुछ मर गए। वर्तमान अध्ययन जनजातीय बी पी एल के आर्थिक स्तर के सुधार की एक नवीन विधि की संस्तुति करता है।

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