Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

J P P Journal of Pharmacognosy and Phytochemistry

E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2018; SP1: 2159-2162

Ranjeet Kumar
Department of Basic Sciences & Humanities, Faculty of Forestry, BAU, Ranchi, Jharkhand, India

Jai Kumar
Department of Forest Products & Utilization, Faculty of Forestry, BAU, Ranchi, Jharkhand, India

MH Siddiqui
Department of Basic Sciences & Humanities, Faculty of Forestry, BAU, Ranchi, Jharkhand, India

Correspondence
Ranjeet Kumar
Department of Basic Sciences & Humanities, Faculty of Forestry, BAU, Ranchi, Jharkhand, India

Studies of marketing and price spread of Mahua (*Madhuca latifolia*) produce in Jharkhand

Ranjeet Kumar, Jai Kumar and MH Siddiqui

Abstract
Mahua has a special status among NTFPs as it is linked to the tribal livelihood, as it provides an important source of seasonal income. Present experiment was conducted on marketing and price spread of Mahua in three blocks of Ranchi district, Jharkhand. Data collection is done through market surveys, field surveys, and household surveys. Mahua oil fetches maximum price followed by Mahua liquor, then Mahua flower and the least price for seed in the studied area. The market price of Mahua flowers varied from Rs. 18.00 to 21.00 per kg. Market price of seeds was varied from Rs. 12.00 to 14.00 per kg, while the price of oil was varied from Rs. 60.00 to 70.00 per kg. Mahua produces were sold on every Saturday, in Ormanjhi market on every Tuesday and Friday, whereas in Mandar market, it is on every Sunday. Among the Mahua produces, only flowers and seeds were sold in the market whereas other produces are not sold in the market. The seeds are sold in the market only for 2-3 month in a year. The average quantities of marketing of Mahua flowers were varied from 25 to 31 quintal. Mahua flowers were sold by the local collectors in three ways, *i.e.* directly sale to weekly market or sale to village level wholesaler or to the middle man/ village trader. The income generation from Mahua flowers was more than Mahua seeds. The total income generated in the study area was Rs. 18252.00 from Mahua flowers and Rs. 3445.00 from Mahua seeds.

Keywords: Mahua, *Madhuca latifolia,* NTFPs, marketing

Introduction
Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people across the world. In India alone it is estimated that over 50 million people are dependent on NTFPs for their subsistence and cash income (Shaanker *et al.*, 2004) [9]. Status of NTFPs in the livelihood strategies of forest households is highlighted by the very favourable income returns to the time spent in collection and stability of income from NTFPs (Yadama *et al.*, 1997) [12]. In India, more than 41 million tribals and forest dwellers derive their earnings from these products after consuming about 60% of collected NTFPs for personal use (Prasad, 1985) [8]. About 35% of the income of a tribal household in India comes from the collection of unprocessed NTFPs (Tewari & Campbell, 1995) [11].

Forests and forest resources, primarily NTFPs, play an important role in the viability and survival of forest dwellers in India because of the importance of forests in their social, cultural and economic survival. However, local communities do not get the full incomes they should from NTFP. They often get only collection charges even for products that have a very high market value. There are also products for which appropriate prices have not been set in the market. Sometimes marketing channels do not even exist. The market price for the NTFP or the profits from products goes to middleman contractors, traders, industry etc. Due to lack of proper structured marketing system there has no direct link between producers (collectors) and consumers and it has been seen that large part of the revenue goes to the hand of urban people and very small quantities goes to the hand of primary collectors or poorest section of the people residing in the forest.

Madhuca longifolia, commonly known as Mahua, is a tropical tree found largely in the central and north Indian plains and forests. It is a fast growing tree that grows to approximately 20 meters in height, possesses evergreen or semi-evergreen foliage. Mahua provides livelihood security to poor households who collect it both for self consumption and for sale the income is used to purchase daily household items. However, in most tribal areas, Mahua gatherers rarely get the true value of produce, which they usually barter for daily grocery items (FGLG, 2008) [3]. Ranchi is the biggest trading centre for Mahua in India and the price here influences its price in all over India. In Ranchi Mahua is used for preparation of wines. This season, around 200 - 250 trucks of Mahua have been transported to Ranchi (Panda *et al.*, 2010) [7]. In Jharkhand Mahua provides very useful food components as well as a source of income to the

villagers, thus helping in livelihood, which is paid less attention earlier in a systematic way. Therefore, present study was undertaken to study the marketing and price spread of Mahua in and around Ranchi districts of Jharkhand.

Materials and Methods

The present experiment was conducted in nine villages (Gashwey, Surid, Salhan, Kulhi, Kucchu, Gurhu, Naro, Kanijari, Mahuajari) of Ranchi district, Jharkhand. These villages are situated near by the forest and livelihood of villagers partially depends upon the collection of NTFP produces from the forest and by sale of Mahua produce in market. The study area was surveyed through household survey with the help of questionnaire using simple random sampling technique with 15% sampling intensity, taking the household as sampling unit. Data collection is done through household surveys, field surveys and market surveys. For these purpose three markets and near villages and forest area were taken for collection of data on various aspects of Mahua produce. Household head was interviewed for data collection and was taken as unit of measurement in this study since most of the time income surveys use the household as the unit of measure. The sampled households were also asked to give estimates of produce collected, amount sold and amount consumed at household level. Market survey, covering local market over a period of 6 months, to collect data about local and seasonal variations in product prices and supply and also to provide price data has been done to generate data of annual income by the sale of mahua produces. Parameters studied were price spread of Mahua products, market size of Mahua flower, seed, oil, & value added products in different markets around Ranchi and livelihood support from Mahua flowers and seeds in the study villages.

Results and Discussion

Data regarding marketing and price spread of Mahua produce in selected area is given below.

Price spread of Mahua products in different markets of Ranchi

The Price spread of Mahua products in different markets of Ranchi are presented in Table 1. Perusal of data has indicated that Mahua oil fetches maximum price followed by Mahua liquor, then Mahua flower and the least price for seed. Among the market, the prices of Mahua produces were also variable from market to market. The market price of Mahua flowers was maximum in Ormanjhi (Rs. 21.00 per kg) followed by Mandar (Rs. 20.00 per kg) and minimum in Urghuttu (Rs. 18.00 per kg). Similarly, the market price of seeds was maximum in Mandar (Rs. 14.00 per kg) followed by Urghuttu (Rs. 13.00 per kg) and minimum in Ormanjhi market (Rs. 12.00 per kg). The price of oil was maximum in Ormanjhi market (Rs. 70.00 per kg) followed by Urghuttu (Rs. 65.00 per kg) and minimum in Mandar market (Rs. 60.00 per kg). The price of liquor prepared from Mahua has maximum in Ormanjhi (Rs. 30.00 per bottle) followed by Urghuttu and Mandar market (Rs. 25.00 per bottle).

Table 1: Price spread of Mahua products in different markets of Ranchi

Sl. No.	Market	Mahua produce (Price in Rs./kg or bottle)			
		Flower (Price in Rs./kg)	Seed (Price in Rs./kg)	Oil (Price in Rs./kg)	Liquor (Price in Rs./bottle)
1	Urghuttu	18	13	65	25
2	Ormanjhi	21	12	70	30
3	Mandar	20	14	60	25

(Price is based on highest frequency level of a product in the market)

Marketing of Mahua Produce

The Market size of Mahua flower, seed, oil & value added products in different markets around Ranchi are presented in the Table 2. Perusal of data indicated that in Urghuttu market, the Mahua produces were sold on every Saturday, in Ormanjhi market on every Tuesday and Friday, whereas in Mandar market, it is on every Sunday. Among the Mahua produces, only flowers and seeds were sold in the market whereas other produces are not sold in the market. The seeds are sold in the market only for 2-3 month in a year. In case of value-added Mahua produces, only liquor was prepared from the Mahua flower.

Table 2: Market size of Mahua flower, seed, oil, & value added products in different markets around Ranchi

Sl. No.	Produce	Urghuttu on every Saturday	Ormanjhi on every Tuesday & Friday	Mandar on every Sunday
1	Flower (Qtl.)	31	25	31
2	Seed (kg.)	45	22	40
3	Oil (kg.)	Nil	Nil	Nil
4	Liquor (lit.)	72	45	54

The average quantities of marketing of Mahua flowers are maximum in Urghuttu and Mandar market, *i.e.* 31 quintal, whereas the marketing of minimum quantity of Mahua flowers are in Ormanjhi market (25 quintal). Similarly, the average quantity of marketing of Mahua seeds was maximum in Urghuttu market, *i.e.* 31 kg, followed by Mandar market (40 kg), whereas the marketing of minimum quantity of Mahua seeds was in Ormanjhi market (22 kg). The average quantity of marketing of Mahua liquor was maximum in Urghuttu market, *i.e.* 72 liter, followed by Mandar market (54 litre), whereas the marketing of minimum quantity of Mahua liquor was in Ormanjhi market (45 litre).

Marketing channel for sale of Mahua flower, seed/fruit etc

Mahua flowers were sold by the local collectors in three ways, *i.e.* directly sale to weekly market or sale to village level wholesaler or to the middle man / village trader. The consumer basically liquor making industries get Mahua flower directly from village level wholesaler or by village weekly market. The interesting observation was that the collectors, who sold flower, again become consumer and purchase Mahua flower from retailer/ wholesaler/ middle men on high price. Similar, channel was also followed for Mahua seed/fruit. In this case the consumers are soap making industries that get Mahua seed/fruit directly from village weekly market or from wholesaler. Similar to present study

Edwards (1996) [2] explains a marketing chain consisting of five levels between Nepali sources and final raw material markets in India. First, most harvesters trade NTFPs through a village trader. The relationship between these traders and their harvesters is traditionally based on mutual trust and a "serious life-long commitment to each other and their families". As a result, negotiations are cordial and easily concluded. Traders typically advance payments to the next intermediary as a way to secure business. In this way, most village traders "mortgage" their trade to certain road head traders, the main centres of market activity between porters and road transport. Each road head keeps close business links with up to fifteen village traders. These individuals are valuable to harvesters and village traders for providing credit, labour, storage, and market information, and absorbing risk.

Similar to present study a report of Chhattisgarh State on NTFPs showed that in Surguja district of Chhattisgarh when there were no haats, and the poor gatherers requires money, sold their produces and get immediate payment. Small trader sell collected produces to big traders who are settled in the district head quarter. Shanker and Muraleedharan (1996) [10] also reported that in Kerala in spite of Kerala state federation of SC & ST development Co–operative societies, 60-70 per-cents of the NTFPs were marketed by the private traders with higher price. Chopra (1994) [1] also reported that no structured marketing channel present in North Bengal region and due to lack of proper marketing there was a huge gap between the collectors and the middleman and also to ultimate purchaser in terms of revenue and it has been seen that larger part of the revenue goes to the hands of urban people and remaining small quantity is left for the poorer section of the people residing in the forest and forest adjacent villages. As such these bottom line people are exploited due to lack of their ignorance, literacy and proper market information.

Livelihood support from Mahua flowers and seeds in the study villages

A comparative study on amount generated by villagers of studied area in form of livelihood support indicates that quantity of Mahua flowers & seeds collected and income generated varied from village to village and from market to market as per the availability of Mahua flowers and seeds and also on market rate. The income generation from Mahua flowers was more than Mahua seeds. The total income generated in the study area was Rs. 18252.00 from Mahua flowers and Rs. 3445.00 from Mahua seeds. Among the market, the maximum income generated from Mahua flowers in the Urghuttu was Rs. 7128.00, followed by Mandar (Rs. 5760.00) and minimum income generate by the Ormanjhi market is Rs. 5364.00. Similarly, among the market, maximum income generated from Mahua seeds in Mandar is Rs. 1196.00 followed by Ormanjhi (Rs. 1183.00) and minimum income is generated in Urghuttu market is Rs. 1066.00.

Among villages in Urghuttu market areas maximum income generated from Mahua flower by Geswe village (Rs. 2718.00) followed by Salhan (Rs. 2286.00) and minimum income generate by the village Surid (Rs. 2124.00). In Ormanjhi market areas the maximum income generated from Mahua flower by Kuchu village was Rs. 1944.00 followed by Kulhi (Rs. 1890.00) and minimum income by Gurhu village (Rs. 1530.00). In Mandar market areas maximum income generated from Mahua flower by Mahuajari village was Rs. 2070.00 followed by Naro (Rs. 1980.00) and minimum by village Kanijari (Rs. 1710.00). In case of Mahua seed similar trend is followed, i.e. in Urghuttu market areas the maximum income by Geswe village (Rs. 416.00) followed by Salhan (Rs. 338.00) and minimum by village Surid (Rs. 312.00). In Ormanjhi market, the maximum income generated by Mahua seeds is by the Kuchu village (Rs. 455.00) followed by Gurhu (Rs. 377.00) and minimum by the village Kulhi (Rs. 351.00). In Mandar market areas maximum income was generated by Naro village (Rs. 455.00) follows by Kanijari (Rs. 416.00) and minimum by the village Mahuajari (Rs. 325.00).

Table 3: Comparison of livelihood support from Mahua flower and Mahua seeds in the study villages.

Market	Village	Income from Mahua flowers (Rs.)	Income from Mahua seeds (Rs.)
Urghuttu	Surid	2124	312
	Geswe	2718	416
	Salhan	2286	338
	Total	7128	1066
Ormanjhi	Kuchu	1944	455
	Kulhi	1890	351
	Gurhu	1530	377
	Total	5364	1183
Mandar	Naro	1980	455
	Kanijari	1710	416
	Mahuajari	2070	325
	Total	5760	1196

Various studies reveal that it is the poorest households with agricultural lands, livestock, adult males that are predominant collectors of forest products (Malhotra *et al*., 1991; Hegde and Daniel, 1992) [6, 4]. Kulkarni *et al.,* (2013) [5] opined that Mahua grow even in draught prone areas and are found abundantly over several parts of India. If the seeds fallen are collected, and oil is extracted at village level expellers, few million tons of oil will be available for lighting lamps in rural area. Growing Mahua trees would also help in protecting the environment and benefit the farmers as well. It is the best substitute for kerosene. Since these are spread over a large area, collection of seeds for Biodiesel manufacture is not viable. A compact plantation can support a Biodiesel plant. The oil has not yet found any significant commercial application. But due to increase in awareness and growth in research in this area the Mahua can be developed as the alternative source of fuel by replacing diesel. Panda *et al.,* (2010) [7] opined that 75% of the tribal households in our country are engaged in Mahua flower collection meaning a population of around 7.5 million is into this livelihood activity. Various studies indicate that a household gets between Rs 2500-5000 in a normal Mahua year. An estimate says that 28600 person years of employment are generated in Mahua flower collection every year (FGLG, 2008) [3]. But the

income for the primary collectors/processors in this transaction is very low. This is often attributed to an unorganized market and little access of the primary collectors to the market.

Conclusion

Collection of various produce of Mahua has a significant impact on the livelihood status of tribal people and forest dwellers in Jharkhand. From the data, it may be inferred that Mahua oil fetches maximum price followed by Mahua liquor, then Mahua flower and the least price for seed in the studied area. The market price of Mahua flowers varied from Rs. 18.00 to 21.00 per kg. Market price of seeds was varied from Rs. 12.00 to 14.00 per kg, while the price of oil was varied from Rs. 60.00 to 70.00 per kg. Mahua produces were sold on every Saturday, in Ormanjhi market on every Tuesday and Friday, whereas in Mandar market, it is on every Sunday. Among the Mahua produces, only flowers and seeds were sold in the market whereas other produces are not sold in the market. The seeds are sold in the market only for 2-3 month in a year. The average quantities of marketing of Mahua flowers were varied from 25 to 31 quintal.

Mainly three type of value added Mahua produce are found in the study area which is Mahua liquor, Mahua oil and Mahua cake. In case of value-added Mahua produces, only liquor sold in market. The marketing of value added produce (liquor) is maximum in Urghuttu market area whereas, price for liquor maximum in Ormanjhi. The Marketing channel for sale of Mahua flower and seed/fruit for local collectors are three way i.e. directly sale to weekly market, or sale to village level wholesaler or to the middle man/ village trader. The consumer basically liquor making industries get Mahua flower directly from village level wholesaler or by village weekly market and similarly, industries like soap maker etc. are get Mahua seed/fruit directly from village weekly market or from wholesaler The interesting observation is that collectors, who sell flower, again become consumer and purchase Mahua flower from retailer/ wholesaler/ middle men on high price.

References

1. Chopra K. Valuation and pricing of non-timber forest products: A study of Raipur district of M.P., Institute of Economic growth, Delhi, 1994.
2. Edward DM. Non-timber Forest Products from Nepal: Aspects of the Trade in Medicinal and Aromatic Plants. Forest Research and survey center, Monograph 1/96. Ministry of Forests and soil Conservation, Kathmandu, Nepal, 1996.
3. FGLG. NTFP Enterprises and Forest Governence: Mahua, FGLG India, Centre for People, 2008.
4. Hegde NG, Daniel JN. Promotion of non-wood forest produce through social forestry. Proceedings of a National Workshop held. BAIF Development Research Foundation, Pune, India, 1992.
5. Kulkarni PS, Dr. SG, Dr. RMR. Mahua (*Madhuca indica*) as a source of biodiesel in India. Internl. J Sci. & Eng. Res. 2013; 4(7):2319-2329.
6. Malhotra KC, Deb D, Dutta M, Vasulu TS, Yadav G, Adhikari M. Role of Non Timber Forest Produce in Village Economy: A Household Survey in Jamboni Range. Mimeographed, Indian Institute of Bio social Research and Development, Calcutta, 1991.
7. Panda BB, Mishra PK, Thakur R. In: Report of the study on Mahua sub Sector. The Livelihood School, Bhopal, 2010.
8. Prasad BN. Regional Non Wood Forest Product Industries. Forest Industries Development Group. Asia Pacific Region, FAO, Kualalampur, 1985.
9. Shaanker RU, Rist L, Milner-Gulland EJ, Ghazoul J. Managing mistletoes: The value of local practices for a non-timber forest resource. Forest Ecology and Management. 2004; 255(5-6):1684-1691.
10. Shanker A, Muraleedharan PK. Marketing of non-timber forest products in Kerala-An Overview. In Management of Minor Forest Produce for Sustainability (Ed.Shiva and Mathur). Oxford & IBH, New Delhi, 1996, 70-83.
11. Tewari DD, Campbell JY. Developing and sustaining non timber forest products: some policy issues and concerns with special reference to India. Journal of Sustainable Forestry. 1995; 3:53-79.
12. Yadama GN, Pragada BR, Pragada RR. Forest Dependent Survival Strategies of Tribal Women: Implications for Joint Forest Management in Andhra Pradesh, India. FAO Publication, Bangkok, 1997.