

NTFP

Enterprise and Forest Governance

Andhra Pradesh, Madhya Pradesh and Orissa

Sal Seed

Sal (*Shorea Robusta*) is a major means of survival for a large number of forest dwellers in the Central Indian states of **Orissa, Chattisgarh and Madhya Pradesh**. These three states include the largest sal belt of the country with sal forest area covering about 45% of their total forest area. Orissa has the largest sal forest area that covers an area of 38,300 km², followed by Madhya Pradesh with 27,800 km² and Chattisgarh with 24,245 km². Across these three states about 20-30 million forest dwellers, mostly tribals depend on sal seeds, leaves and resins for their livelihood.

Apart from being a dominant timber species, sal seed is an important non-timber forest product (NTFP) in these states because of the sheer timing of its **harvest**. **In the months of May and June**, when there is virtually no other source of income, primary collectors are engaged for **about six weeks in sal seed collection**. These six weeks provides them a **crucial bridge income between the end of Kendu (Tendu) leaf season and the commencement of the agricultural season**.

Sal seed, processed into fat, is a primary ingredient in the **food and cosmetic sector**, such as oil, soap, cocoa-butter equivalent in chocolate making, etc. Besides, sal fat is also used in the confectionery industries, for tanning and for production of **Vanaspati ghee**. The de-oiled cake is used in proportions up to 20% in concentrates for cattle feed.



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Strengths

- **Widely available**; sal seed collection is a means of livelihood and there is continued dependence on sal seeds

Weaknesses

- **Lack of technology** for local level processing, and unsustainable harvesting methods.

Opportunities

- Wider **opportunities in confectionery and cosmetic industries**; international terms of trade reserving space for sal oil in chocolate making

Threats

- **Legal hurdles** for sal fat use in domestic food processing industries.

Issues



► **Collection:** The widely used process for decortication is by spreading the sal fruit on dry hard ground and setting fire to it. Although an easy means of **de-winging the seeds**, this is a risky process as **sometimes fire affects the seed, and the oil content is reduced**. Burnt seeds are often rejected by the collection centres, as are seeds that are mixed with sand or stones. To avoid the risk of burning decortication may be done by beating the seeds with a wooden stick, if the quantity is small, or by mechanical means. In the latter case, **collectors require training and infrastructure which may be provided either by the trading agencies or concerned government and non-government agencies**.

► **Storage and Post Harvest Treatment:** Storage is a crucial issue in the process of sal kernel collection and shipment. The **quality of sal fat depends on how the kernels have been stored**. Since the monsoon follows the sal seed collection season, there is a risk that **a high moisture content in the kernel increases the free fatty acid (FFA) level, making it unfit for use in the food sector**. Besides, the primary collectors invariably store sal kernels in their houses using gunny bags, which are more often than not used to carry pesticides. Pesticide residue in sal fat is one of the reasons for the drop in exports to Europe and Japan where there are stringent pesticide monitoring standards.

► **Processing and quality control:** Timely collection plays an important role in enhancing oil quality. **The quality of oil increases if the kernel has minimum moisture content. In a relatively dry season, the seed is 60-80% dry at the time of fall.** Minimum processing and storage in a dry place will then enable the kernel to achieve the desired dryness. Of late, it is being suggested that in order to collect a dry kernel, the seed should not be burnt as this affects the quality of the kernel and enhances the free fatty acid (FFA) content, making it highly uncompetitive in the export market. Besides, **another area of concern for sal seed processing is the time taken between collection and shipment to factories for crushing: oil quality is high if the gap between collection and crushing is kept to a minimum. The ideal gap is up to a maximum of 72 hours, to maintain a low FFA level. But normally the process of procurement and shipment to traders is so lengthy that the gap can be more than 4 or 5 months.**

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- Price:** Due to the cumbersome collection process, one person can collect around 8-10 kg of sal seeds in an 8 hour working day. This brings an income of about Rs. 50 even on the basis of the declared price: this is nowhere near a survival wage for the collector's family, much less than the minimum wage.
- Trading and terms of trade:** Sal oil is mostly imported by European countries for use as a substitute for cocoa butter, known as cocoa butter equivalent (CBE). The rise and fall in prices, besides the quality and quantity of sal oil, is linked to the production of cocoa butter, availability of substitutes and use of cocoa butter in chocolate and confectionery industries.
- Export quality standards:** Exporters of sal oil in India face the problem of maintaining the strict quality specifications for chocolate manufacture insisted on by European countries. The export quality parameters are; low FFA and hydroglycerides limits, and no pesticide residue. The main reasons for their inability to meet the said quality parameters in sal fat are the huge time gap between kernel collection and oil production, and pesticides contamination during storage of the kernel.
- Restrictive food laws:** The Government of India does not have a quality monitoring system to assess whether sal fat meets the required pesticide norms implemented by European and Japanese governments. In India, domestic food laws remain a bottleneck to furthering the diversification of different uses of sal seed. For example, the Prevention of Food Adulteration (PFA) Rules, 1954 prohibit use of sal fat in a number of prospective products like chocolates and ice creams.
- Duties impede domestic production:** Under the Free Trade Agreement signed with Sri Lanka, India imports around 2.5 lakh tonnes of Vanaspati at zero per cent import duty while the Indian product is charged a whopping 81.65 per cent duty. This seriously affects the domestic Vanaspati and sal oil industries.
- Policy and Governance:** Though as per PESA and the Forest Rights Act, ownership over minor forest produce has been given to the Gram Sabha, sal seed is still a nationalised product in Madhya Pradesh. Furthermore, collection has been banned in Madhya Pradesh since 2006 to ensure sustainable regeneration.
- Enterprise Development:** There is hardly any technology available for local level processing, limiting the scope for enterprise development at the community level. Whatever little knowledge of local level processing is available cannot be used for enterprise development on a large scale. Besides, enterprise development has also suffered due to unsustainable harvesting and post harvesting methods, and delayed shipment. Moreover, current legal hurdles for sal fat use in domestic food processing industries act as disincentives to sal fat based enterprise development.

Call for action



- The PFA Rules needs to be amended to include the usage of sal fat in chocolate making. The Government of India should undertake research to develop quality parameters as fixed by the international market to promote export of sal fat.
- Efforts should be made to promote Vanaspati industry within the country, particularly in areas where there is ample scope in terms of raw material, infrastructure and labour.
- The Government should devise policies and procedures to set up pesticides norms in the food sector.
- There is a need to reconsider the ban on sal seed collection in Madhya Pradesh to protect the livelihoods of millions of primary collectors.
- There should be thorough research on the contents of sal fat to address current confusion on fatty acid content and to develop mechanisms for detection of pesticides, to advise on the use of pesticides, to ensure quality norms, and to meet the quality parameters fixed by international markets.
- Ecological studies on sal forest in different forest areas should be undertaken and focus should given on ecological management of sal forest, which could help examine the status of sal forests as well as help develop silvicultural prescriptions accordingly.





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