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SANDALWOOD AND ITS PRECIOUS OIL TRADE TRENDS

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ABSTRACT **DOI No: 10.36713/epra25901** **Article DOI: https://doi.org/10.36713/epra25901**

Santalum album L. commercially known as East Indian Sandalwood is indigenous to peninsular India. The Sandalwood tree is highly regarded in the Vedic texts, and the heartwood is considered to be sacred. Sandalwood is considered the epitome of excellence, imparting fragrance even to the axe that cuts it. In the last few decades, the demand and value of the Santalum album Linn (Sandalwood) has increased significantly. Sandalwood trees are almost vanished in the natural forest due to over exploitation, smuggling, grassing, fire hazards, disease and deforestation. Sandalwood and its fragrant oil are in high demand on both domestic and international markets. State governments, meanwhile, are encouraging the growing interest in growing sandalwood on private land. In India, especially the state forest department, strictly regulates the sandalwood trade. Sandalwood cannot be sold directly to customers or private business partners by farmers. Sandalwood can be sold by farmers to government agencies. The state forest department will classify and list sandalwood lots for sale through an online auction platform with the necessary permits and inspections. The different state government classifications, imports, and exports of sandalwood and its aromatic oil were discussed in this research paper.

KEYWORDS: ***Santalum album, Sandalwood, Indian Sandalwood, Chandanam, Imports and Exports, Fragrance Wood, Sandal Oil, Perfume, Scent, Trade, Marketing.***

INTRODUCTION

Santalum album. Linn commonly known as East Indian sandalwood or Indian Sandalwood and also called as Chandanam in Tamil and Sanskrit. *Santalum* is a genus that contains around 56 species and is a member of the *Santalaceae* family. There are just around 16 commercially significant and widely dispersed sandalwood species out of the 56 total. *Santalum album* Linn, *Santalum spicatum* (R.Br.) A.D.C., *Santalum lanceolatum* R. Br., *Santalum yasi* Seem, and *Santalum austrocaledonicum* Vieillard are five of the sixteen species of sandal that provide aromatic heartwood that may be used for commercial purposes. Of these species, Indian sandalwood (*Santalum album* Linn) is the world's most famous heartwood for scent (Soundararajan *et al.,* 2017). The typical yield of sandalwood oil is between 2 and 6% of heartwood weight by weight (w/w). A colourless to yellowish viscous liquid with a strong pleasant smell is the volatile oil extracted from the heartwood (Anon, 1972; Soundararajan *et al.,* 2022).

In India, sandalwood's heartwood is revered as sacred. In Indian tradition, sandalwood is used to anoint the sacred idols because its divine aroma is said to be highly appealing to the Almighty. Since sandalwood is necessary for everything from holy rituals to the final rites of devotion, it is difficult to eliminate the scent of sandalwood from the religious lives of the majority of Indians. It has been regarded as one of the most sacred trees in India for at least 2,000 years. In Hindu tradition, it is a crucial component of funeral pyres and a significant part of devotional rites (Soundararajan *et al.,* 2015). The status of sandalwood in India presently shows a significant drop in populations of natural sandalwood, especially in Southern India, as a result of illegal felling and overexploitation. The IUCN has classified the species as "vulnerable," even though it is widely valued and cultivated, especially in places like Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Kerala and other part of India. However, state governments are promoting the rising interest in cultivating sandalwood on private land (Venkatesha Gowda, 2011; Soundararajan *et al*., 2015; Soundararajan *et al.,* 2017).

There is a significant demand for sandalwood and its aromatic oil on both local and global markets. The harvesting of sandalwood trees, the extraction of sandalwood oil and the selling of the wood and oil are all included in the trade. Due to the high value of sandalwood, especially on the global market, the trade confronts difficulties with illicit harvesting and smuggling. There is a drive for sustainable production and trading methods because of the illegal activities and overexploitation of sandalwood, especially in India, which has caused its reduction in natural forests.

The sandalwood trade in India is heavily regulated by the government, particularly the state forest departments. Farmers are not authorized to sell sandalwood to private companies or consumers directly. The sandalwood will be offered up for

auction by the state forest department after obtaining proper cutting and transit permission to remove the trees from the revenue land. The state forest officials will take care of the cutting, cleaning and grading of the sandalwood with request from the famers. The cutting, cleaning, grading, transport and handling charge will be applicable for the sandalwood harvest processes. Sandalwood harvesting is the practice of growing sandal trees for their aromatic oil and rich heartwood. It usually takes minimum 20 years for sandalwood trees to achieve maturity enough to harvest their heartwood. However, Researchers are trying to reduce the sandalwood trees' rotation period in order to manage harvests sustainably. The entire sandalwood tree, including its roots, which also contain precious oil, must be uprooted in order to harvest it. After that, the oil from the heartwood is extracted and utilized in cosmetics, fragrances and traditional medicine. A tree's age, soil, and the environment all affect how much heartwood and its oil produces.

The process of commercializing sandalwood begins with the removal of mature frees from the field, marking them with a hammer, and transporting them to the closest "Final Cleaning Depot" with the appropriate authorization. After being cleaned, sandalwood trees are placed in the depots, and the weight of the "final cleaned wood" will be noted. According to governmental guidelines, the amount of finished cleaned wood, including sapwood and sawdust, will be categorized. Classification of sandalwood is various of factors involved, such as the heartwood content, sapwood, size and overall quality of Wood. Southern India state governments have different number of Classification systems. Rule No. 95 of the Karnataka Forest Manual states that sandalwood must be classified and processed before it may be sold. An e-Auction will be conducted by State Forest department with concern of the farmers. After obtaining the required permits and inspections, the forest department will categorize and offer sandalwood lots for sale using an online auction platform. This is the normal process for an e-Auction sandalwood operation. Farmers can sale sandalwood directly to Karnataka Soaps and Detergents Limited, Karnataka State Handicrafts Development Corporation Limited, Kerala Soaps & Oils Limited, The Kerala Forest Development Corporation (KFDC), State Forest Departments and other Government Agencies.

Classification of Sandalwood: The Karnataka Forest Manual Rule No. 95 specifies the following categorization details for sandalwood.

I. **Vilayat Budh:** Sound billets weighing not less than 9 Kgs. and not exceeding 112 pieces per ton
II. **China Budh:** Slightly inferior billets weighing less than 4.50 Kgs. And not exceeding 224 pieces per ton
III. **Panjam:** Having small knots, cracks and hollows. Weighing not less than 2.20 kgs and not exceeding 448 pieces per ton
IV. **Ghotla:** Short, sound pieces with no limits of weight or numbers per ton
V. **Ghatbadla:** Billets with knots, cracks, hollow and weighing not less than 4.50 kgs and not exceeding 224 pieces per ton
VI. **Bagardad:** Solid pieces with no limits in weights, lengths etc.
VII. **Roots - Class I:** Root pieces weighing not less than 6.75 kgs and not exceeding 150 pieces per ton
VIII. **Roots - Class II:** Root pieces weighing not less than2.25 kgs and not exceeding 448 pieces per ton
IX. **Roots - Class III:** Small side roots below 2.25 kgs in weight
X. **Jaipokal-I:** Billets consisting of hollow pieces weighing not less than 3.10 kgs and not exceeding 320 pieces per ton
XI. **Jaipokal -II:** Hollow pieces weighing not less than 1.30kgs
XII. **Ain Bagar:** Solid, cracked and hollow pieces weighing not less than 450 grams
XIII. **China Sali or Large Chilta:** Pieces and chips of heartwood weighing not less than 225 grams
XIV. **Ain Chilta:** Small pieces of heartwood
XV. **Milwa Chilta:** Small pieces and chips having fair proportion of heart and sap wood
XVI. **Hattari Chilta:** Heartwood chips and plaining billets with hattari (plaining)
XVII. **Basola Bukni:** Small heartwood and sapwood chips
XVIII. **Saw dust:** Sawn powder
XIX. **White Chips:** Pieces and Sap wood without scent
XX. Bark: Bark of sandalwood tree

Table: 1. Karnataka Govt Fixed Price of the Sandalwood (Amount in Indian Rupees)

Sl NO	Class	Fixed price of the Sandalwood (Amount in Indian Rupees)					
		2009-10 (Per kgs)	2010 to 12 (Per kgs)	2012 to 14 (Per kgs)	2014-18 (Per kgs)	2020-21 (Per kgs)	2020-21 (Per kgs) With Tax
1	Vilayath Budh (Class I billets)	4100	4100	5600	6050	12200	16527
2	Chinna Budh (Class II billets)	4100	4100	5650	6410	10900	14766
3	Panjam(Class III billets)	3700	3700	5200	5810	10000	13546
4	Ghotla (billets of short length)	-	4100	5600	6410	7000	9482
5	Ghatbadla	4000	4100	5500	5820	12700	17204
6	Bagardad	3950	3950	5600	5600	10900	14766
7	Roots (Class I)	3625	3625	4100	4100	9700	13140
8	Roots (Class II)	3740	3740	4150	4150	8300	11244
9	Roots (Class III)	2870	3370	4250	4250	8500	11514

10	Jajpokal or Badla (Class I)	4075	4075	4900	5160	13700	18559
11	Jajpokal or Badla (Class II)	3710	3710	4500	4900	10600	14359
12	Ainbagar	3552	4010	5500	5500	8900	12056
13	China Sali or Larhe Chilta	3220	3220	4350	4350	5500	7451
14	Ain Chilta	2682	2820	3350	3655	5400	7315
15	Hatri Chilta	1900	1900	2350	2350	2850	3861
16	Milva Chilta	1550	1550	2000	2153	3400	4606
17	Basola Bukni	870	1150	1600	1728	3600	4877
18	Saw dust	750	750	750	750	810	1097
19	White Chips					105	142
20	Bark					25	34

Source: Karnataka Forest Department

Table: 2. Tamil Nadu Government, Retail Price for Sale of Sandalwood

Sl. No	Name of the Class	Year	Amount in Rs. Per Kgs		
		2020-21	2021-22	2022-23	2023-24
1.	Chotla	19163	20313	21532	22824
2.	Gadbadla	19418	20583	21818	23127
3.	Roots I Class	17674	18735	19859	21050
4.	Roots II Class	17559	18613	19730	20914
5.	Roots III Class	16372	17354	18395	19499
6.	Jajpokal I class	29694	31475	33364	35366
7.	Jajpokal II class	26415	28000	29680	31460
8.	Ainbagar	21896	23210	23603	26079
9.	Cheria	19645	20823	22073	23397
10.	Ainchilta	13984	14823	15712	16655
11.	Milwachilta	9711	10293	10911	11565
12.	Basola Bukni	8257	8752	9277	9834
13.	Fire affected billets	16018	16979	17998	19078
14.	Fire affected roots	14809	15698	16640	17638
15.	Saw dust	3109	-	-	-
16.	Sapwood	347	-	-	-
17.	Spent dust	347	-	-	-

Source: Tamil Nadu Forest Department.

Table: 3. Kerala Government, Retail Price for Sale of sandalwood

Sl. No	Name of the Class	2022-23 Seigniorage R ate per Kgs
1.	Vilayat Budh	14700
2.	China Budh	14700
3.	Panjam	14000
4.	Ghotla	13600
5.	Ghat Badla	13800
6.	Bagradad	10900
7.	Roots 1st class	12900
8.	Roots 2nd class	10900
9.	Roots 3rd class	10500
10.	Jai pokal	9900
11.	Cheria	6200
12.	Mixed chips	4400
13.	Saw dust	3000
14.	Sapwood billets	900
15.	Sapwood chips	150

Source: Kerala Forest Department

Import and Export of Sandalwood Policy

One of the most prized trees of Indian origin for a long time is sandalwood, which has a potential export market. There are several chances in the business despite concerns like strict laws and regulations and climate change. If only India could encourage farming contribution and sustainable practices. Looking into the future, sandalwood may become not only the exquisite material but the symbol of India, which manage to preserve traditions, develop a new perspective, and consider the problem of environment consciousness.

Sandalwood imports and exports have specific rules and restrictions in India. According to the Foreign Trade Policy (FTP), Director General of Foreign Trade Notification No. 37 dated 27th January 2017, Export Policy of sandalwood against Sl. No. 182 to 187, Chapter 44: Wood and Articles of Wood; Wood Charcoal of Schedule 2 of ITC (HS) Classification of Export & Import Item has been amended to bring clarity for export of specified categories as follows (Bhalla, DGFT., 2017).

Sandalwood imports are limited and require a particular import permission, while exporting raw sandalwood logs is prohibited. Exports of sandalwood in the form of finished handicraft products, machine-finished sandalwood products are permitted freely but subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Sandalwood Oil is freely permitted to export but subject to Quantitative ceilings and conditionalities as may be notified by the Director General of Foreign Trade from time to time. Sandalwood De-oiled Spent Dust is restricted but Export permitted under licence subject to conditionalities as may be notified by the Director General of Foreign Trade from time to time.

Following some other forms of sandalwood is restricted but export permitted under licence subject to conditionalities as may be notified by the Director General of Foreign Trade from time to time.

a) dust/ flakes obtained as wood scrap / waste after the manufacturing process by manufacturer exporter of value-added sandalwood handicraft products and machine finished sandalwood products
b) machine finished chips manufactured from cracked portions of sandalwood billets (each finished chips not exceeding 50 grams per piece)
c) powder obtained from wood scrap / waste after the manufacturing of handicraft products and machine finished goods of sandalwood
d) small pieces of sandalwood (each piece not exceeding 20 grams) obtained from wood scrap/waste after manufacturing of handicraft/ machine finished sandalwood products.
e) sandalwood powder produced from sandalwood wood scrap/waste
f) any other item of sandalwood as may be specified by Director General of Foreign Trade (DGFT) in consultation with Ministry of Environment, Forest and Climate Change (MOEF&CC).

In India, import and export operations require the 10-digit alphanumeric Import Export Code (IEC), which is issued by the Directorate General of Foreign Trade (DGFT). Internationally, traded goods are also classified using the Harmonized System (HS) code, which is referred to as the ITC (HS) code in India. Directorate General of Foreign Trade (DGFT) issued for the Sandalwood import & export HS code: 44039922; Sandalwood (*Santalum album*) Chips & Dust HS code: 12119018; 12119050; 12119051; Sandalwood (*Santalum album*) Oil HS code: 33012937(dgft.gov.in).

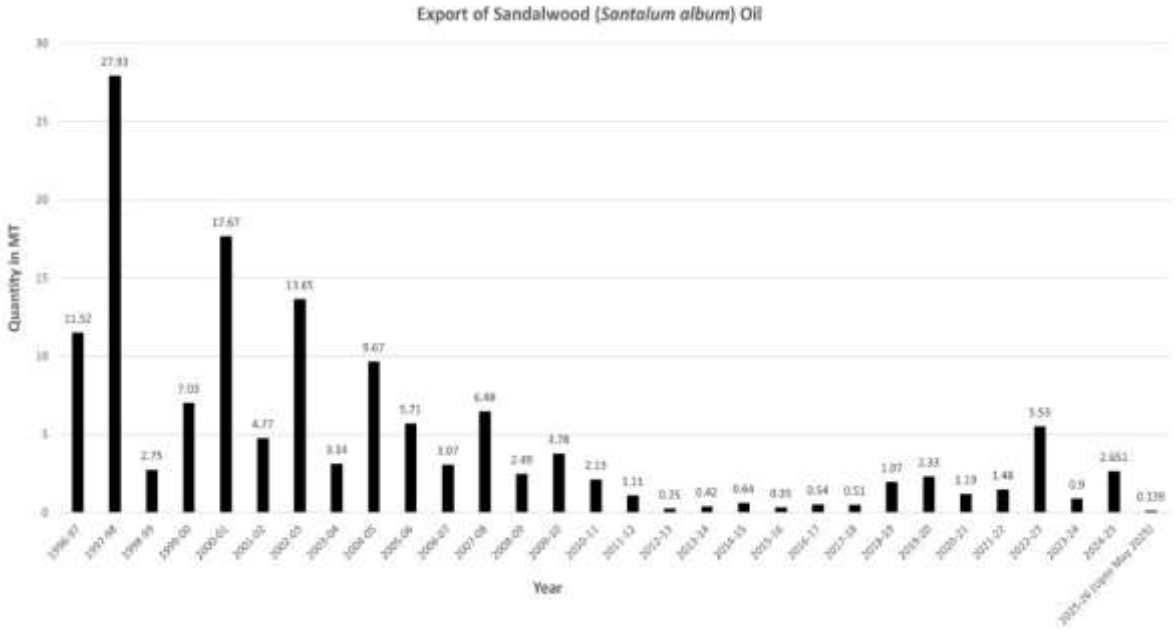
Sandalwood Oil

Since the dawn of perfumery and even in the contemporary fragrant world, the aromatic qualities of sandalwood oil from the East Indian sandalwood tree have been legendary. Sandalwood oil's non-dominant fixative qualities and warm, sweet, precious wood notes make it a perfect choice for making a wide range of fragrances. In addition, sandalwood oil has diuretic, antipyretic, antiseptic, and antiscabietic qualities. Additionally, it works well for treating urinary tract disorders, bronchitis, cystitis, and dysuria. The oil holds a significant position in the traditional medical system. It is thought to be a treatment for herpes and migraines (Soundararajan *et al*., 2015). There have been several attempts to replace sandalwood, but ultimately, "sandalwood is the wood" and there isn't a true replacement for its royal fragrance (Baldovini *et al*, 2011).

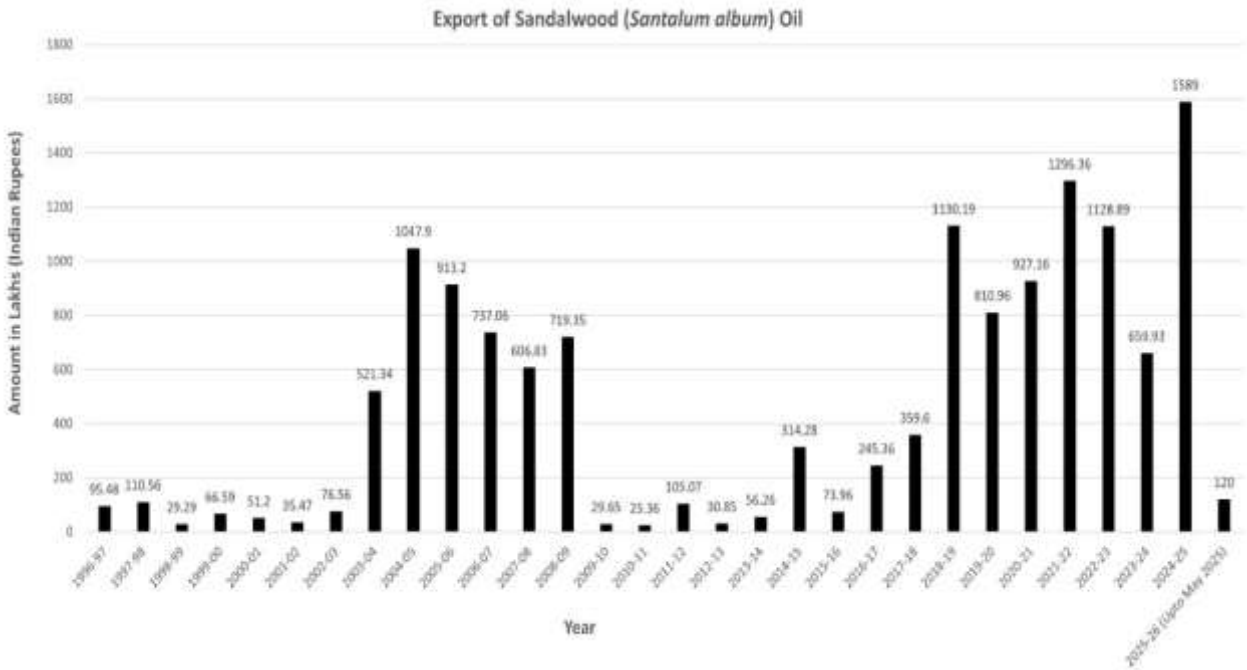
An overview of the volume shipped and the average price is provided by the statistics shown below. It is evident that in 1997–98, 27.93 MT sandal oil were exported, bringing in Rs. 110.56 Lakhs. However, in 2024–25, only 2.651 MT of sandal oil were exported, with an export value of Rs. 1589.00 lakhs, and the average price tripled. But in 2024–2025, 21.742 metric tons of sandal oil were imported, valued at Rs. 12959.00 lakhs. There was no data available for the import of sandalwood oil in 1999-00.

Graph 1 & 2 illustrates the market's flexibility in terms of sandalwood oil exports from 1992 to 2025, while Graph 3 & 4 demonstrates that sandalwood oil imports are steadily rising in the Indian market.

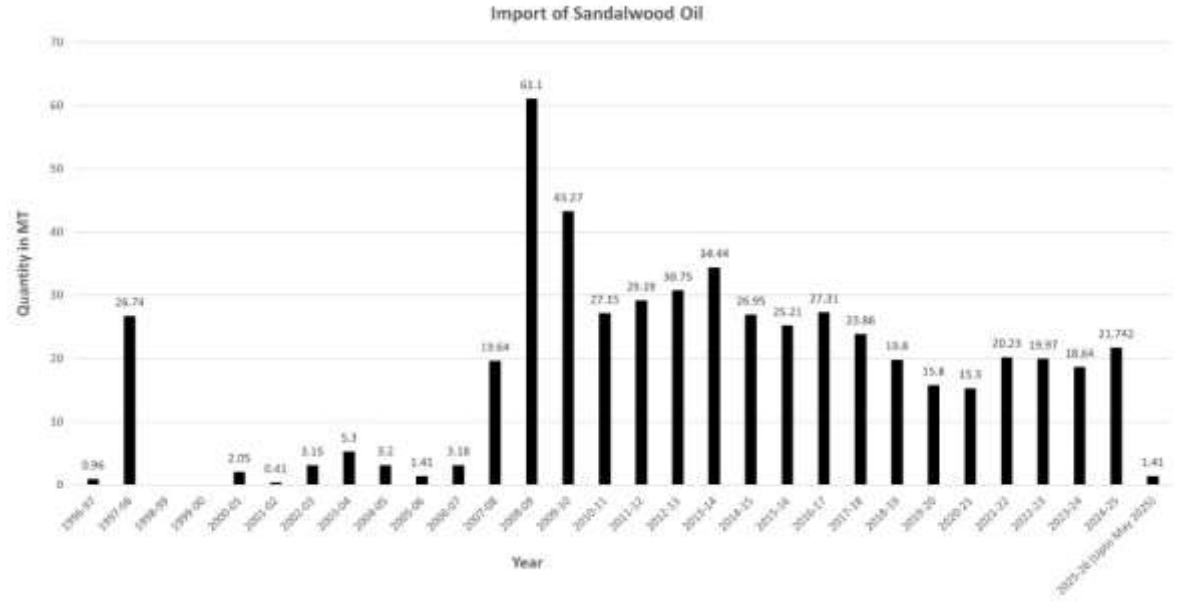
Graph 1: Export of Sandalwood (*Santalum album*) Oil Quantity



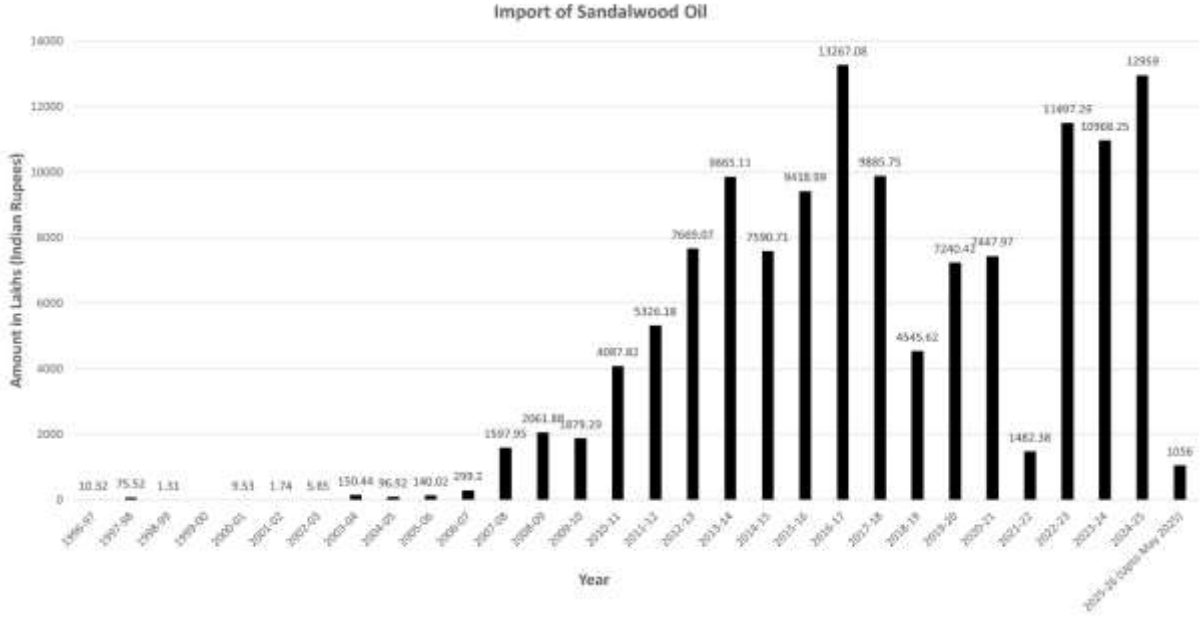
Graph 2: Export of Sandalwood (*Santalum album*) Oil Amount



Graph 3: Import of Sandalwood Oil Quantity



Graph 4: Import of Sandalwood Oil Amount



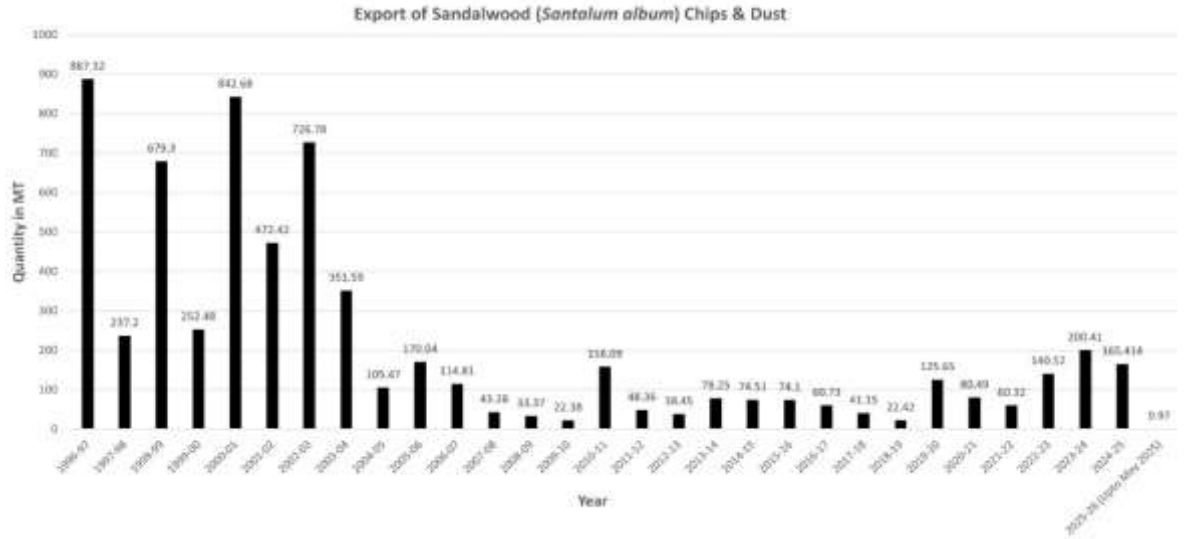
Source: Export & Import Data Bank Tradestat, Ministry of Commerce & Industry

Sandalwood Chips & Dust

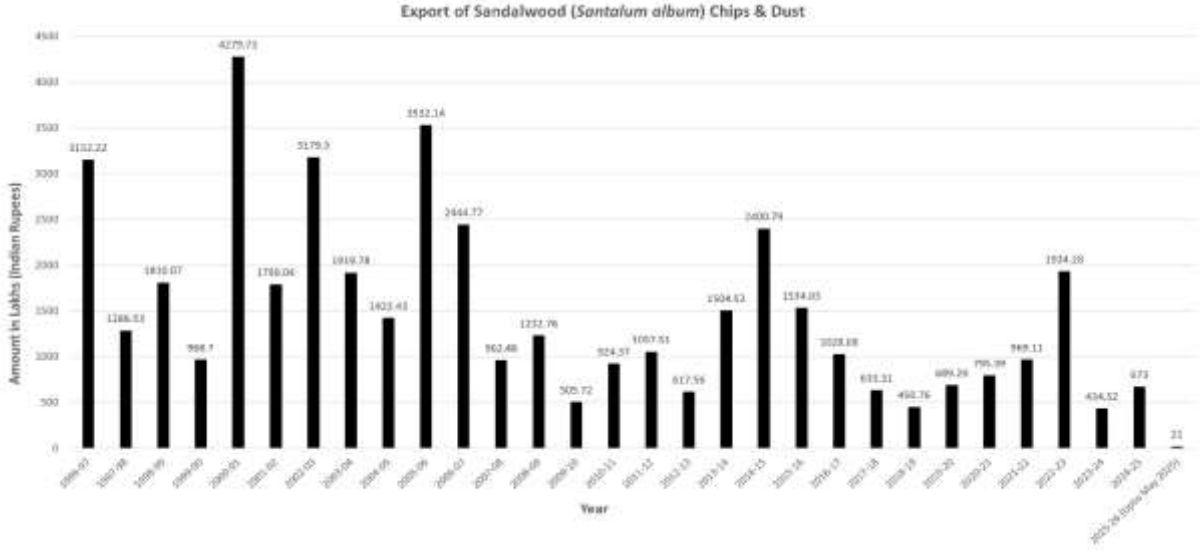
In 1996-97, 887.32 MT Sandalwood (*Santalum album*) Chips & Dust were exported, bringing in Rs. 3152.22 Lakhs. In 2024-25, 165.414 MT of Sandalwood Chips & Dust were exported, with an exported value Rs. 673 Lakhs. In 1996-97, 6.07 MT Sandalwood Chips & Dust were imported, bringing in Rs. 5.65 Lakhs. But in 2024-25, 788.855 MT of Sandalwood Chips & Dust were imported, with an import value of Rs. 5244.00 lakhs. Sandalwood (*Santalum album*) Chips & Dust exports are declining daily. But the import of sandalwood chips and dust is growing daily.

In terms of Sandalwood (*Santalum album*) Chips & Dust exports from 1996 to 2025, Graphs 5 & 6 show the market's flexibility, while Graphs 7 & 8 show that Sandalwood Chips & Dust imports are continuously increasing in the Indian market. There was no data available for the import of sandalwood chips and dust in 2002-03 & 2004-05.

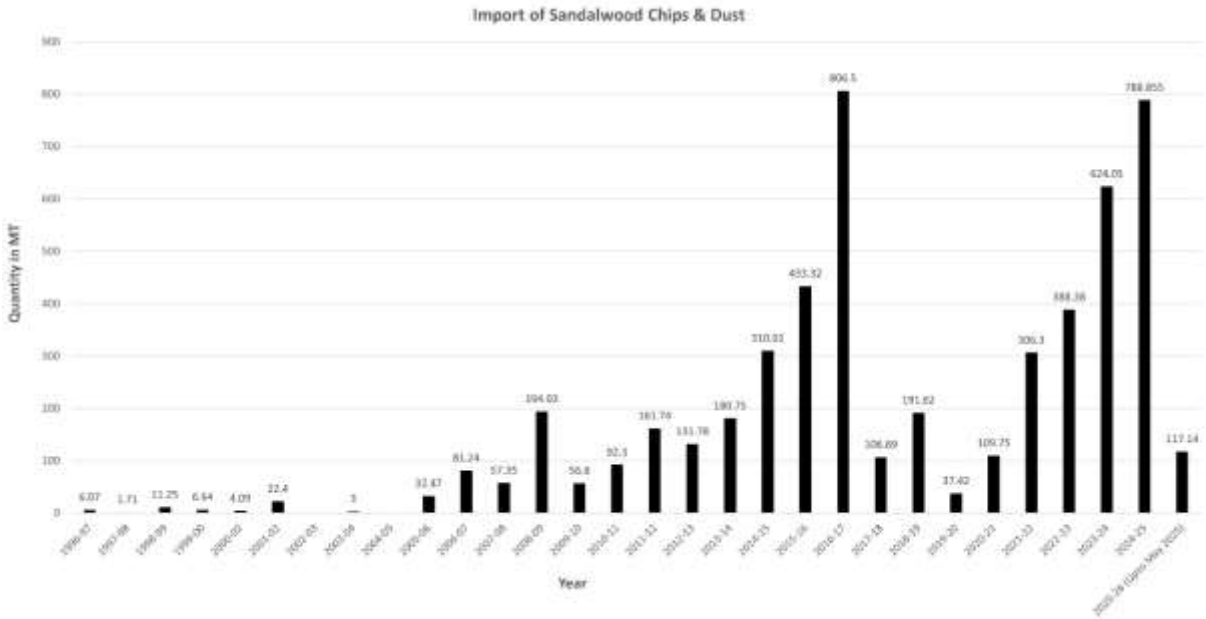
Graph 5: Export of Sandalwood (*Santalum album*) Chips & Dust Quantity



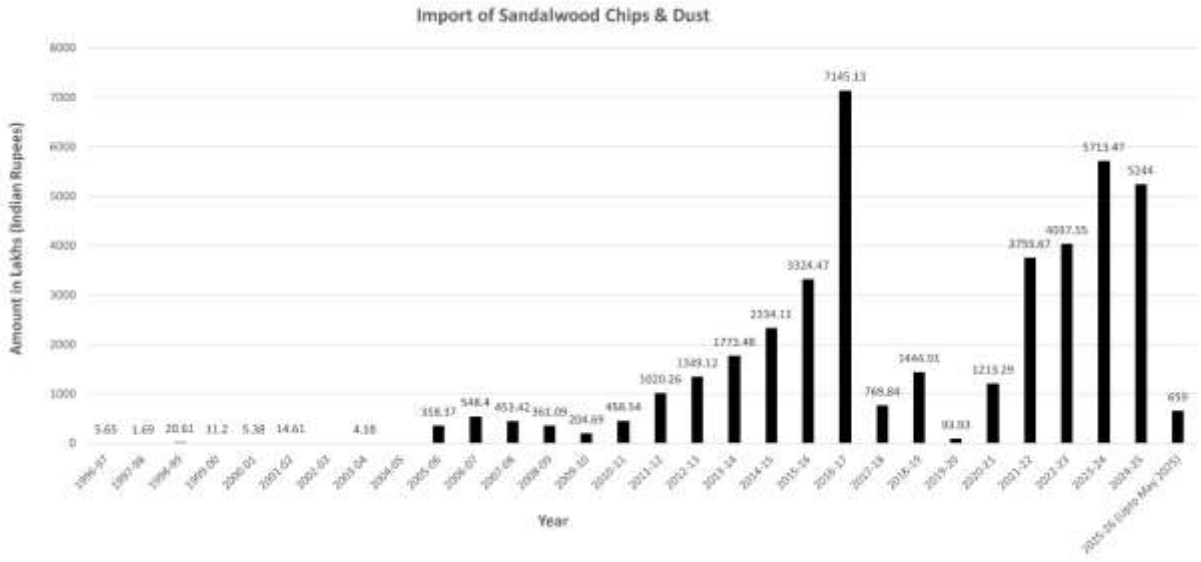
Graph 6: Export of Sandalwood (*Santalum album*) Chips & Dust Amount



Graph 7: Import of Sandalwood (*Santalum album*) Chips & Dust Quantity



Graph 8: Import of Sandalwood (*Santalum album*) Chips & Dust Amount



Source: Export & Import Data Bank Tradestat, Ministry of Commerce & Industry

CONCLUSION

India's sandalwood production, especially its wild populations, is now under threat due to illegal felling, forest fires, grazing, and, to some extent, spike disease, as well as high local and international demand and a lack of consistent regulations. Future challenges for the sandalwood industry include increased demand, depleting natural resources, and the requirement for sustainable operations. India used to be a dominant force, but its production of sandalwood has decreased, increasing its dependency on imports and encouraging illegal logging. Because of its high value, especially for its oil, sandalwood is susceptible to poaching and requires strong forensic methods to confirm its provenance and stop illicit trading. Sustainable plantation development, along with efficient regulation and enforcement, are essential to the sandalwood trade's long-term survival.

Smuggling of sandalwood has created socio-economic and law and order problems in all sandal producing states. The overall state of sandalwood wealth in the country might be improved with a national ordinance governing the transportation and consumption of sandalwood. Raising large scale plantations in the natural sandal bearing region will also add up to the resource building of the valuable tree species. However, the lack of production or domestic consumption data make it impossible to judge the state of the supply base and whether this (as well as the quantity of exports) is likely to change in the future.

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