

**REPORT ON
THE MARKETING OF
SANDALWOOD OIL IN INDIA**



**DIRECTORATE OF MARKETING & INSPECTION
MINISTRY OF RURAL DEVELOPMENT
GOVT. OF INDIA, FARIDABAD-121 001**

CONTENTS

| | Page |
|--|------|
| <i>Preface</i> | (vi) |
| 1. Evolution of Sandalwood oil industry | 1 |
| 1.1 Introduction | 1 |
| 1.2 History of evolution of Sandalwood oil trade | 1 |
| 1.2.1 World | 1 |
| 1.2.2 India | 5 |
| 2. Production of sandalwood oil | 7 |
| 2.1 Production in the world | 7 |
| 2.2 Production in India | 8 |
| 2.3 Number of factories and stills in operation in India | 8 |
| 3. Extraction of Sandalwood oil | 11 |
| 3.1 Conventional method | 11 |
| 3.2 Hydro-distillation method | 11 |
| 3.3 Steam distillation method | 13 |
| 3.4 Solvent extraction process | 20 |
| 3.5 Other methods | 21 |
| 3.6 Rectification of oil | 21 |
| 3.7 Disposal of exhausted wood | 22 |
| 4. Utilisation of Sandalwood oil | 25 |
| 4.1 Exports | 25 |
| 4.1.1 Quality | 25 |
| 4.1.2 Quantity and value | 25 |
| 4.1.3 Destinations | 29 |
| 4.1.4 Transportation | 34 |
| 4.2 Importance of oil of sandalwood in the export trade of India | 34 |
| 4.3 Internal consumption | 35 |
| 4.3.1 Perfumery | 35 |
| 4.3.2 Attar preparation | 38 |

(ii)

| | Page |
|--|------|
| 4.3.3 Soap and toileteries | 38 |
| 4.3.4 Incence sticks or Agarbattis | 38 |
| 4.3.5 Medicines | 39 |
| 4.3.6 New Substitutes | 39 |
| 5. Prices | 41 |
| 5.1 Wholesale prices in world markets | 41 |
| 5.2 Wholesale prices in India | 43 |
| 5.3 Seasonal variations in prices | 44 |
| 5.4 Retail prices | 49 |
| 5.5 Slump in prices and glut situations | 49 |
| 5.6 Market intelligence | 50 |
| 5.7 Cost of production of sandalwood oil | 51 |
| 5.8 Cost of oil in relation to average price of sandalwood | 56 |
| 6. Assembling, storage and distribution of sandalwood oil | 59 |
| 6.1 Assembling | 59 |
| 6.2 Distribution | 59 |
| 6.3 Trade practices | 61 |
| 6.4 Storage and packaging | 61 |
| 6.4.1 Storage | 61 |
| 6.4.2 Packing and containers | 64 |
| 6.4.3 Effect of metal containers on the quality of the product | 66 |
| 6.4.4 Cost of packaging | 66 |
| 6.4.5 Market charges | 66 |
| 6.4.6 Cost for export consignments | 66 |
| 7. Grading and standatdisation | 69 |
| 7.1 Need for grading of oil of sandalwood under Agmark | 69 |
| 7.2 Framing of Agmark specifications | 69 |
| 7.3 Modus operandi for grading | 70 |
| 7.3.1 Person who may grade | 70 |
| 7.3.2 Sampling and Testing of oil | 74 |
| 7.3.3 Grading and marking | 74 |

(iii)

| | Page |
|--|-----------|
| 7.3.4 Certificate of grading | 75 |
| 7.4 Check inspection | 75 |
| 7.5 Grading for internal trade | 77 |
| 7.6 Progress of grading | 77 |
| 7.7 Some effects of the introduction of the grading scheme | 77 |
| 8. Research and development of sandalwood oil industry in India | 79 |
| 8.1 Difficulties of private distillers | 79 |
| 8.1.1 Supply of sandalwood | 79 |
| 8.1.2 Sales tax | 79 |
| 8.1.3 Supply of coal | 79 |
| 8.1.4 New synthetics | 80 |
| 8.1.5 Oil from smuggled sandalwood | 80 |
| 8.2 Adulterants of sandalwood oil | 80 |
| 8.3 Chemical composition | 81 |
| 8.4 Need for sophisticated analysis | 82 |
| 8.5 Publicity | 82 |
| 8.6 Mutual allowance for quality | 82 |
| 8.7 New developments—synthetic substitutes | 83 |
| 8.8 Basic Chemicals, Pharmaceuticals and Cosmetics Export Promotion Council | 84 |
| 9. Summary and recommendations | 85 |
| 9.1 Summary | 85 |
| 9.2 Recommendation | 87 |

ANNEXURES

| | |
|---|-----|
| 1. State-wise estimated production of sandalwood oil in India for the years 1963-64 to 1980-81 | 93 |
| 2. Physical and chemical characteristics of sandalwood oil of differ- ent countries | 94 |
| 3. Export of sandalwood oil from India for the year 1960-61 to 1980-81 | 96 |
| 4. Export of essential oils for important countries | 108 |
| 5. Rates of Mysore Govt. Sandalwood oil in export markets | 109 |

| | Page |
|--|------|
| 6. Monthly estimated average prices of sandalwood oil in different markets for the years 1970-71 to 1980-81 | 110 |
| 7. Cost of production of sandalwood oil as furnished by M/s. Karnataka Soaps and Detergent Ltd., Bangalore, for the years 1975-76 to 1979-80 | 112 |
| 8. Grading statistics of sandalwood oil under Agmark from 1963-64 to 1980-81 | 113 |
| 9. Number of factories producing sandalwood oil and number of stills employed with each | 114 |
| 10(a) Export of essential oils, perfumes and flavouring materials for the years from 1977-78 to 1980-81 | 116 |
| 10(b) Import of essential oils, perfumes and flavouring materials for the years from 1977-78 to 1980-81 | 119 |
| 11. The Essential Oils Grading and Marking Rules, 1954 | 122 |
| 12. Certificate of Agmark Grading (Specimen) | 126 |
| 13. Names of associations and institutions related with sandalwood and its oil | 127 |
| 14. List of International Standard Organisations and Publications on essential oils | 128 |
| 15. Major exporters of sandalwood oil registered with Basic Chemicals Pharmaceuticals and Cosmetics Export Promotion Council, Bangalore | 131 |
| 16. List of field officers associated with the survey on "Marketing of Sandalwood and its oil in India" | 132 |

ILLUSTRATIONS

| | |
|---|--------|
| 1. Water distillation of sandalwood | 12 |
| 2. Disintegration of sandalwood | 14 |
| 3. Distillation condenser | 15 |
| 4. (a) and 4 (b) Distillation of sandalwood | 16, 17 |
| 5. Flow sheet diagram of sandalwood oil factory | 19 |

| | Page - |
|--|--------|
| 6. (a) and 6 (b) Packing of sandalwood oil in small containers | 62, 63 |
| 7. Sampling of sandalwood oil | 71 |
| 8. (a) and 8 (b) Analytical work of sandalwood oil at Regional Agmark Laboratory | 72, 73 |

GRAPHS

| | |
|---|-----|
| 1. Estimated production of sandalwood oil in India for the years 1963-64 to 1980-81 and major contributing States | 9 |
| 2. Export of sandalwood oil | 26 |
| 3. Percentage share of major importing countries | 32 |
| 4. Percentage variation in wholesale prices of sandalwood oil during 1979-80 and 1980-81 at Kuppam and Calcutta markets | 47 |
| 5. Percentage variation in wholesale prices of sandalwood oil during 1979-80 and 1980-81 at Cochin and Kanpur markets | 48 |
| 6. Year-wise grading of sandalwood oil in India for the years 1963-64 to 1980-81 | 76 |
| BIBLIOGRAPHY | 133 |

PREFACE

Sandalwood is an example of nature's bounty and the oil concealed in the inner core of its heart-wood is another hidden treasure. India is one of the rare countries gifted with this fortune. The Indians have enjoyed the love of nature and have taken the pearls in the form of sandalwood oil as gift.

Amongst the various essential oils produced in India, oil of sandalwood has the highest contribution to the foreign exchange earnings. A brochure on the marketing of sandalwood and its oil in India was brought out in 1961. The reception given to this publication was very much gratifying. It has long been out of print and also in the meanwhile a lot of changes in the marketing pattern of sandalwood oil have taken place. The production as well as export of oil of sandalwood has declined significantly. This prompted the study into the various aspects/problems concerned with sandalwood oil and its trade.

In preparing this report, the aim has been to give a complete picture of sandalwood oil industry and trade, production-techniques followed in the country, import and export, utilisation, new developments and related problems. The primary data and information have been collected in detail by a systematic survey all over the country and the secondary data have been compiled from various publications and other sources.

The trade in sandalwood oil is facing a downward trend at this stage. The production which was about

200 tonnes in the past, has dwindled to nearly 70 tonnes, out of which India is in a position to utilise only 30 to 35 tonnes and the rest of it is being exported to other countries as a raw material for finished products like perfumes etc. These perfumes fetch a handsome price in comparison to the sandalwood oil. India is very much rich in flora and fauna spread over from Kashmir to Kanyakumari, available throughout the year which still remains unexploited. A technique of blending and developing certain perfumes under an organised institution can prove a mint of foreign exchange. This will further facilitate the opening of new industries to come up and provide employment opportunities. A well-planned organisation associating the traders, industry and scientific institutions is essential and the same may be considered on the pattern of Tea, Coffee and Rubber Boards. Such a set-up may also provide a base to look into the various problems of production, planning and processing to achieve overall development of these industries. Perhaps it will be in fitness of things to constitute an Essential Oils Board at the National Level.

In preparation of this report, a number of people, organisations and institutions have extended their co-operation to whom our thanks are due. We are especially thankful to S/Shri V. Jayappa, Director, Karnataka Soaps & Detergents Ltd. and R. Venkatesan, Chief Conservator of Forest, Bangalore who were kind enough to furnish the valuable information. We are also thankful to Dr. Nagarajan and his staff, Publication & Information Directorate Library, New Delhi,

for providing library facilities and extending whole-hearted support and co-operation.

This report was prepared by Shri R. J. Verma, Dy. Agricultural Marketing Adviser with the Assistance of Shri V. K. Mittal, Asstt. Marketing Officer under the guidance and supervision of Dr. G.R. Bhatia, Joint Agricultural Marketing Adviser.

The Government of India should not be regarded as assuming responsibility for any of the statements/ comments appearing in this report.

ATUL SINHA.

Agricultural Marketing Adviser to
the Govt. of India

Dated : July, 1984
Faridabad.