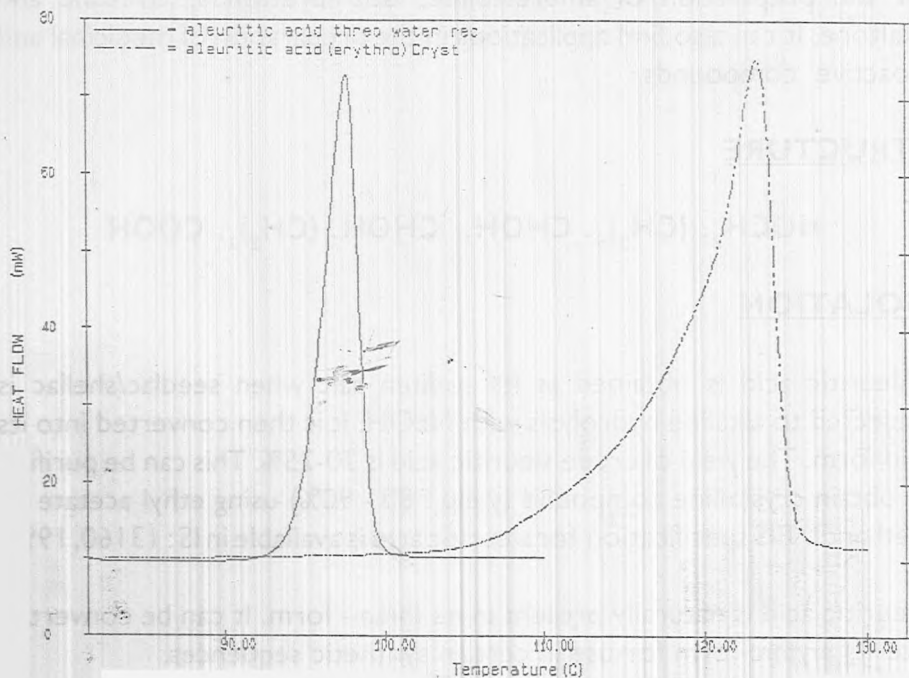


ALEURITIC ACID



1996

Indian Lac Research Institute
Indian Council of Agricultural Research
Namkum, Ranchi 834 010

Aleuritic acid (9, 10, 16 - trihydroxypalmitic acid) is a major constituent acid (~ 35%) of lac resin. It can easily be isolated from lac by a simple process. It is mainly used, in the perfumery industry, as a starting material for the preparation of ambrettolide, isoambrettolide, civetone and exaltone. It can also find applications in the preparation of medicinal and bioactive compounds.

STRUCTURE



ISOLATION

Aleuritic acid is obtained as its sodium salt when seedlac/shellac is subjected to alkaline hydrolysis with NaOH. It is then converted into its acid form. The yield of crude aleuritic acid is 20-25%. This can be purified to obtain crystalline compound (yield : 80 - 90%) using ethyl acetate or methanol. BIS specification for aleuritic acid is available in IS : 13160, 1991.

Aleuritic acid is naturally present in its *threo* - form. It can be converted into its *erythro*-form for use in certain synthetic sequences.

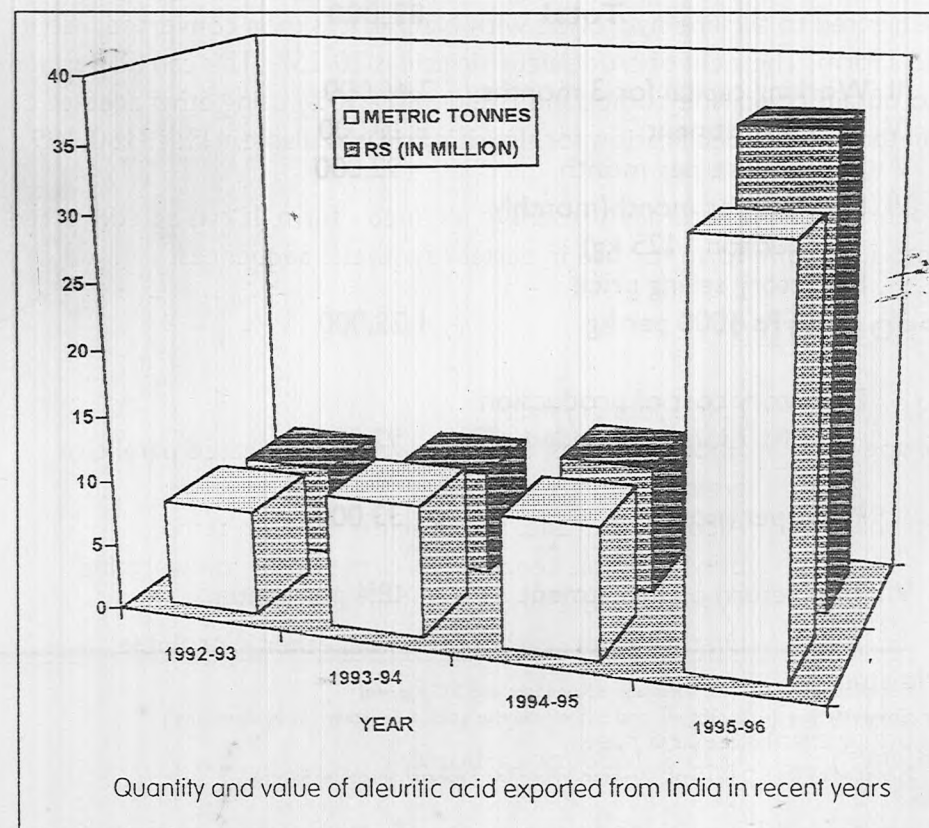
PROPERTIES

Nature :	colourless crystals
Shape :	Rhombic flakes, from hotwater; elongated parallelogram, from aq. alcohol
Solubility :	Alcohol, acetone, acetic acid - at room temp. Ethyl acetate, benzene, chloroform - on warming Water - under hot condition Diethyl ether, carbon disulfide, ether - Insoluble
Moisture content :	1.0%
IR(cm^{-1}) :	1725 & 1655 for carbonyl
R.D. :	1.1

APPLICATIONS

Aleuritic acid can be used for the preparation of compounds for a wide range of applications. Some of the conventional and potential applications of aleuritic acid are :

- perfumery compounds
- insect sex pheromones
- pharmaceutical chemicals
- esters with styrene - acrylic acid co - polymer, as binder
- metallic salts, as stabilizers
- polymeric ester, in GLC
- plant growth regulators



MANUFACTURE

Outline scheme for producing 5 kg of aleuritic acid per day

I Non - recurring expenditure

Land, building etc.	2,45,000
Machinery & equipments	3,12,000
Miscellaneous	17,000
Total	5,74,000

II Recurring expenditure (per month)

Raw materials	68,000
Salary, wages	6,000
Others	8,000
Total	82,000

III Working capital for 3 months 2,46,000

IV Total Investment 8,20,000

V Expenditure per month 92,000

VI Receipts per month(monthly
production 125 kg)

Ex-factory selling price
@ Rs 1000 per kg 1,25,000

Ex-factory cost of production
@ Rs 735/- kg(rounded off) 92,000

Profit per month 33,000

VII Net return on investment = 48% per annum

Compilation: R.N.Majee, R.Ramani, I.Rajendran and S.C.Agarwal

Cover: Melting profile of *threo* and *erythro* aleuritic acids, (courtesy - D. N. Goswami)

DTP : L. C. N. Shahdeo and D. Ganguly

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