The Linseed Trade of British India

A Communication from the Foodstuffs Division, Department of Commerce

BRITISH INDIA is the third largest producer of linseed in the world, being exceeded only by Argentina and the United States, and is the second largest exporter, Argentina ranking first.

The feature of the cultivation of linseed in India is that it is cultivated entirely for its seed and not for its fiber. It is sown either by itself or as a mixed crop and the plant is allowed to develop a branching habit of growth, which greatly lessens its value for fiber.

In 1904-05 nearly 560,000 tons of seed were shipped and India practically monopolized the world's trade, but thereafter the increased competition of Argentina, United States, Canada, and Russia had, when the war broke out, reduced India's share of the trade to 25 per cent. Indian linseed is preferred, however, to that of any other country.

Producing Areas

The principal producing areas are the Provinces of Bihar and Orissa, United Provinces, Central Provinces, Bengal and Bombay. The area under cultivation aggregates ordinarily between 3,000,000 and 3,500,000 acres, inclusive of a mixed crop of about 600,000 acres in the United Provinces, but in years of scarcity the total is much reduced. In a good year the outturn of linseed from pure and mixed crops exceeds 500,000 tons, and the quantity available for exports is in the neighborhood of 400,000 tons. A certain quantity of linseed is crushed in India but the oil obtained apparently does not equal that manufactured abroad, for the railways and other large consumers of linseed oil find it necessary to import their requirements.

Agricultural Statistics—Importance of the Monsoon

Linseed is sown in India between the months of August and October. It is harvested between the months of January and April. The first, second, and final Government forecasts on the linseed crop are published on January 1, March 15, and June 1, respectively. The latest estimated area was placed at 3,352,000 acres, giving an estimated yield of 351,000 tons.

Agricultural statistics and forecasts of important crops are prepared and published by the Government of India. It is generally agreed that the annual figures of areas sown with the various crops are, on the whole accurate, and that they compare in this respect very favorably with those published by other countries. There are difficulties even here, however, mainly arising from the absence of a subordinate staff in permanently settled tracts. In Madras village officers in these tracts act as a reporting agency, but in Bengal and Bihar and Orissa, where no such officers are available, reliance is to be placed mainly on reports from the police. Wherever possible, assistance is obtained from officers of the revenue department and from district agricultural officers and non-official agricultural correspondents. The information thus collected is forwarded through the subdivisional officers to the district officer, who has the discretion to reject or amend reports in the light of his own knowledge or experience. These reports are admittedly often mere guesses. The Government has considered whether any steps could be taken to obtain more accurate information, and, while admitting the unsatisfactory character of the information obtained, has taken the view that no improvement could be effected without incurring expenditure which would not be justified by the results to be obtained.

The outstanding factor affecting the sowing, growing, and harvesting of linseed—as other crops in India—is the monsoon, or seasonal rainfall, which is quite uncertain. Cultivators are much more dependent in India on rainfall than those in other parts of the world, because of the general lack of irrigation. The cultivation of linseed and other crops is also affected by insect pests and diseases. All of these factors are closely followed by responsible merchant houses in India, which are important factors in the export trade, and their cable reports to consuming and market centers like London and New York can be fairly well relied upon.

Principal Markets—Methods of Sale

Most of India's trade in linseed is with the United Kingdom, but France, Italy, and Belgium take large quantities. Out of a total of 308,000 tons exported in 1925-26, shipments to the United Kingdom accounted for 111,000 tons, France 62,000 tons, Italy 39,000 tons, and Belgium 32,000 tons. Yellow and brown varieties of linseed are commercially recognized. Most of the crop marketed is of the brown variety, which is graded into "bold," "medium," and "small." Bombay exports chiefly "bold" and "small," and Calcutta the "medium." Yellow linseed is exported from Bombay only and is often sold with an admixture of "bold brown," which may run as high as 80 per cent.

Linseed is generally shipped throughout the year, but the busy season is from May to July. The unit of sale in Calcutta is the bazaar maund of 82¼ pounds, and in Bombay the hundredweight of 112 pounds. Sterling quotations are for the ton of 2,240 pounds net, landed terms or c. i. f. Shipments are made from Calcutta in single B twill bags of 164 pounds, or double E bags of 186 pounds net. In Bombay the unit of weight ranges from 168 to 196 pounds gross.

Most firms maintain their own buyers in the upcountry districts, who advance funds through one or more middlemen to the cultivators against contracts for their standing crops. These district field representatives are in constant touch with their head offices at Karachi, Bombay, and Calcutta, and keep them posted by wire as to the weather and crop conditions and other factors affecting market trends. The Indian port offices of these firms then cable their market reports to their own offices or connections in Europe, London, and New York, and competition between them is sufficiently keen to permit ultimate buyers to rely upon their reports as giving their best opinions of the market.

Production and Exports

The following table gives production and exports of linseed from India for a term of years:

BRITISH INDIA'S PRODUCTION AND EXPORTS OF LINSEED

Year	Production Bushels	Exports Bushels
1909-1913, average	20,578,000	13,780,000
1923	21,320,000	14,107,000
1924	20,040,000	15,115,000
1925	16,040,000	14,022,000
1926	16,080,000	7,338,000
1927	16,280,000	8,531,000
1928	14,040,000	[1] 5,350,000

[1] 10 months, January to October.

Cacao Butter Analytical Method

A new method for the detection of cacao butter adulteration by means of benzoic peroxide involves treatment of the sample with a chloroform solution of benzoic peroxide, as follows: To a solution of two grams of the sample in 10 cc. of chloroform and 40 cc. of reagent prepared as below, the content of which has been carefully determined, so that for 5 cc. about 12-13 cc. of 0.1 N sodium thiosulfate will be consumed. The temperature should remain constant at about 20° throughout the determination. From time to time remove 5 cc. of the chloroform solution to an acidified potassium iodide solution and after vigorous agitation titrate the precipitated iodine with 0.1 N sodium thiosulfate solution. The end point is reached when no further recession in the amount of precipitated iodine is observable, at which time there should be still an excess of benzoic peroxide present. Curves constructed on values obtained in the examination of samples of pure cacao fat and other fats likely to be used in adulteration show two possible groups of fatty admixture, 1. of fats having greater and 2. of fats having less unsaturation than cacao butter. The values are based on time of reaction and amount of benzoic peroxide consumed in terms of sodium thiosulfate. The relative position of the curves of samples in question to that of pure cacao butter permits estimation of the extent of adulteration. *Preparation of reagent*: Dissolve 10 grams of benzoic peroxide in 100 ml. of ether-chloroform mixture (1:1) and cool to 0°; add an equally cooled solution of 1 gram sodium in 20 ml. of alcohol in a thin stream with proper agitation, immerse in ice water for ½ hour, then dissolve the magma in 300 ml. of ice water, separate the mixture in a separatory funnel, acidify with dilute sulfuric acid and extract the benzoic peroxide with two 150 ml. portions of chloroform. Dry over sodium sulfate, filter and adjust by addition of more chloroform until 5 cc. is equal to 12-13 cc. of sodium thiosulfate. *Pharm. Ztg.* 74, 384-5 (1929) *Editor's Note*: Any of our readers who attempt to duplicate this procedure are urged to exercise the most extreme caution in the addition of sodium solution to peroxides.

Preparations which disperse in water are prepared by milling organic substances which are not readily soluble in water with a dispersion agent such as soap, for a considerable time. Examples of the organic substances are aminoazobenzene, dianisidine and phenol.—Swiss Pat. No. 128,441.