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Appendix.

District.	Normal acreage.	Yield per acre (dry leaf) 1931—32.
1. Guntur.	103,000	1313 lbs.
2. Vizagapatam.	52,000	1119 "
3. Coimbatore.	33,000	1128 "
4. East Godavari.	14,500	1235 "
5. Madura.	10,000	1152 "
6. Kistna.	8,000	1404 "
7. West Godavari.	7,000	1157 "
8. Kurnool.	7,000	1090 "
9. Anantapur.	5,000	860 "
10. Salem.	5,000	1140 "
11. Ganjam	3,000	960 "
12. Trichinopoly.	3,000	1152 "
13. Bellary.	3,000	890 "
14. North Arcot.	3,000	970 "
15. Ramnad.	3,000	1164 "
16. Nellore.	2,600	1144 "
17. Tanjore.	1,900	960 "
18. South Arcot.	1,700	890 "
19. Cuddapah.	1,500	940 "
20. South Canara.	1,400	1164 "
21. Tinnevely.	1,300	1068 "
22. Chittoor.	500	1070 "
23. Chingelput.	50	1010 "
24. Malabar.	50	720 "
25. Nilgiris.	50	816 "

TOTAL. 27,550 acres.

YIELD. — Normal average for the Presidency — 1195 lbs. per acre.
Ranging from 1,000 to 1,300 lbs.

THE PREPARATION OF TIRUPATTUR DHALL

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Introduction. Dhall is largely consumed by vegetarians in different forms either as such or in combination with vegetables etc. Red gram (*Cajanus indicus*) from which dhall is prepared occupied 28,88,98 acres in this presidency according to season and crop report for 1932-33. Out of this, North Arcot district had 21,958 acres, of which Tirupattur

taluk, alone had 6996 acres. Other important districts where red gram is cultivated on a large extent, are in order of rank, Trichinopoly, Bellary, Anantapur, Kurnool, Vizagapatam, Guntur, Ganjam, Salem and Coimbatore. North Arcot district comes fifth in the above list based on acreage. Commercially, Tirupattur produce has a good reputation for its quality. It is therefore proposed to give a short account of how it is prepared for the market.

Red gram is grown in this taluk purely as a rain-fed crop, in red loamy soils mixed either with *cumbu* or ground-nut. Sowing along with *cumbu* is the common practice and this mixture occupies 90% of the total area in the taluk. When raised along with *cumbu* it is dibbled behind a country plough in lines 3 to 6 ft. apart; while, with ground-nut the distance between the lines varies from 10 to 25 ft., the reason being that the ground nut crop should be free from the shade of this crop.

By way of after-cultivation nothing is done to the crop, but when grown along with ground nut, the soil is dug for harvesting ground nut and this serves as a sort of after-cultivation. In some places where it is sown with *cumbu*, the land is reploughed and horse gram sown in September. The ploughing up of the field serves as a sort of after-cultivation.

Red gram sown during July–August will be ready for harvest in January. The crop is harvested by cutting the stalks close to the ground; the stalks are then gathered and left in the field for a day or two till they are quite dry and then removed to the threshing floor in the early hours of the morning, to prevent shedding of pods. Threshing is done by beating stalks with pods against bamboo *thatties*. The gram fallen on the ground is winnowed and cleaned. The immature pods that still stick to the stalks are beaten with sticks and gram collected. In a good year with a fair average rainfall, well distributed, an acre of red gram raised along with *cumbu* will give about 200 Madras measures of gram.

Preparation of Dhall from gram. Generally merchants purchase gram and prepare *dhall*, but in a very few cases *dhall* is prepared by ryots themselves, either for the consumption or for sale. There are two methods of preparing *dhall* from gram; (a) Large scale or commercial method. (b) Small scale or ordinary method.

(a) *The Commercial method.* Red gram is put in vats constructed of brick and mortar or tubs and allowed to soak in water for about 6 hours. It is then removed and well mixed with wet red earth in the proportion of 20 : 1, i.e., 20 parts of gram to one part of earth. The mixture is heaped and allowed to remain overnight. In the morning the heap is disturbed and the stuff evenly spread on the ground for thorough drying. If a single drying is not sufficient it is

dried again. When it is completely dried it is again mixed with a thin solution of red earth, heaped up and left over-night. In the morning it is dried completely. The gram is then cleaned of stones, dirt etc., by sieving and winnowing and broken in stone mills generally of 18" in diameter and 4" thick. The husk is winnowed, broken pieces separated and marketable *dhall* is obtained.

(b) *Ordinary method.* This method is slightly different, usually adopted by ryots for preparing *dhall* for their home consumption. This process involves much labour and time and the *dhall* obtained is of better quality and tastes well compared with the stuff prepared by the previous method. Red earth is made into a thin paste and poured over the heaped up red gram in small quantities at intervals of 45 minutes to one hour for a full day, mixed well with the gram and allowed to remain overnight. The heap is disturbed next morning and the gram well dried. Further process is the same as detailed in the commercial method.

In the commercial method more water soaks into the gram, makes it bulge, and when dried, the gram shrinks, becomes light and assumes a boat shape with a depression in the middle. In the ordinary method just the required quantity of water is given and therefore the *dhall* does not shrink but weighs more. It is more known as *Getti paruppu* (செட்டிப் பருப்பு) while the commercially prepared one is known as *Thotti paruppu* (தொட்டிப் பருப்பு).

In both the cases the process can be termed as a kind of malting. Red gram is allowed to absorb water, germination is encouraged and then suddenly cut off by drying the stuff. Though the method of preparation is the same in all the villages of the taluk yet the produce from Pallavalli, Elagiri, and Vellakuttai villages is preferred in spite of the fact that there is only one variety of gram that is grown all over the tract. That it gives different tastes if grown in different places shows that variations in soil conditions have a lot to do in determining the quality of *dhall*.

Economics of growing and preparing dhall. Since red gram is grown as a mixed crop, only a portion of the cost of preparatory cultivation should be debited (20% when grown with *cumbu* and 10% when grown with ground nut). The details are furnished in the table given below.

1. Cost of raising a crop of red gram and preparing dhall.

	Rs. as. ps.
A. Cultivation Expenses.	
(i) Ploughing the field 6 times with country plough at 6 as. per ploughing Rs. 2-4-0 (20% of this cost for preparatory cultivation).	0 7 3
(ii) Cost of 4 lbs. or 1½ m. m. of red gram and the labour charges for sowing 1 acre.	0 4 0

(iii) Cost of harvesting stocks, threshing and cleaning gram.	0	12	0
(iv) Kist per acre.	1	0	0
Total. ...	2	7	3
B. Cost of preparing dhal from the produce of 1 acre.			
(i) Labour charges for steeping, (contract), and drying for two days, for 200 Madras Measures of gram. ...	0	8	0
(ii) Labour charges for breaking and cleaning dhal. ...	0	8	0
Total. ...	1	0	0
2. Gross receipts from the proceeds of an acre.			
A. Cost of 200 Madras Measures of red gram @ Rs. 20 per Putty of 200 Madras Measures.			
Cost of one cart load of stalks	1	8	0
Cost of refuse, pods, leaves etc.,	2	0	0
Total. ...	23	8	0
B. (i) Cost of 175 Madras measures of dhal got from 200 Madras measures of gram at Rs. 30 per Putty.			
(ii) Cost of 9 Madras measures of broken dhal. ...	0	8	0
Cost of one cart load of stalks	1	8	0
Cost of 100 Madras measures of husk	3	0	0
Cost of refuse	2	0	0
Total. ...	33	4	0

Net Profit.

A. If sold as gram.		If sold as Dhal.	
Expenses ...	2 7 3	Income ...	33 4 0
Income ...	23 8 0	Expenses ...	3 7 3
Total.	21 0 9	Total.	29 12 9

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ABSTRACTS

Law relating to Rice Administration in Japan. By S. Nagai. (*Agri. Economic Literature, Vol. 8, No. 4.—1934*). The Japanese Government have been buying and selling rice to maintain and control the price, and necessary funds are provided for that purpose. In November last, a maximum and a minimum price was fixed and the Government are authorised to buy upon request from the producer, any quantity at the minimum price and sell to the public any quantity at the maximum price. Within these limits, the Government are also authorised to sell and buy rice with Current Market Price, in order to reduce the monthly fluctuations of the supply of rice. The "Rice Administration" has got a floating advance of 700,000,000 yen for the above purpose. The law also provides a tariff on foreign imported rice.

The major problems which confront the "Rice Administration" are to discover new uses for rice which will absorb some of the surplus, and also to increase exports to foreign countries.