

Curing Trials on Groundnut

by

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Introduction: Of the two million acres sown to groundnuts in the present Madras State nearly 90% of the area is in the rainfed season. Sowings are done in July—August with the receipt of south west monsoon rains and the crop utilises both the monsoons for growth and development. Harvest synchronises with the declining activity of the north east monsoon. Groundnut harvest is a big problem to the cultivators as ideal conditions are obtained possibly once in a few years. Without adequate soil moisture harvests become costly and inefficient and in rare cases the crop is altogether abandoned. When continuous wet weather prevails harvests are no doubt easy but adequate drying facilities are lacking and invariably the quality is affected. The groundnut crop is valued primarily on its quality as may be seen from the fact that while good quality produce fetches Rs. 150/- per candy of 531 lb. to-day, poor quality produce is offered Rs. 90/- or even less per candy. Quality is mainly influenced by the stage of maturity and the post harvest handling of the produce.

The harvesting practices commonly adopted by the ryots vary with the tract, the variety cultivated and the seasonal conditions prevailing. In Pollachi for example bunch groundnut comes up for harvest in July-August. Heavy south west monsoon rains are usual at the time and harvests have to be taken up as the crop reaches maturity to prevent losses by field sprouting. Adequate drying facilities are not available and the produce from the tract is generally of poor quality. In the bunch tract of North Arcot district on the other hand, harvest comes about the middle of November. Absence of heavy rains and adequate facilities for drying result in good quality produce. In Guntur District of the Andhra State the bunch crop comes up for harvest in September - October. There is dearth of labour and immediately the bunch groundnut crop is harvested, it is stacked in the field itself for 2 to 4 weeks. Stripping of pods by beating with flails is taken up after the plantings of chillies and tobacco are over. By this time the produce gets well dried and cured and the out-turn is of very good quality.

In the case of the spreading groundnuts, harvesting is a difficult operation as the pods are formed all along the procumbent branches. Adequate soil moisture is essential for efficient harvest. When moisture is a limiting factor the harvest is very costly and also inefficient because a large quantity of pods is left behind necessitating picking from the soil after one or two ploughings or harrowings in extreme cases. The chances of receiving rain at the optimum time when the crop is fully mature are so uncertain, that a majority of cultivators commence harvest with the receipt of rains even if the crop has not fully matured. This defect is particularly common with small agriculturists with limited resources. The harvested plants are immediately stripped and the produce dried for the two or three days and disposed off to middlemen merchants. The immature harvests and subsequent defective handling impair quality. The well-to-do ryots pay a little more attention to quality and reap the benefit of higher prices.

In countries like America curing is a common feature. The crop after mechanical harvest is stacked around a pole with the pods inside. The stacks are small and commonly spaced in the field itself. They are allowed to stand for about 4 to 8 weeks after which the pods are separated with the peanut picker. The system of curing is reported to yield a superior quality produce. An alternative practice of leaving the harvested produce in neat rows in the field itself for curing is also done by some cultivators. Stacking in the field without any support as well as stacking in shade are also in vogue in some countries.

Materials and Methods: With a view to study the effect of curing fully mature and near mature crop of groundnut on the quality of the produce an experiment was taken up at the Agricultural Research Station, Tindivanam in 1947-'48 and continued till 1954-'55. During the years 1950-'51, 1951-'52 and 1952-'53 due to failure of the seasonal rains plants dried and therefore the different methods of curing could not be tested. The following treatments were adopted on TMV 2 bunch and TMV 1 spreading strains.

I. *Harvested ten days before maturity:*

- (i) Pods stripped immediately.
- (ii) Stacked around a pole.
- (iii) Left to dry in the field.

II. *Harvested when fully mature:*

- (i), (ii) and (iii) treatments as above.

In treatment (i) the plants were stripped immediately after harvest and the pods sun dried for about a week. In item (ii) the plants were stacked around a pole on cross rods of about 3 feet length and a foot above ground level. The pods were in the centre of the stack and the top of the stack was given a slope and covered with haulms to prevent rain water entering inside. The curing was continued for ten days at the end of which the pods were stripped. In item (iii) the plants were allowed to cure spread in the harvested field itself and stripped at the end of the ten days. In both these cases the produce required only 3 or 4 days dryings after curing. The produce from the different treatments was analysed for quality, consisting of percentage, natural test weight of one Madras Measure (108 cubic inches) of pods and kernels, number of kernels per pound and oil and free fatty acids content.

Results: The averages of the data collected for four years from the quality studies on the produce under different treatments, are given below:

*Quality analysis of produce from curing trials
(Average for four years)*

Treatment	Shelling percent- age	Natural test weight (in gms.) of one M. M. of		No. of Kernel per lb.	Oil content %	Free fatty acid content %
		Pods	Kernels			
TMV—2 Bunch groundnut:						
<i>I Harvested before ten days of maturity.</i>						
Immediately stripped	76.6	635	1310	1313	47.91	0.50
Stacked around a pole	75.2	634	1305	1314	41.38	0.34
Dried in the field	73.2	629	1296	1296	47.94	0.04
<i>II Harvested when fully mature.</i>						
Immediately stripped	78.0	661	1308	1276	49.16	0.42
Stacked around a pole	76.7	660	1319	1319	47.93	0.39
Dried in the field	76.8	647	1313	1271	48.25	0.44
TMV—1 Spreading groundnut:						
<i>I Harvested before ten days of maturity.</i>						
Immediately stripped	72.2	595	1197	952	50.65	0.34
Stacked around a pole	71.8	591	1217	950	51.71	0.50
Dried in the field	70.9	568	1177	959	49.97	0.91
<i>II Harvested when fully mature.</i>						
Immediately stripped	73.9	612	1222	931	50.12	0.53
Stacked around a pole	72.1	594	1202	933	50.41	0.48
Dried in the field	72.3	607	1224	936	50.53	0.84

Discussion : The results show definitely that the quality of the produce harvested at full maturity is better than in the lot harvested ten days before maturity in the case of both varieties. The former treatment gives better shelling, higher natural test weight of both the pods and kernels with lower number of kernels per pound showing better development, as compared with the latter. In both the varieties best quality produce is obtained by stripping the pods immediately and drying them, while the produce from plants left to dry in the field is poorest. The drying in this case is not as efficient as when the pods are immediately stripped and dried. A small increase in the oil content is noticed in both the varieties in the cured produce from the stack and this is more evident in the lot harvested ten days prior to full maturity.

Summary and Conclusion : Harvesting the crop when fully mature and stripping the pods immediately and thoroughly drying them subsequently, yield the finest quality produce. Even if the crop has been harvested a week or ten days prior to maturity, stripping the pods immediately is preferable to the other two methods studied. The necessity to cure the crop arises only when there is acute labour shortage and possibly also when rainy weather prevails. Curing by stacking is recommended in such cases as the resulting produce is superior to allowing the plants to dry in the field. The latter method may result in loss or damage by birds and rodents. Besides a few pods in contact with the soil will get damaged especially if there is a heavy rain during the period. In the case of the bunch variety loss by field sprouting also occurs.

Common Salt as Fertiliser

by

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As the very name indicates common salt is quite a common substance which is both cheap and abundant. Its use as an item of man's daily dietary is well-known and widespread, but what is not so widely known is its use as a manure in agriculture. Salt is mentioned as a manure in the Bible, and by Roman poets like Virgil and Cato. English farmers of the 16th, 17th and 18th centuries as well as German and Spanish farmers were also well aware of its use as manure, but still, at the present day it is difficult to find another fertiliser, the utility of which is so hotly disputed, as common salt. Even as early as 1805 salt was recognised as very useful manure, particularly for turnips, sugar beet and mangolds and also for wheat in potash-deficient soils. Subsequently the use of salt fell