

## Increase in Pulses - an imperative necessity\*

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Among the different kinds of food, it need hardly be emphasised, that pulses have an important role. For, in the diet of every Indian, Pulses constitute one of the important sources of protein food, supplying the necessary materials for building the body and repairing the waste tissues. Therefore, our Province can ill-afford to be in deficit of the required quantities of different pulses for consumption, nor can it look to other Provinces for help. The immensity of the problem is indicated by the fact that for a consumption of 5,83,450 tons of pulses, the average production has been 2,70,600 tons per annum leaving thereby a deficit of 3,12,850 tons. In other words, the production is only 46.4% of the requirements of the population and so more than half the quantity of pulses required has to be imported from outside. Against such a huge shortage, the coastwise import of pulses during 1946—47 was 30,228 tons, while no pulse of any kind was received from foreign countries. To be more specific, it might be stressed, that the deficit in production of the three chief pulses, Redgram, Blackgram and Bengalgram should be made up quickly in all possible ways.

**TABLE I.**  
Showing the annual consumption and production of pulses in the Province.

Names of Pulses.	Consumption in tons. (In round figures)	Production in tons.	Deficit in tons.
1. Redgram	1,22,500	39,300	83,200
2. Blackgram	63,100	34,350	28,750
3. Bengalgram	1,84,000	12,200	1,71,800
4. Greengram	60,400	44,900	15,500
5. Horsegram	1,25,000	1,15,400	9,600
6. Other pulses	28,450	24,450	4,000
<b>Total</b>	<b>5,83,450</b>	<b>2,70,600</b>	<b>3,12,850</b>

**TABLE II.**  
Area under pulses and production per acre.

Name of pulses.	Area in acres.		Yield per acre in lb.	
	Normal	1946—47.	Normal	1946—47.
1. Redgram	3,37,080	3,63,021	339	257
2. Blackgram	2,91,510	2,96,592	305	255
3. Greengram	5,06,250	4,72,739	240	192
4. Bengalgram	65,300	1,00,432	377	164
5. Horsegram	15,48,870	14,42,995	170	160
6. Other Pulses	2,55,910	2,59,744	—	—
<b>Total</b>	<b>30,04,920</b>	<b>29,35,523</b>		

\* A Paper read at the 31st College Day and Conference, July 1948.

A glance at the table will convince any one, that the yield figures both normal and actual are not high and are capable of improvement. Also, the area under each of the pulses is small except in the case of Horsegram, which occupied a little more than half the area under pulses in the Province. Any improvement brought about, in either of the above directions, would raise the stock of pulses and aid in solving the food shortage. In this paper an attempt will be made to place before you, some of the lines of work, that could be pursued to improve the stock of pulses.

Since the increase of the stock of pulses is associated with (a) yield per acre (b) area grown with each kind of pulse and (c) cropping practices, the problem will be reviewed from each of these aspects.

(a) Yield of pulses per acre. The yield of any pulse could be enhanced by the growing of a high yielding strain of the particular pulse, in the place of local seed. But, such an increase in yield cannot be brought about overnight, as it requires years of patient work and testing under conditions of growth pertaining in each tract or zone. Foreseeing the time and labour required, the Madras Government started the scheme of Improvement of Pulses five years ago, with the main station at Coimbatore and two small Sub-stations at Salem and Vizianagaram. As a result of the work of these stations for five years, cultures, which yield more than the early released strains in Redgram, Horsegram and Lab-lab, are in their final stages of yield trials on the Research Stations. They will be issued for general cultivation in a couple of years, after testing them for their suitability under ryots' conditions in the different districts. In addition, the cultures of second and third batch of selections are in various stages of trial.

Alongside, the three strains of Redgram 1,723, 2,900 and 3,009 released by the Cotton Specialist are being multiplied and issued for general cultivation. In Salem District, strain 2,900 was grown last year over 40 acres and this year, the seed farm area has been raised to 400 acres to reach the target figure for seed in the shortest time possible. The use of this Redgram strain is bound to increase the yield per acre by 100 lb. at least. Again, the three strains of Bengalgram from Cotton Specialist are multiplied and issued to cultivators. Last year 3,200 lb. of Bengalgram strain 482 was sent to the District Agricultural Officer, Anantapur, and this was multiplied over 100 acres round about Anantapur town. The seed gathered is programmed to be grown in seed farms in the districts of Bellary, Cuddapah and Anantapur over 130 acres this year for the production of seed, with the kind co-operation of the Deputy Director of Agriculture, Cuddapah and the three District Agricultural Officers of the districts.

(b) Area grown under each of the pulses. *Blackgram*: Blackgram is grown in drylands and also in wetlands after paddy, as a catch crop between two paddy crops. The average area under this crop is 2.96 lakhs of acres with an yield of 34,340 tons, leaving a deficit of 28.75 thousand tons. This shortage could be made up to a large extent, by increasing the area under Blackgram in districts, where wetlands are in abundance, by inducing the ryots to put more area under Blackgram after paddy than before. If the wetland cultivators of Vizagapatam, East Godavari, Kistna, Tanjore, Tiruchirappalli, Tinnevely and South Canara could be made to sow in wetlands, two acres of Blackgram, where there was only a single acre before, the shortage of Blackgram, could be made up to a great extent. Out of a total area of 46 lakhs of acres of wetlands in these 7 districts, it should be possible to have at least 4 lakhs of acres under Blackgram after paddy. What is required is the desire on the part of the cultivators to grow more area under Blackgram than before.

*Greengram*: Compared to Blackgram, the shortage of Greengram is not much. The deficit of 15,500 tons could easily be made up by getting more area under this crop, as it is also grown as a catch crop in wetlands like Blackgram.

(c) Change in cropping practices. *Redgram*: The Ceded Districts, East Godavari, North Arcot, South Arcot, Tinnevely, Salem and Coimbatore grow large areas under Redgram. Various mixtures are adapted in these districts, but the most common one is to grow Redgram with Groundnut as a mixture. In South Arcot and Salem, the rows of Redgram are spaced 5 to 6 feet apart, while in other districts, the lines of Redgram are put 10 to 12 feet from each other. Usually the ryots use the creeping variety of Groundnut of 4½ months duration, in between the lines. But where the rows are closer, an erect variety of Groundnut is used. When the cultivators in North Arcot were advised to have lines of Redgram closer and replace the creeping variety of Groundnut with bunch variety, they said, that bunch variety not only yields less but has a lower oil content than the creeping Groundnut. The answer to these objections is that the low yield of bunch variety will be made up in money value by the extra yield of lines of Redgram, which get doubled in number, when bunch Groundnut comes in. Further, the bunch variety, which takes 3 months to mature, can be removed from the ground by the end of September and the inter-spaces between Redgram, could again, be utilised for growing a crop of Horsegram. This crop and the extra lines of Redgram are sure to make up and even outweigh the loss entailed in growing the creeping variety of Groundnut. The difference in oil contents between the two varieties of Groundnut is only 1 to 2% which is negligible.

Fortunately, the recent trials of the spacing of Redgram lines in a mixture with creeping variety of Groundnut by the Oil Seeds Specialist,

Coimbatore, have shown that the utmost monetary return could be had only when Redgram lines are put 6 feet apart with this variety also. Considering all these, it may safely be recommended (i) that the cultivators be encouraged to use bunch Groundnut with lines of Redgram 6 feet apart and grow a crop of Horsegram as a second catch crop after Groundnut and (ii) that in places where creeping variety is used, the Redgram lines have to be spaced 6 feet apart for high return and not to put them 10 to 12 feet as is being done now. Such a spacing of Redgram will considerably increase the area under the crop and thereby the output of Redgram stock also, as over 3.3 lakhs on an average are put under this mixture of Redgram and Groundnut in the Province.

Another method of increasing Redgram stock is to induce ryots, especially garden and wetland ryots, to grow Redgram along water courses and channel bunds, in addition to field bunds, as is done in Anantapur and North Arcot Districts. The short duration variety of Redgram from Tenkasi of 4 month's duration will fit into this programme well.

*Bengalgram*: Bengalgram is generally grown in Black Cotton Soils, where dew could be had in plenty during the growing period of the crop. So, its cultivation is confined mainly to the five districts of Guntur, Kurnool, Bellary, Cuddapah and Anantapur, where the crop commands normally 46,500 acres out of the total 65,000 acres for the whole Province. In 1946—47 the area went up to 70,000 acres, as against 1,00,432 acres for the Presidency. Though the acreage under Bengalgram has gone up by 32,523 acres, there appears to be scope for further increase under this crop. The *hingari* crop of cotton is generally grown mixed with *Tenai* or *Korra* in lines over 8,74,100 acres on an average, in all the above districts. Let each ryot, reserve, a fourth of the *Korra* area and sow Bengalgram by the close of the North East Monsoon i. e., the end of October or even by the beginning of November. Then it is certain, we have another lakh of acres under Bengalgram. The area under *Korra* in these five districts is on an average 14.2 lakhs and taking away a slice of one lakh for such an important pulse as Bengalgram will not alter or disturb the stock of *Korra* very much. Further, let each ryot sow one or two lines of Bengalgram at the headlands of his fields cropped with cotton in the Ceded Districts and the aggregate area would be enormous. It is also necessary, in view of the huge deficit of Bengalgram, to make every ryot in Ceded Districts and Guntur to have one acre of Bengalgram after Cumbu or another early sown crop in his holdings.

In brief, the possibilities of increasing the area under pulses and thereby improve the total stock, have been indicated in a general way. The exact working of each of the innovations suggested, should be designed on the spot to suit particular conditions of growth.