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More Money from Vegetables on Drylands

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Vegetable cultivation is common in the neighbourhood of cities and towns under lift irrigation and this may be termed as commercial farming on intensive lines. The possibility of growing vegetables on a remunerative basis under dry farming conditions either on commercial or intensive lines, has not been thought of previously. Therefore it is of great interest to know that in Guntur Taluk there is a tract comprising four or five villages which grows vegetables of the common types on a field scale under entirely dry conditions. This tract is about 5 to 7 miles equidistant from the towns of Guntur and Tenali and the total area under vegetables grown in this manner is said to be nearly 2,000 acres. It is evidently a fruitful combination of climate (rainfall), soil and market that has been responsible for this new and interesting system of farming.

The climatic conditions. It must be admitted that the distribution and amount of rainfall is more favourable in the Guntur tract than in many other dry tracts situated elsewhere. It was pointed out in a previous article by the author, how this feature has helped in the raising of very good crops of millets, chillies, tobacco etc., almost equal to garden crops, under dry farming conditions. ('Climate and crop production in the Guntur black soils' M. A. J. September 1940). With an average of 15 inches of rainfall for each of the South-West and North-East Monsoons and 5 inches for the summer period, it has been demonstrated by the ryots themselves that it is possible to grow many of the common vegetables such as brinjal, beans, bitter gourd, cucumber etc., on a field scale in large areas and get a net return of about Rs. 300 to 500 per acre.

The soil. Two types of soils can be distinguished in this tract, the black and the red, though the former may cover more area. Both kinds are fairly deep and highly fertile and retentive of moisture. The rotation of cropping is different in the two types of soils. The secret of success lies in the following factors. 1. Adequate and well-distributed rainfall; 2. Retentive soil responding well to manuring; 3. Good markets being situated nearby.

Rotation of cropping. It is just possible that this system of cultivation was tried on a small scale during the pre-war period, about a decade back. The high prices prevailing in the later years might have given a great fillip to this practice which has extended itself remarkably and which should have naturally disturbed the previous rotation of crops with millets, chillies and tobacco. Though these crops are not entirely excluded in the present rotation, they occupy less important places

compared to the newcomers, which almost dominate the scene any time of the year. However, the present system of rotation in both kinds of soils appear to be good enough as they have been fixed from experience gained in previous years, to suit the conditions of the market and the economic needs of the cultivator. As for the actual rotation, the following order of cropping is generally followed. In the black soils in the first year, brinjals and country beans, or bittergourd, or snakegourd; in the second year, cumbu or groundnut; in the third year, chillies or variga or tobacco. In the case of the other type of soil, in the first year cucumber (*Dosaikkai*) and in the second, groundnut. There are other minor crops like maize and tomato which may also be cultivated on small areas interspersed in this rotation for the fodder needs in one and quick returns in another.

Labour. As is common everywhere in the Province, this is also a tract of small holders. Each cultivator owns a pair of work bullocks and utilises his own and his family labour largely. Many do not employ casual labour at all. This of course accounts for the large net return obtained by them. Each one also owns a cart which is utilised to cart the produce to the town market as often as is necessary. Some of the owners have also taken up more areas for cultivation on lease and the number of pure tenant cultivators may be negligible. In general, labour is available and the rates of wages are not higher than elsewhere in the neighbouring tracts. Under the conditions of this type of commercial vegetable farming the owner cultivator alone can succeed to keep up the high level of profits.

Seasons and special features. The two important seasons of planting are June–July and October. These correspond to the starting of the two monsoons respectively. After planting of the seed or seedling as the case may be, a few waterings are given from the small ponds found in each holding, one or more, which store water by springs as well as by rain water flowing into them. In the later stages, even if water is available in these ponds, watering is not resorted to as it may not be necessary or irrigation costs often become so high as to be prohibitive. For the country bean and snakegourd creepers, continuous and extensive pandals are erected with bamboos and coir rope, which means great initial cost. But the bamboos are used for three years or more. Minimum intercultivation is given and fields particularly under country beans were found to be quite weedy. The planting time and duration of the more important vegetables are given below.

Vegetable.	Planting time.	Duration.
Brinjal	June	3½ months.
Country beans	September	6 ,,
Bittergourd	October—Dec.	7 ,,
Snakegourd	October	6 ,,
Cucumber	June and Oct.	3 ,,

Manuring. The importance of adequate and proper manuring has been realised by the cultivators, but owing to the nonavailablity of cakes and artificials a regular scheme of manuring has not been established. However a basal dressing of about 5-10 tons of farmyard manure is the rule for most of the vegetables. Sheep-penning is also done at about a thousand sheep per acre. Groundnut cake has also been applied in recent times and the results have been very encouraging. If available, ammonium sulphate is applied to snakegourd and some special watering is undertaken. Orthodox agronomists would not reconcile themselves to the fact that it is possible to utilise fully heavy doses of manure in these soils without adequate irrigation. It is the retentive soil and the well distributed rainfall that makes this possible. By a regular application of the organic manures the fertility level of the soil has been not only kept up but has also improved year by year.

Marketing. The produce is sent to the town market in the cultivators' own carts everyday. During the peak season it is estimated that as much as four tons of vegetables may reach the markets, daily. Individual marketing is the rule at present, but quicker transport and co-operative marketing have to be developed as early as possible so that dryage and wastage may be eliminated and larger returns secured to the grower.

Profit from an acre It will be interesting to work out the average profit per acre of some of the vegetables so as to compare with those obtained elsewhere under irrigated conditions or other crops grown under dryfarming conditions. The following statement gives the cost of production according to the different stages of field operations and the net return per acre.

Datail of operation.	Country beans. Rs.	Brinjals. Rs.	Bitter-gourd. Rs.	Snake-gourd. Rs.	Cucum-ber. Rs.
Preparatory cultivation ...	...	30	30	30	30
Seeds and Planting ...	10	15	15	15	15
Special Expenses (Pandal)	100	...	...	100	...
Manuring ..	10	40	30	30	30
After cultivation ...	5	40	30	10	30
Harvesting ...	100	30	30	30	30
Total cost of cultivation ...	225	155	135	215	135
Gross return per acre (approximate) ...	800	350	450	600	350
Net return per acre ..	575	195	315	385	215

The cost of production noted above includes labour charges of own and family labour. Hence considering actual receipts in cash the net return is likely to be more. This is a noteworthy feature in the economics of this farming.

It is commendable that the ryots of this tract have shown considerable enterprise in having evolved successfully what may be termed commercial farming of vegetables on extensive lines. It may be argued that if prices of vegetables in the town markets fall very low the high profits now realised may not be obtained. Prices of vegetables will go down only when there is considerable increase in the production as well as extension in the area under cultivation in the neighbourhood of towns and cities. This cannot happen in the near future since the limiting factor for further development is greater availability of irrigation resources. But it can be shown that even if prices of vegetables come down, it may still be possible to obtain very resonable profits in this kind of farming, because of the low cost of cultivation. The comparison of profits from vegetables is to be really made with those obtained from raising of the usual crops of tobacco or chillies, the cost of cultivation of these being much higher. It may however be envisaged that if prices of vegetables fall to near about pre-war level, the area under vegetables may have rapid reduction from year to year.

There may be tracts in other districts such as Nellore and Chengelpet in the East coast, situated adjacent to towns, where vegetable growing on drylands may be a profitable propostion. But in these districts the benefit of both the Monsoons is not always available. It is a matter of trial by local enterprising ryots to see whether they cannot get very much more by raising common vegetables and marketing in the nearest town, rather than from the usual crops or millets or pulse or dry paddy etc., in the rotation. It is again, a question of how best one is able to combine profitably in a given tract, the three factors already mentioned, viz., climate, soil and market.