

## Potato Cultivation at Kodaikanal *A Survey - Possibilities for Extension*

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**Introduction :** Potato, is raised only over a limited area in this State. Practically the entire extent is confined to the higher plateau of the Nilgiris, amounting to about 19,500 acres, while the balance of 600 to 800 acres is located at Kodai hills and the Shevaroy's of the Madurai and Salem districts.

This crop, which returns an average acre yield of nearly 10,000 lb. deserves further extension in view of its quick growth, high yield and nutritive value and ready response to cultural and manurial treatments. In recent years, fairly successful crops of potato were raised under irrigation. In certain parts of the State outside the Nilgiris, where the temperature range is between 60°F to 90°F during the winter period. (November-February). Even leaving such possibilities in the plains out of account, there are many hilly regions with mild climate and well-distributed rainfall, where its cultivation can be taken up with profit. Among these Kodaikanal shows rich promise.

This article presents briefly the information gained on the subject during a recent tour of survey and study of potato cultivation at Kodaikanal.

**Location :** Considered by many as the most beautiful hill station in South India, Kodaikanal stands at a height nearly of 7,000 feet above sea level on the Palni hills. Originally, this formed a retreat for the early settlers, chiefly European missionaries, and later it developed into an independent taluk of Madurai district, separating itself from Periakulam. It is surrounded by the taluks of Palni on the North, Periakulam on the South, Dindigul on the East and skirted by Udumalpet and United States of Travancore and Cochin on the West.

**Area :** The total area of 53,700 acres of the taluk is distributed as follows :

Forests	...	...	17,500 acres.
Not available for cultivation	...	...	3,500 do.
Other uncultivable land excluding			
current fallows	...	...	8,300 do.
Current fallows	...	...	1,650 do.
Net area sown under different crops			22,700 do.

Total 53,650 acres.

The area under potatoes was recorded as 200 acres in 1945, the area during the 1951 season being 505 acres. Considering the favourable factors of soil and climate, there is very good scope for an extension of the current meagre area. In fact, under the present context of food scarcity, there is every need to augment the area by vigorous extension measures, as the natural spread has been too tardy for such a profitable, not-very-difficult-to-grow and early crop. It may be stated here that the Agricultural Research Station, Nanjanad was mainly responsible for the spread of potato cultivation in the Nilgiris from an initial area of about 500 acres, to the present extent of 20,000 acres, covering three distinct seasons. It should be easily possible to duplicate this result at Kodaikanal.

It is suggested that, with the use of parent seed material from the Nanjanad Research Station, primary seed farms may be started at Kodai and the produce recovered departmentally, to extend the area. In this way, a large extent of suitable land may be covered in the course of a few years. Potato is a recent introduction and, with publicity, the area should fan out beyond measure.

**Climate:** Seasonal conditions at Kodaikanal would appear to be very favourable for potato. Both the North-East and South-West monsoons contribute an average annual rainfall of about seventy inches, inclusive of summer showers. Frost is not a major problem and, in view of the heavy North-East monsoon rains, even long-term varieties can be raised during the second-crop season, which in the Nilgiris admits of only early varieties.

**Soil Conditions:** In general, fertile soils are available in the region. Nearly 60% of the area consists of light, red loams, while the rest are made up of black and peaty soils, rich in humus content.

**Season:** At present, as in the Nilgiris, rain-fed potatoes are confined to two distinct seasons. The main crop (*Kar bogam*), which occupies 70% of the total crop area, is raised between April and August and the second crop (*Adi bogam*), between October and January.

**Rotations:** The common one-year rotation is potato, followed by garlic. Over scattered areas, a two-year rotation viz., potato, then a cereal like wheat, followed by garlic, is taken.

**Seed Material:** No specific variety is used. Most of the cultivators get their requirement of seed from the freshly harvested ware, marketed by merchants at Mettupalayam or Bangalore. The value of good seed for optimum yield being an accepted fact, it should be brought home to the growers in this region. Seed should conform to a specific, known and tested variety, to ensure good yields, quality and freedom from disease. At present, the main crop produce supplies the seed for the second crop and vice versa.

(a) **Cultivation Details:** *Preliminary cultivation.* The soil is opened up by mamooty, which implement is used for all the subsequent operations of ridging, covering, and interculture and harvest. Small terraces, six to twelve feet in width, are made by clearing new lands for raising the crop.

(b) **Planting:** Tubers of all sizes are planted indiscriminately inside furrows spaced  $2\frac{1}{2}$  feet apart, ranging from very small chats ordinarily unfit for seed, to big-sized table tubers the use of which is definitely wasteful, as proved by trials at Agricultural Research Station, Nanjanad.

(c) **Manuring:** Cattle manure, applied at five to ten tons per acre, is the common practice. Except for very stray and unplanned use of artificials, this is the rule. An urgent change is necessary in this regard, especially when one considers the indifferent way in which the ryots usually store the dung and litter, without proper covering and preservation.

Among all food-crops, probably none can equal the potato, in regard to quick and striking response to manuring. The ever-increasing popularity of the "Nanjanad Mixture", in the potato belt of the Nilgiris, stands out for evidence. Presumably, the Kodai soils are rich, since they are currently yielding five-fold, even without fertilizers. Layout of demonstration plots, to prove to the ryot the huge profits possible by manuring will certainly result in a quick spread of the acreage.

While on the question of manures, the best thing to start with would be the introduction of green manures in the rotation. Blue bitter lupins have been found admirably suited for the seasonal conditions and the elevation of the Nilgiris and should answer equally well at Kodai, as the ideal green manure crop for potato, improving, as they do, the soil condition and crop yields.

**Yield:** The present acre yield ranges between 4,000 and 5,000 lb. The tubers are lifted by mamooty, resulting in a large percentage of rejects, which depresses the market value of the ware. The use of bullock-drawn lifters, to open the soil and expose the tubers, enables a quicker, better and cheaper method of harvest.

**Diseases:** The crop, is usually subject to virus diseases, though the severity of infection is low. Plant protection measures and the use of selected seed should overcome the loss in yield on this account.

**Cost of Cultivation:** The expenses incurred by the cultivator and the returns obtained are as follows:

<i>Charges per acre.</i>			
<b>Preparatory Cultivation.</b>			
	Rs.	As.	Ps.
Opening land : 40 men @ Re. 1—8—0 each	60	0	0
Laying out ridges and furrows ; 30 men	45	0	0
Total	105	0	0

<b>Seeds and Sowing.</b>		Rs.	As.	Ps.
40 Maunds of seed @ Rs. 6/- per Md. (25 lb.)		240	0	0
Planting and covering: 20 men @ Rs. 1-8-0		30	0	0
	Total	270	0	0
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<b>Manures and Manuring.</b>		Rs.	As.	Ps.
Cost of 10 cartloads of cattle manure inclusive of transport	Total	40	0	0
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<b>After Cultivation.</b>				
Three instalments of earthing up, after weeding, 40 men at Rs. 1-8-0 each	Total	60	0	0
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<b>Harvest.</b>				
20 men @ Rs. 1-8-0 each and 10 women @ Rs. 0-12-0 each	Total	37	8	0
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Cost of Cultivation	Grand total	512	8	0
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<b>Receipts.</b>				
Average yield of 200 maunds of 25 lb. each @ Rs. 4/- per maund		800	0	0
Less total charges		512	8	0
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Net profit per acre		287	8	0
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Even with the present indifferent factors in cultivation like absence of good seed and labour-saving implements and lack of manuring, the ryot is able to secure nearly Rs. 300/- per acre as profit. This return can be considerably stepped up with the improvements indicated.

**Acknowledgement.** My grateful thanks are due to the Director of Agriculture, Madras, for the grant of a tour of study, to the Agricultural Demonstrator, Kodaikanal, for the help and facilities afforded, and to K. Satharishi, Superintendent, Agricultural Research Station, Nanjanad, for his help in the preparation of this article.