

## A Horticultural Programme for the Irrigation Project Areas

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**Introduction:** Horticulture is defined as the cultivation of plants for consumption or ornament, as distinguished from field crops, sylviculture or forestry; Hortus meaning garden and culture being cultivation, by horticulture is meant cultivation of garden crops.

While there are several schemes to increase the area under cereals, and some mention is discernible for increasing the area under vegetables, a comprehensive plan is still to be worked out for the development of fruit crops, which alone in the opinion of the author can effectively help to solve the food crisis. However, it will be only ignoring the facts, if fruits are intended to replace the cereal diet. The aim is only to supplement and not to substitute the normal diet. Fruits being appetisers and health promoters, the horticultural approach alone can provide a lasting solution to the devitalising food deficit. In preparing this paper the author has freely drawn information from several published and unpublished records. The paper deals mainly about fruit crops, as regards their importance, their responses under different environments and the possibilities for their extension, particularly in the irrigation project areas.

**Data and findings:** Dr. Akroyd prescribed the following formula as a well-balanced diet to supply 2600 calories to an average adult:

Rice	...	10 oz.	Nonleafy vegetables	...	6 oz.
Millet	...	5 oz.	Green leafy "	...	4 oz.
Milk	...	8 oz.	Fats and oils	...	2 oz.
Pulses	...	3 oz.	Fruits	...	2 oz.

Working on the above basis and referring to the actual cultivated area and yields the "Eastern Economists" (1944) arrived at the conclusion that for balanced food the following increase in existing production is the minimum:

Food stuff	Percentage increase required	Food stuff	Percentage increase required		
Cereals	...	10	Fats and oils	...	250
Pulses	...	20	Milk	...	300
Fruits	...	50	Fish and eggs	...	300
Vegetables	...	100			

The area under fruits and vegetables in the year 1947—48 is given as 8 lakhs of acres. As per figures given above the area has to be increased approximately by another four lakhs to meet the deficit in fruits alone. In the matter of food grains the deficit as already noted is 10% or 4 million tons. This deficit can to a great extent be made up with fruits and vegetables. As these two commodities are already lacking in the diet and intake of grain food can be reduced, extended cultivation of these two types of foods deserve consideration on the following grounds also:

- (a) Besides under-nutrition people suffer from mal-nutrition on account of the deficiency of minerals and vitamins in their diet. Vegetables and fruits meet these needs;
- (b) Maximum outturn per unit area can be obtained by cultivating fruits and vegetables;
- (c) Total calories required to maintain normal health by taking cereals can be reduced to nearly 50%, if admixed with sufficient fruits and vegetables.
- (d) Depending on the nature of fruit crops more area can be commanded with the same water given to an acre under paddy. Thus the available water can be utilised for increased return in the shape of food.

Even under purely rainfed conditions as in West Coast and hilly regions of lower Palanis, Nilgiris and Shevaroy's very good yields are obtained from fruit trees. Besides extending the area under fruits in such places to augment production, the irrigation projects deserve due consideration in view of its potentiality. Alexander Joss of "the Bureau of Agricultural Economics, U. S. A." states "benefits from irrigation arise only through increased production which the irrigation water makes possible. Benefits may be large or small depending on crop responses. They tend to be highest in extremely arid regions and to approach zero in areas where the rainfall meets the optimum needs". Canals, wells and tanks or the three sources of irrigation mainly tapped. Under irrigation projects canal irrigation alone is taken up for consideration.

The situation resolves to the selection of compact areas for fruit growing and choice of fruit plants suited to the site. The areas can be;

1. Cultural wastes in the vicinity of irrigation projects to which water can be pumped for orchard enterprises. It is already reported that 94% of water flowing in rivers runs to waste and though this may happen during monsoons, setting up irrigation in a dry area will help to raise water table and wells can be tapped in such areas to supplement project irrigation. Further, in projects catering mainly to paddy

cultivation only gravitational flow is thought of. For fruit trees water can be pumped and as only few irrigations are required in a year, this is a feasible proposition.

2. In the new projects and in old projects high level blocks adjoining the projects can be located for orchards.

3. Even in the projects, certain branch canals can be set apart to serve fruit cultivation taken up at higher levels. This will also facilitate increasing available supply in other canals for a double crop of paddy where now only single crop is taken, even by extra fertilising those lands. This allocation and zonal system of fruit cultivation is possible especially in the projects like Cauvery-Mettur project.

However, in selecting soils for fruit cultivation, the following five conditions are pre-requisites :

1. A site with minimum depth of soil of at least six feet of uniform texture not ingrained with impervious layers of rock or hard substratum and neither too open nor too stiff to hinder root development ;

2. The water table of the site should not rise within six feet of the surface soil even in the wettest period of the year.

3. Availability of a perennial and plentiful supply of sweet water for irrigation ;

4. Wind-swept sites should be avoided, but when they are inevitable, the site may be well protected by barriers such as thick wood belts.

5. Nearness to the road and preferably to a railway station is a point of no mean value in the establishment of a fruit farm.

Further, locating sites for fruit cultivation near or in projects demand careful consideration, for ensuring adequate drainage without which the venture will only lead the grower to grief. The decline of *Vadlapudi* orange in the Bezawada tract is attributed mainly to the high water table and ill-drained conditions. In places where adverse conditions as high water table or lack of irrigation facilities during certain periods can not be avoided, plants suited to such conditions are to be chosen.

From site selection to marketing of the produce the growers should be given assistance not only financially through co-operative concerns but also technically by organising well-equipped field workers drawn from the horticultural training course who will help to translate the results of fruit research in the field. Government or licensed nurseries should operate to meet the needs for plants.