

## The Horticultural Approach in Maximising Food Production

By

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**Introduction :** Any agricultural policy for maximising food production should draw its inspiration, not from the accidents of temporary food shortages but from fundamental concepts of human nutrition. In the shaping of a food plan for the Indian Union we should distinguish two aspects that have gained clear recognition at the hands of nutrition experts. First, of course, is the need for providing the requisite amount of calories which supply the needed energy for people of different ages and in different avocations in life. Second is the introduction into the diet of an adequate quantity of protective foods which are indispensable to keep the human body free of illnesses traced to ill-balanced food. As Sir John Orr put it in that documentary film 'The World of Plenty' "It is not enough to eat more food—it is the kind of food that matters most" Governments today are assuming greater and greater responsibilities for the regulation of agricultural production, and the shape and hue which agricultural industry takes under such direction should make the fullest use of what scientific facts have to offer. Into a pattern of that kind, therefore, a purely unregulated agriculture weighted wholly in favour of calorie-yielding food crops will no longer fit. Modern agricultural policy in the Indian Union should not merely be a palliative for our food shortage, with its sole interest to alleviate hunger at the expense of health. On the other hand, it should be attuned to the national requirement of an improved dietary with a readjustment to concepts of food in relation to health.

**The Place of Horticulture in Food Production:** This paper is a plea for putting horticulture firmly on the map of agriculture in India, both as a measure of maximising food production in the country and as a means of supplying the essential protective substances in the most abundant and acceptable forms. In the role of protective foods, fruits and vegetables supply minerals and vitamins and their pectin and cellulose are of proved value in regulatory functions in the human system. On the food front, they play a most important role in bridging the gap in our food supply. For instance, with an area of nearly 1,40,000 acres under bananas in Madras State, and an estimated annual production of over 11 lakhs of tons of this valuable fruit, we occupy the front rank in the world among the banana producing regions. A deficit of 8 lakhs of tons of rice per annum which faces us today is not therefore a feature that should worry us in this State, if only we supplement our diets with ripe and fresh bananas distributed all over the country in an

equitable and uniform manner. A more liberal use of mangoes, oranges and other seasonal fruits in our diets should also go some way in reducing our sole dependence on rice and wheat, incidentally with considerable benefit to our health,

Notwithstanding the above facts the production of fruits and vegetables is as yet inadequate to provide for a suitably balanced diet in minimum quantity for the 400 million people of India. The production of fruits must be increased by 50 per cent and vegetables by 100 per cent, to meet our requirements adequately. The question of maximising the output of fruits and vegetables as a means of augmenting food production is, therefore, of real urgency in the context of our food shortage.

**Planning in Fruit industry:** Fruit-growing is essentially a long-term profession and its success demands a long-term plan. Seldom do we, however, see this precept put into actual practice in this country. To most people, establishment of an orchard is a very simple affair. It begins and ends with clearing the land, digging of pits, planting with plants from the nearest source, and manuring and watering them from time to time. Nothing appears easier. It is this tendency for simplification that has hindered the progress of the fruit industry more than anything else. Instead of orchards adding to our national wealth and increasing the food resources, one sees abundant evidence of bad taste, wrong values and even actual plunder of the land, giving rise to innumerable 'orchard slums' which are the very opposite of what orchards should stand for in a country's life and economy. If, on the other hand, fruit-growing is planned along the lines that scientific research and experience have made possible, the amount of extra wealth and food that would be created can reach a colossal figure. We have in this country the soil, the climate and the men and material needed to make fruit growing in India into an efficient industry. The first step towards this goal is to avoid ill-planned orchards, planting wrong varieties and in wrong sites or regions. Such disastrous results can all be prevented by thoughtful planning on a long-term basis. What we should visualise is the ultimate form that our fruit industry should assume on the food front. Fruit being an industry of national importance, a plan that fosters its development in all parts of the country with due regard to the natural facilities and limitations of each region has to be evolved. Such a plan involves an amount of knowledge and authoritative data which no single person or administration can possess. To pre-arrange and correlate the regional and individual experiences would be the first step towards planning. The need of the hour is to organise a fruit-planning committee on the lines indicated above.

**Orchard Maintenance:** A vast difference exists between merely growing fruit and the production of fruit on a sound commercial basis. It is a common feature of every market to see varieties of fruit which should have been discarded long ago. A rational development of the fruit industry is only possible when solvency is imposed on fruit culture, absentee orcharding is abolished and and untested irrational methods are substituted by timely technical guidance. The fruit grower must take into account important factors such as soil, climate, variety, root-stock, manuring, spraying and pruning and he must have a definite plan of action covering a period of years. All these were no more than hazy traditions but research is now rapidly arranging them into a rational code and it ill behoves the fruit grower not to take advantage of such an advance.

**Product Industries:** The importance of the horticultural industry in India's food problem is not exhausted by the direct addition to our protective food supply and to our increased wealth through the utilisation of land by a more profitable method than by

agricultural farming. The establishment of auxiliary industries such as the manufacture of fruit products from surpluses during peak years must also be included among the assets that fruit and vegetable growing offers in the way of famine insurance.

**Marketing of Orchard Produce and Economics:** The welfare of any industry—primary or secondary—is based on certain fundamental pre-requisites. In the first instance it must be organised, secondly, it must possess the basic knowledge necessary for the efficient production of its product. In the third place, it must know its cost of production. Fourthly it should be capable of estimating in advance the quantity that will be available from year to year. Finally, the problem of marketing has to be faced with a full knowledge of quantities, costs, sales and returns.

In practice, however, the product as well as the price in the fruit market are subjects of perpetual discredit. It is the general experience that extremely poor quality fruits of various kinds are sold to the public at very high prices, the purchaser having no choice in the matter. It is hardly ever realised that one of the main causes for an unsteady and gloomy outlook that faces the fruit growers in the market is the present method of distribution and sale. The level of income in the country does undoubtedly shape the off take to a large extent but there is much that the producers themselves can do in the line. In any appraisal of the economic position of the grove no less than that of the industry as a whole, a long-range view is essential. The economic position has to be strengthened by a sound plan which can be adjusted to suit the changing income level. When the prices were high and the demand for fruit from the Army was steady, few growers thought of the postwar civilian demand. Bulk movement of fruit occurred, to Army areas and the civilian markets suffered from scarcity of fruits and high prices. Regular fruit eaters diminished and consequently, there was a sudden drop in demand and prices in the post-war years. Export markets outside the producing State were ignored and have yet to be recaptured. New markets were never fostered. For ensuring a plan to meet all such eventualities, co-ordinated action is essential. Some organisation such as an Indian Horticultural Council that would possess the authority and bargaining power in dealing with countries, regions and interests is an imperative need. Along with the establishment of such a Council, an organised drive towards increased fruit consumption should, from a constant effort. This again can be successful only if there is closer co-operation among growers united in one organisation. The advertising charges and cost of other measures to increase fruit eating can then be spread over all producers in small amounts. Co-operative marketing is yet another desirable outcome of such co-ordinated effort, which would have the object of narrowing down the price paid by the consumer and that received by the producer. This will also lead to improvement of market facilities and elimination of inefficient retailing methods and ensure that the valuable food which fruit growers produce is distributed to the consumer at prices which even the poorest people can afford to pay.

**Storage:** According to one estimate nearly 60 percent of fresh fruits deteriorate in the course of their transport from the production centres to the consumption or distribution centres under present conditions in India. One of the primary causes for this spoilage is the rapidity with which the fruits lose water after harvest rendering them susceptible to various types of decay. Even were such produce destined to reach a cold store eventually, the absence of adequate pre-cooling arrangements or refrigerated transport would expose them to all possible infections of decay and disease-causing organisms before bringing the fruit under cold storage. Refrigerated transport along with grove sanitation, scientific treatment of

fruit at harvest, grading and packing should all be considered as logical corollaries of cold storage, which in itself is one of the potent means of contributing towards maximising food production.

**Land Utilisation:** Governmental plans towards attainment of self-sufficiency in food take into account a computed deficit of 10 per cent in our requirements of food grains. This is sought to be made up by bringing under the plough cultivable wastes, by providing irrigation to erstwhile dry land areas, by intensive cultivation of existing arable land adopting improved farm practices, and by encouraging the cultivation of quick-growing and heavy yielding subsidiary food crops.

It may be emphasised, that the outlook for fruits and vegetables as calorie producers is brighter because they produce in general terms much more from the land than any cereal crop is known to do. Even if this were not so, a scheme for increased output of fruits and vegetables has other resources at its command for intensive land utilisation.

One of these is the harnessing of marginal lands unsuited for arable farming to the raising of a variety of hardy fruits and vegetables such as the jujube, custard apple, *Phyllanthus*, tamarind, wood apple, drumsticks, yams, tapioca and the like. Another is the build up of a fruit landscape by a merging of fruit bearing trees into the accessible fringes of forests near and around the villages. A third is the planting of shady fruit trees along the highways and roads to form avenues. A fourth is the intensive intercropping of prebearing orchards with a wide variety of vegetables and bush fruits almost throughout the year. All these are means and modes peculiar to horticulture alone and are of real significance in maximising food production.

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### Concentration on Intensive Manuring is the only way for Maximisation of Crop Production.

*By*

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India is an agricultural country and nearly 83% of the cultivable area is under food crops, 31.6% under rice, 29% under millets and other cereals and 24.7% under wheat. In spite of these, we are in deficit in food grains and import large quantities from outside. There was of course a reduction in area under food crops — due to the partition of the country. The proportion was unfavourable to us as the Indian Union has to maintain 78% of her original population with only 71.7% of original area under rice and 72% under wheat and hence naturally our problem is one of cultivation with the limited area available.