

## Eat More Fruit\*

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Experience of the human diet in all countries and ages shows that our food consumption is primarily controlled by circumstances. The popular tendency is to consider food merely as a means of supplying the necessary bulk for the body to function normally. Earlier work in nutritional and medical research indicated that the food we consume must supply sufficient energy. The unit of food energy is termed as the calorie. Till recently very great emphasis was laid on the supply of the requisite amount of calories for people of different ages and in different avocations of life. Thus, it was believed that a fairly active man of medium height and weight could maintain his weight by eating food containing 2,500 to 2,600 calories. The rations for the fighting forces were for a long time fixed on the basis of calorie standard, the daily requirements of the army being generally deemed to be over 4,000 calories per man. This notion was subsequently replaced by later discoveries in nutritional science which proved that besides energy, the human body requires protective foods largely made up of dairy products, vegetables and fruits. All these foods provide certain essential health-promoting substances called vitamins, the absence or inadequacy of which results in mal-nutrition, a host of diseases, poor growth and low efficiency of the body.

Japan was the first country to bring about something of a revolution in the domain of nutrition. In a lecture delivered at the XII International Horticultural Congress in Berlin, Dr. Wirz of Munich, who is the Nazi Expert in the Advisory Committee for public health at the headquarters of the Nationalist Socialist Party, showed how Japan succeeded in effecting a very significant quantitative economy in her food consumption. Japan, he said, was able to successfully reduce the calorie intake of an adult from 3,200 to 1,500 that is, to more than half of what is considered according to the widely accepted International standard as the adequate daily requirement of an adult engaged in light work. This achievement was rendered possible by introducing a diet containing a large quantity of protective substances which are contained in fruits and vegetables. A similar extraordinary result was achieved in Nazi Germany in 1938. Here it was found that in districts where ample vegetables and fruits were eaten by the populace the daily consumption of fats was 30 per cent below the Reich average.

Dr. Wirz also referred to the authoritative statement made by military experts to the effect that proper diet containing fruits was responsible primarily for the success of Italy in the last but one Abyssinian War. By

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\* Summary of a lecture delivered on 31-12-'43 and 1-1-'44 at Trichy during the Tamilnad Fruit Show.

proper diet Italians controlled certain epidemic diseases, which under the climate of Abyssinia could devastate more armies than the Abyssinian armaments. A similar view has been expressed by Lord Woolton, till recently the Minister for Food Supply in Great Britain. After the conclusion of the first National Nutritional Conference for Defence, convened by President Roosevelt in Washington, the Secretary for Agriculture stated that the people of the United States would have to consume twice as much of protective foods in the form of fruits as they did in 1941. The special measures taken in Great Britain to conserve their vitamin supply have the same end in view. All these provide unequivocal proof of the inestimable value of the protective substances contained in fruits for safe-guarding the physical fitness of the civilian population and the fighting forces.

One of the established facts revealed by scientific research is that, even if we supply the body with protein, fat and carbohydrates in abundant measures, the body would nevertheless starve. What matters, are the thousandth, even the millionth parts of gram of mineral salts and vitamins. If these are lacking, disturbances of metabolism, of health, and finally degeneration and sterility arise. It is, therefore, now well-known that by defective diet, we do not simply mean insufficient diet—not enough to eat—but rather incorrectly composed food, in which minerals and vitamins are lacking or are inadequate and which form the characteristics of the food eaten even by some of wealthiest of persons.

Of the several vitamins that fruits are reputed to possess vitamin C is the most important. This vitamin is best known for its ability to prevent and cure the scurvy disease. Bleeding from the gums, haemorrhages, black and blue spots on the skin, and painful joints are some of the well-known symptoms of this disease. From a thorough study made of the blood changes which occur following continuous daily administration of vitamin C to tubercular patients at Chicago University, it is reported that very favourable results were obtained in patients. Because of its various beneficial properties, the Nobel prize winner, Professor Szent Gyorgyi who first synthesised vitamin C has predicted that realisation of full health would come only when the medical profession and the public had reached an appreciation of the importance of vitamins, particularly of vitamin C. Fruits are now known to have besides the antiscorbutic value, value against insomnia and certain forms of insanity. It has been proved at the University of Chicago that patients receiving large amounts of vitamin C overcome insomnia without further medication and that insane patients require 3 to 5 times as much as normal persons to obtain restful sleep. This vitamin also strengthens blood vessels and connective tissues, promotes strong cartilage, bone and teeth. The greater need for vitamin C during fevers is also indicated by research. Guavas, Indian gooseberries, cashew fruits, pineapple, papaya, oranges, limes, lemons, grapefruits, mangoes, strawberry, pummelo, carambola (or Kamrak), bilimbi, jack fruits, wood apples and tomatoes are some of the South Indian fruits which are fair to rich sources of vitamin C.

The second important vitamin in fruits is A. Absence or inadequacy of this causes a lack of resistance and consequent susceptibility to infection. This is manifested by a tendency towards development of infections in the head sinuses, nasal passages, tear ducts, tonsils, respiratory tract, skin, bladder and gastrointestinal tract. Vitamin A is essential for maintaining normal skin and mucous membranes which are our first barriers to infection. Animals deprived of vitamin A show degenerative changes in the mucous membrane lining of the nose, throat, kidney and bladder. If maintaining a healthy mucous membrane is protection against colds, then the vitamin A found in fruits is protective in this respect. Besides promoting healthy skin and tissues, strengthening mucous membrane, aiding respiratory system and digestion, this vitamin strengthens eyes against diseases and night blindness. Mango, papaya, persimmons and cashew fruits are rich sources of vitamin A, while some bananas, figs, guavas, oranges, tree tomatoes, pummelo, bilimbi and jack fruits are fair to good sources.

Some fruits are also fair to good sources of vitamin B, and some, the only known sources of vitamin P. All these various vitamins are necessary to build healthy nervous tissues, aid digestion and absorption of starches and sugars and, are therefore, essential to normal growth and health. Fruits are not specially rich in B1 vitamin, but bananas, grapefruits, oranges, pears, plums and tomatoes do contain this in fair amounts.

Vitamin P has to do with controlling capillary permeability—the hæmorrhages associated with scurvy and known as purpura. This vitamin is claimed to help in the curing of high blood pressure and hæmorrhagic nephritis (Bright's Disease). The discoverer of this vitamin further claims that it prolongs life, and prevents loss of weight. Vitamin P is known to be found in lemon juice and peels, and is otherwise known as citrin.

The pectin contained in fruits stimulates intestinal activity without injuring the mucous membrane lining the tract. Spastic and irritable colons which are caused by the overuse of foods known as "roughage" can be avoided by using fruits regularly, as these provide a bland and non-irritating bulky material. An ideal bowel action is, therefore, promoted by regular fruit diet.

That portion of the pectin which is digested gives rise to certain products such as galacturonic acid, which when absorbed and carried to the liver enables that organ to get rid of many poisons. These detoxicating effects of fruit diet are valuable in cases of intestinal disorders including intestinal ulcers.

The cellulose in fruits also adds bulk to foods and thus favours normal intestinal activity without producing any friction or irritation. Dr. Wirz believes that if only the public realise this important aspect of fruit diet, that curse of mankind—the chronic constipation—will have been mitigated to a large extent. There are also instances which indicate strongly the value of the regular fruit diet in the curing of piles.

According to a popular notion, fruits which are tart or acidic may cause acidosis. As a matter of fact fruits counteract acidosis, aid in maintaining alkalinity in the body and are almost at the top in the list of the alkaline reacting foods.

Fruits are among the most splendid appetisers, possessing rich flavour and the ability to increase the flavour of other foods as well. By adding colour and gayness they make an inviting appeal. Crisp and tart fruits stimulate the circulation in gums and freshen the teeth. That unpleasant tooth trouble—pyorrhoea—is said to be cured successfully by the intake of certain fruit juices such as orange juice, at the rate of one pint a day. The value of fruit diet in counteracting dental decay and gingivitis has also been proved by nutritional experts.

Among the reducing foods of special value to fat persons, fruits occupy a high place, being low in calorific value, low in fat, starch and protein, and high in essential acid-neutralising minerals and vitamins that help to act as buffers by soaking up the adipose acid waste from the tissues of the obese. Some fruit juices are also reputed to be an aid to beauty.

The manufacture and maintenance of healthy blood supply, the fortification of the body against the infectious diseases of childhood, such as diphtheria, scarlet fever and rheumatic fever and the counteracting of such diseases as arthritis and diabetes, as well as the promotion of wound healing are yet other claims made by certain medical authorities, in favour of regular fruit diets.

As a medicinal agent possessing prophylactic and therapeutic powers, as most tempting, palatable, and enjoyable foods of the highest health-giving properties, there are, therefore, none other to equal fruits for human well-being. Fruits are admittedly the Nature's best devices for keeping mankind healthy and happy. The fruit industry is, therefore, deemed to be one which is more in step with the biological trend than other agricultural industries, with the possible exception of dairy and vegetable-growing industries. It would therefore be not an exaggeration to say that it is a public service of first rate importance to induce people to grow and eat more fruits.

None can deny that the scope for increasing fruit consumption is very great in our province. We have no accurate figures of per capita fruit consumption, but there is no doubt that it must be notoriously deficient and far below the American standard. An estimate of citrus fruit consumption has been recently made by the Agricultural Marketing Adviser with the Government of India. According to this our per capita citrus consumption is only about 6 lb. as compared to 54 lb in U. S. A. Yet the U. S. A. is striving to double its fruit consumption. Even Great Britain, a non-citrus producing country, has a per capita consumption of 27 lb. We can very well visualise, therefore, the scope for a Eat More Fruit Campaign in this Province.

Even among our higher economic groups, the percentage of regular fruit-eaters is negligible. Cost is surely of not much consideration with the

rich in respect of fruit consumption. If the health value of fruits is brought home to them, we should be able to increase sales and extend our production of fruits to a remarkable extent. For the people even in the lowest economic group also, there is a large variety of fruits like the cashew apple, jack, ber, nelli or amla, papaya, custard apple, cheaper mango and citrus, which can be produced in plenty and placed within their reach. These oft-despised fruits of the rich are not merely healthful, but are also a source of no mean profit. In these days one often sees a poor man having a satisfying meal with four to five Mauritian bananas. It is doubtful if a more healthy meal can be had of cereals at the same cost.

Above all, let us not forget, that if health, growth and efficiency mean anything in our scheme of life, the value of fruit diet cannot be measured in terms of their actual cost. Fruits are certainly cheap from the stand-point of health value, and are essential for our well-being, which is Home Defence. The origin of the best food is fruit industry. The source of one of the national wealths is also the same. If we are indifferent to that industry, we only ignore the means of bringing about our economic prosperity and improvement of national health, especially in a province like ours which enjoys the most favourable conditions for fruit production at a cost which will defy competition. "Grow More Fruit" and 'Eat More Fruit' are the two slogans which should, therefore, motivate our actions in various spheres of national life.

## Breeds of Cattle and Their Staple Fodder Grasses

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**Introduction** There are four important breeds of cattle in South India viz., the Amirthamahā and Hallikar in the Mysore State; the Ongole in the Guntur District and the Kangayam in the Coimbatore District. These four breeds are not the outcome of any scientific breeding as it is the case in Western countries, though in maintaining the purity of the breeds, some crude principles might have been observed by the ryots. These four breeds differ from one another in their characteristics—the Amirthamahā and Hallikar are known for their nimble foot on the road; the Ongole for its massive body and slowness in speed combined with immense capacity to haul heavy loads; the Kangayam for its medium size and long life especially when put to heavy agricultural work such as mhoting. In Western countries cattle breeders pay great attention not only to pedigree breeding but also to feeding and upbringing of cattle. Stall feeding plays an important role. The advantage in stall feeding is that the best forage can be supplied to the animal in required quantities and the deficiencies made up by suitable concentrates. Unfortunately, in this country, cattle feeding is still a neglected problem.

**Breeds of cattle and grass species** These four breeds, mainly depend upon the natural fodders, for their feed, chief of which are the grasses in