

good diet contains more iron than a poor diet, so that proper feeding also helps to enrich the blood.

The right kind of food for Indian children. Sir Robert McCarrison, who worked for many years in India and is a great authority on diet, has written a little book called "Food", for use in schools in India. The following is a passage from "Food":

"The right kind of food for Indian children and, indeed, for children in any country, is one made up of the following simple things: (1) any whole cereal grain or mixture of cereal grains; (2) plenty of milk and the products of milk—curds, buttermilk, butter, ghee; (3) sprouted pulses; (4) eggs, or liver, or meat, or fish, occasionally, if religion permits their use; (5) tuber and root vegetables; (6) abundance of green leafy vegetables; and (7) fruit. These are the things with which the appetite should be satisfied; the things that should be eaten for health's sake. What else is eaten does not greatly matter so long as it is simple, clean, easily digestible, well prepared and not in excess of the body's needs."

THE INDIAN GOOSEBERRY (AMLA) AS A SOURCE OF VITAMIN C

*A note prepared in the Nutrition Research Laboratories,
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All fresh fruits and vegetables contain some vitamin C, which is now often called ascorbic acid; this is the vitamin which prevents and cures scurvy. The amount of the vitamin present in various fruits is very variable; for example, orange juice, which is usually accounted a rich source and which is often given to infants to supply their needs of the vitamin, contains about 40 milligrammes of vitamin C per 100 cubic centimetres (about 3½ oz.), whereas the common plantain contains only about one tenth of this amount. There is one very cheap and common fruit, namely the Indian gooseberry (*Phyllanthus emblica*, Linn.), which is very rich in vitamin C, —which, indeed, contains more of this vitamin than any foodstuff previously investigated. The fresh juice of the fruit contains nearly twenty times as much vitamin C as orange juice, and one single gooseberry is equivalent in anti-scorbutic value to one or two oranges.

The amount of vitamin C present in a foodstuff can be determined either by chemical methods or by animal experiments. Some years ago chemical investigations, carried out in the Bio-chemical Laboratories, Madras, and the Indian Institute of Science, Bangalore, suggested that the Indian gooseberry has a high vitamin C content. Chemical tests for vitamin C are not, however, invariably reliable, since the reaction may be given by other substances which are chemically akin to vitamin C but which cannot replace it in

the body. Recent investigations in the Nutrition Research Laboratories, Coonoor, have shown that very small quantities of the Indian gooseberry can prevent or cure scurvy in guinea pigs, so that the potency of this fruit has been fully confirmed by animal experiments.

Storage

The Indian gooseberry can be preserved in various ways when out of season. The effect of various methods of preservation on vitamin C content has been studied in the Coonoor Laboratories. In general, fruits and vegetables readily lose their vitamin C when they lose their freshness. It is, however, possible to preserve Indian gooseberries without losing much vitamin C. An easy and effective method is to mince the fruit and dry it in the shade (not in the sun) at ordinary temperatures. The dry powder is rich in vitamin C, containing some 10-12 milligrammes per gramme, and it remains so for several months, so that it can be used when the fresh fruit is out of season.

Another suitable method of preservation is salting. The berries are immersed in hot water for a few minutes and afterwards placed in concentrated salt solution. With this treatment much of the vitamin is retained. But when the berries are made into pickles by the usual method of boiling or steaming, followed by frying in oil and the addition of curry powder and salt, most of the vitamin is lost.

Its Use in Practice

The Indian gooseberry has been held in esteem in India since time immemorial and it is used as an ingredient in many Ayurvedic medicines and tonics. It is not, however, very widely or generally consumed. Diet surveys have shown that in certain parts of India ordinary diets, particularly at the dry seasons of the year, contain very little fruit and vegetables and such diets may be deficient in vitamin C. While pronounced scurvy is infrequent, it is quite possible that in some areas a low intake of vitamin C may be responsible for the impairment of health and vitality. Gooseberries may be used to make up any deficiency of this vitamin.

The modern practice in infant feeding is to give some source of vitamin C, such as orange juice, as early as the second or third month of life. While the Indian gooseberry has not been used in infant feeding, a trial of its value may be made in infant welfare centres; there seems no reason why it should not be suitable for this purpose and easily tolerated and digested by infants. One teaspoonful of the juice will supply the infant's daily requirements. In welfare centres the juice might be given when the fruit is in season and the dry powder prepared for use at other times of the year.

Indian synonyms for the fruit are as follows: Hindustani and Bengali—*Amla*. Telugu, Kanarese, Tamil and Malayalam—*Usirikekava*, *Nelli-kavi* and *Amalakam*. Marathi—*Avala*.