

B-117: Relationship between the duration of heat treatment and the destruction of vitamin C in lime juice

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Fruits are a vital component of our daily diets as they provide Vitamins and Minerals. Fruits based juices have become popular in recent years in Sri Lanka. Among vitamins present in fruits, vitamin C is of primary importance, and plays a significant role in our health.

The destruction of vitamin C can occur in anaerobic environments as well as in aerobic conditions. Aerobic factors such as head space, type of containers and the pH value in the fruit juices in combination with high temperatures significantly contribute to the oxidation of vitamin C. The destruction of Vitamin C in **ready to serve** (RTS) lime juice due to heat treatment was spectrophotometrically evaluated.

Average vitamin C content in freshly prepared pure lime juice was 214.8 mg/100 ml. The destruction of vitamin C was noted even before heat treatment as the fresh RTS immediately after its preparation by adding water and sugar to the initial pure juice contained only 18.2 mg/100ml of RTS. The destruction of vitamin C before heating may be due to some physical parameters like free oxygen, large head space of bottles and cans. The destruction rate in the RTS lime juice during heating at 85°C was detected as ~ 0.625 mg/min. The RTS juice heat-treated for 16 min retained 8.2 mg/100 ml RTS juice.

It can be concluded that there is a positive correlation between the duration of heating and the destruction of vitamin C in RTS lime juice, ($r=+ 0.948034$). The destruction occurs mainly due to high temperature treatment and its long