4 Tropical fruit juices

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4.1 Introduction

Tropical fruits are the newest arrivals on the juice and fruit beverage market. With the exception of pineapple, they have only recently become established in this sector, and there is still considerable room for further development. Pineapple juice has been available commercially since 1932. The development of the production and sale of other tropical juices has been much more recent, and the market for such juices is still immature both in Europe and especially in North America.

The expansion of demand was no doubt stimulated by the increasing diversity of tropical fruits that became available in the 1980s. They were first introduced by small shops in ethnic communities and are now widely available in the major supermarkets throughout Europe and North America. This new interest encouraged more sophisticated methods of production, selection and packaging and hence the availability of higher quality and more attractive looking fresh fruit which, in turn, led to increased demand. The result was an enhanced public awareness of tropical fruits leading to a growing interest in the juices and beverages made from them. This interest was encouraged by the marketing activities of many of the leading distributors.

Apart from pineapple, the principal juices which have gained some level of popularity in Europe are guava, mango and passionfruit, although some other tropical juices are also seen. With the exception of pineapple, tropical juices tend not to be suitable for drinking on their own and are usually found either in nectars or juice-based drinks particularly, or as an ingredient in the mixed fruit drinks which have become more common in recent years.

The commercial production of tropical fruit juices has, thus, increased considerably. The method of production of juice or purée from certain tropical fruits is described below. In many cases the juices are concentrated and then packed either in frozen or aseptic form. Not all tropical juices are, however, suitable for concentration because of their physical nature. This is particularly true where the liquid expressed from the fruit is a purée with a high pulp content rather than a free flowing juice. In these cases, it is usually possible to separate the serum from the pulp but the result is frequently a poor, characterless liquid bearing little resemblance to the original fruit. Another constraint is the fact that many tropical juices are produced in
relatively small quantities and unless a sufficient throughput can be generated by, for instance producing other juices in greater quantities, the installation of modern evaporation capacity would be uneconomic.

When concentration is possible, modern evaporators are employed including those produced by APV, Alfa Laval and Gulf. Much development work is also being done to improve the production of those natural volatiles which are normally lost during evaporation. In many cases these are particularly elusive but breakthroughs have been made and more are expected.

Throughout this chapter, reference to degree of concentration is given in degrees Brix rather than by volume (e.g. 3:1 or 2+1). The reason for this is twofold. In the first instance, there are no official criteria for the Brix or soluble solid content of single strength tropical juices or purées, and secondly the natural solids in the various fruits vary considerably depending on origin, variety and the time at which the fruit is harvested.

In the following, an attempt has been made to give estimates of production figures. It should be noted, however, that reliable statistical information is not generally available. Many countries lump all tropical fruit statistics together under one heading whilst others release export figures rather than those for total production. It should be understood therefore that many of the figures given are based on information privately obtained, and from the author’s personal experience. They should be regarded as a guide only and are intended to give the reader some general perspective of the world production and trade in tropical juices rather than an accurate record.

4.2 Guava

The guava, Psidium guajava L. (Figure 4.1) is a member of the large Myrtaceae or Myrtle family which includes the common Mediterranean myrtle of mythological importance to the Greeks and the Romans, the eucalyptus group and also cloves which are the dried buds of Syzygium aromaticum. Guavas are the only edible fruits of this family which are processed commercially although there are other fruits such as Brazilian cherry, water rose and rye apple which are sold as fresh fruits mostly locally.

Guavas are believed to have originated in the tropical regions of South America but were well established in Asia by the early 17th century and are now common in most tropical and sub-tropical regions throughout the world.

No figures exist showing the production of fresh guava. The plant grows in the wild and is well adapted to a wide range of different conditions in both tropical and sub-tropical regions. The most important commercial regions include Florida, California and Hawaii, Central and South America, India, South East Asia, Australia and the South Sea Islands, and Northern and Southern Africa.