SUMMARY

The present investigation was undertaken with a view to standardize the recipe for nectar, to evaluate the guava cultivars for nectar preparation, to study nutritional changes in nectar during storage and to study the storage stability at ambient temperature (25 ± 5C) for 120 days. Experimental work was carried out in Fruit Technology Laboratory of the Department of Horticulture, Haryana Agricultural University, Hissar. Fresh fruits from four guava cultivars were harvested at colour break stage. They were analysed for proximate components like pectin, acidity, ascorbic acid, total sugar, reducing sugar and total soluble solids. Nectar was prepared by mixing different ratios of pulp and acid content. Total soluble solids of the nectar was maintained at 15 percent by adding cane sugar. The nectar was stored at ambient temperature upto 120 days. During storage, nectar was analysed periodically at monthly interval for its chemical composition such as reducing sugar, total sugar, total soluble solids, ascorbic acid, pectin, acidity, pH, optical density, organoleptic evaluation and micro-organism examination.

Fresh fruits of cv. Allahabad Safeda had highest total soluble solids and the lowest pectin content among all the other cultivars understudy. Highest content of

ascorbic acid was found in cv. Sardar followed by Banarasi Surkha, Tensildar and Allahabad Safeda. Acidity expressed in terms of citric acid was the lowest in cv. Sardar and highest in cv. Tehsildar.

Reducing sugars of the nectar have shown an increasing trend during storage. The percent increase in reducing sugars were maximum in cv. Banarasi Surkha and minimum in cv. Tehsildar. Maximum reducing sugars were observed in nectar from cv. Tehsildar and lowest in cv. Banarasi Surkha after processing. Comparatively higher amount of reducing sugars were observed in nectar containing 0.4 percent acidity than 0.3 percent acidity. Nectar containing 30 percent pulp and 0.4 percent acidity, initially, have higher reducing sugars content upto 90 days of storage but at 120 days storage, nectar with 25 percent pulp and 0.4 percent acidity contained significantly higher reducing sugars.

Total sugar content was also increased in nectar during storage. Maximum increase in total sugars were noticed in nectar from cv. Sardar. Among various combinations nectar prepared with 25 percent pulp and 0.3 percent acidity had higher total sugar content throughout the storage period. Percent increase in total sugars were maximum in nectar from cv. Sardar prepared with 20 percent pulp and 0.4 percent acidity.

Total soluble solids were found to be increased in nectar gradually during storage. The highest increase was observed in nectar from cv. Sardar and the lowest from cv. Allahabad Safeda at end of storage period. Increase in total soluble solids content was comparatively more in nectar prepared from 30 percent pulp and 0.4 percent acidity than other combinations. Higher pulp and acid concentration in nectar were found to be responsible for higher increase in total soluble solids.

After processing maximum ascorbic acid was retained in nectar from cv. Sardar and the lowest in nectar from cv. Tehsildar. However, higher percentage of ascorbic acid was retained in cv. Allahabad Safeda and it was minimum in cv. Tehsildar during storage. Nectar prepared from higher pulp content retained comparatively higher ascorbic acid content during storage.

Pectin content reduced remarkably during processing and storage. Maximum pectin content after processing of nectar was observed in cv. Banarasi Surkha, however, its retention was maximum in nectar from cv. Allahabad Safeda and minimum in cv. Banarasi Surkha during storage. Nectar prepared from higher pulp and acid concentration contained the higher pectin content.

The acidity of the product has shown an upward trend when analysed during storage. Increase in acidity was continued upto 90 days, thereafter, a slight decline

was observed. The percent increase in acidity was, however, maximum in nectar prepared from cv. Banarasi Surkha. Similarly the percent increase was more in nectar containing 0.3 percent acidity than 0.4 percent acidity.

A gradual decline in pH of nectar was observed throughout storage period. Increase in acidity might be resulted in reduction in pH. During storage pH remained higher in cv. Allahabad Safeda throughout the period. At end of storage period, the percent decrease was found maximum in nectar prepared from cv. Sardar.

Storage of nectar at ambient temperature caused browning of the product. A progressive increase in browning was noticed throughout storage period, however, the percent increase in browning was more in nectar prepared from cv. Sardar than others. Nectar containing higher content of pulp and acid developed more browning than nectar which contain lower concentration.

Organoleptic evaluation have shown that nectar prepared from cv. Sardar was rated best among all other cultivars. Nectar prepared from various pulp and acid combinations differ in their consumer's acceptability. However, nectar prepared with 25 percent pulp and 0.3 percent acidity scored the maximum points and adjudged best by the panel of judges. And the same combination

retain better, its organoleptic quality even upto end of storage. Nectar prepared from cv. Tehsildar containing 30 per cent pulp and 0.4 per cent acidity scored below the acceptable limit even after processing. Therefore, the product prepared with 25 percent pulp containing 0.3 percent acidity from cv. Sardar was considered the best combination.

Microbial examination of the guava nectar showed that the presence of micro-organisms in nectar during storage were far below the safety limits of International Food Standard. However, the organisms which present were mainly yeasts, moulds and bacteria.

It is observed from the present studies that the cultivars Sardar followed by Allahabad Safeda have been found suitable for nectar preparation on commercial scale. Nectar prepared with 25 per cent pulp containing 15 per cent sugar and 0.3 per cent acidity is, therefore, recommended on the basis of maximum consumer's acceptance. Storage studies have indicated that the nectar prepared from above recipe can be kept well at room temperature (25 + 5 c) upto 4 months without much deterioration in their quality.