ABSTRACT

Gracilaria verrucosa and *Gracilaria edulis,* economically valuable red algae species, present in the coastal line of Sri Lanka in the Trincomalee, Kalpitiya and Puttalam lagoon.

Utilization of seaweed is poor in Sri Lanka except a small amount is exported as dried seaweed. It may be a good source for agar production, which is not studied so far in Sri Lanka. Therefore the present study was carried out to extract gel (agar) from *Gracilaria* species and to analyze the quality characteristics of gel. Preparation of a value added product (jelly) from *Gracilaria* species was also aimed in the present study.

For the extraction of gel, different concentrations of citric acid were used and the most preferable level of citric acid percentage was determined by using statistical application. Chemical analysis was done to determine the moisture, dry matter, crude protein, crude fiber and total ash of the agar powder. Also the most preferable levels of citric acid percentage for jelly were selected by sensory evaluation using hedonic scale.

The most suitable citric acid percentage for the gel extraction was 0.1%. Chemical analysis indicated that the jelly powder contains 15.78% moisture, 1.16% of crude protein, 0.93% of crude fiber, 4.28% of total ash and 84.21% of dry matter. *Gracilaria* seaweed jelly was prepared as a vegetarian dessert which contains 0.1% citric acid and 20% sugar. The melting temperature of the agar containing when 0.05% and 0.1% citric acid 40^0C and 38^0C also gelling temperature 92^0C and 88^0C respectively.

Further studies should be carried out for the shelf life evaluation and to study the possibility of incorporating this agar powder in microbiological applications.