

## Formulation of Tamarind (*Tamarindus indica* L.) Pulp-based Mix Spice Cube

\*W.B.W.M.R.C.P. Aluwihare<sup>1</sup>, K. Yuhenthiran<sup>2</sup>, A.G.U.M. Gamage<sup>3</sup> and  
A.M.T.N. Adikari<sup>3</sup>

<sup>1</sup>National Institute of Postharvest Management, Anuradhapura, Sri Lanka

<sup>2</sup>Department of Export Agriculture, Faculty of Animal Science and Export Agriculture,  
Uva Wellassa University, Sri Lanka

<sup>3</sup>Department of Postharvest Technology, University College of Anuradhapura, Sri Lanka  
\*wmrcpalu@gmail.com

Tamarind (*Tamarindus indica* L.) is an abundantly found underutilized fruit tree in the Dry Zone, Sri Lanka. However, most of the fruits go to waste due to a lack of technologies for processing and storage. This study was conducted to reduce postharvest losses of tamarind fruits and production of value-added ready-to-use mix spice cubes for culinary purposes. Fat, crude fiber, ash and moisture content, pH, total soluble solids (TSS), colour, and total phenolic content (TPC) were determined. Sensory evaluation was done using the five-point hedonic scale with tested attributes of appearance, colour, aroma, texture, taste, mouth feel, dissolvability, spiciness, and overall acceptability. Three cubes and spice mixture were prepared according to the weight proportions, namely T1 (tamarind pulp 25: salt 1: spice mixture 2), T2 (tamarind pulp 25: salt 1: spice mixture 3), and T3 (tamarind pulp 25: salt 1: spice mixture 5). The spice mixture was prepared by mixing coriander 40: black pepper 10: cumin 10: red chili 6: garlic 3. The microbiological stability (total plate count) of the final product, which was packed (PP pouches (55 µg)) and stored under ambient conditions (32 ± 2 oC/ RH 65-75%) was also determined. The T3 sample cubes had significantly ( $p < 0.05$ ) higher moisture content (16.11±1.71%), crude fiber (5.65±0.62%), pH (3.12±0.36), fat content (2.65±0.47%) and colour variation (31.60±0.93). However, ash content (9.82 ± 0.96%) was significantly ( $p < 0.05$ ) higher in the T1 cubes, whereas TPC (0.39±0.15 mg GAE/g) was higher in the T2 sample and TSS (3.37±0.21) was lower in T2 sample. According to the results, it can be concluded that the T3 cubes significantly ( $p < 0.05$ ) differ from the T1 and T2 cubes in terms of moisture content, crude fiber, pH, fat content, colour variation and sensory attributes. As well, T3 cubes have a greater shelf life for the tested period of four months than other samples under evaluated conditions. Further studies should be conducted to determine the texture development of cubes.

**Keywords:** Postharvest loss, Nutitive quality, Shelf life, Spice mixture, Tamarind