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The effect of tamarind extracts and potassium sorbate on the growth of bacteria, fungi and pathogens in fish processing

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Possibilities of usage of tamarind fruit extracts as a bio-preservative was tested in this research. Tamarind is a sour, tropical fruit, which is widely used as a food additive in traditional cooking in Sri Lanka for centuries. Tamarind extracts, i.e., Raw Tamarind Extract (RTE), Dried ripe Tamarind Extract (DTE), Raw tamarind Seed Extract (RSE), and Dried ripe tamarind Seed Extract (DSE), were used in this study where these extracts have relatively acidic pH values, which were useful in adjusting pH in the media. Trials were carried out to investigate the effect of tamarind extracts alone and the synergistic effect of it with potassium sorbate on the growth of spoilage bacteria, fungi and pathogens. These trials clearly showed a microbial control when tamarind pulp extracts were used while tamarind seed extracts did not give any antimicrobial effect. Tamarind pulp extracts inhibited the growth of spoilage bacteria of fish at a level of pH 4.6, and they were not effective against fungi present on dead fish. The synergistic effect of tamarind extracts with potassium sorbate was greater than that of the extracts alone where it is much effective on fungi. Tamarind seed extracts were not effective against bacteria either alone or with potassium sorbate.