ASSESSMENT OF HISTAMINE LEVELS OF YELLOWFIN TUNA LANDED FROM LOCAL MULTI-DAY BOATS AND SHELF LIFE EVALUATION OF YELLOWFIN TUNA PICKLE

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ABSTRACT

Histamine may also be present in certain foods containing free histidine, and is generated by certain bacteria during spoilage and fermentation of fish. Scrombotoxin fish poisoning is a worldwide food safety problem and is a common cause of fish poisoning that occurs in humans. Therefore, the aim of this present study was to analyze the histamine content of yellowfin tuna landed from local multi-day boats. Yellowfin tuna fish samples were analyzed for histamine content in two different fishery harbours and three different multi-day boats. Histamine content was significantly difference ($p<0.05$) among the fishery harbours. The results of this study revealed that, Histamine content was significantly ($p<0.05$) higher in Negombo fishery harbor yellowfin tuna samples than Dikkowita fishery harbor fish samples. Histamine content was significantly difference ($p<0.05$) among the different multi-day boats in Dikkowita fishery harbor. Histamine content was significantly ($p<0.05$) higher in yelllowfin tuna fish samples of boat 3. Lower histamine content was observed in yellowfin tuna fish samples of boat 1.Intermediate histamine content was observed in Rain boat 4.

Fish preservation is a very important aspect of the fisheries. Fish preservation methods are can be used as the prevent formation of the histamine forming bacteria. Pickle carries a low risk of food poisoning and has a long shelf life Therefore; the aim of this present study was to analyze the physico-chemical parameters and sensory evaluation at different volume of vinegar. The physico-chemical (ash, moisture, titrable acidity, pH, histamine contents) and sensory characteristics (colour, appearance, texture, aroma, sourness, saltiness and overall acceptability) were analyzed, at day 1, week 1 and week 2 of storage.

At the day one reading, the attributes moisture, ash, pH, titrable acidity, and histamine content were significantly ($p<0.05$) difference among the treatments. 70ml of vinegar added pickle showed the highest lowest histamine content. Physico-chemical analysis of freshly made yellowfin tuna fish pickle revealed, there was increase moisture, ash content, titrable acidity and histamine content with the increase in the volume of vinegar. As well as decrease pH with the increase in the volume of vinegar. Sensory evaluation of freshly made pickle formulations showed that the pickle with 30ml volume of vinegar and 50mlvolume of vinegar were most preferred formulation at day on preparation based on the physico-chemical and organoleptic point of view. Most preferred two pickle samples were stored in 2 weeks at ambient (30-32^{0}C) temperature.

During the storage moisture, ash content, pH, titrable acidity and histamine content were significantly ($p<0.05$) changed. The physico-chemical parameters such as moisture, pH, histamine content decrease and titrable acidity and ash content increase in different vinegar concentration formulations. Organoleptic characteristics of yellowfin tuna pickle have lightly changed during the storage period. Microbial studies were shown that the observation on bacterial colonies at the end of the storage period among the inoculated samples. There was no harmful effect on the quality of the product. Finally, it could be concluded that the pickle with 50ml volume of vinegar was the best in chemical and organoleptic quality compared to other combinations.

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