

Abstract

Project Code : MRG5580103

Project Title : Microbiological and chemical changes of squid (*Loligo formosana*)

preserved by combined methods during refrigerated storage

Investigator : Asst. Dr.Punnanee Sumpavapol

Faculty of Agro-Industry, Prince of Songkla University

E-mail Address : punnanee.s@psu.ac.th

Project Period : 2 years

Squids are the main marine animals in the world cephalopod fishery production. During handling or storage, squids undergo changes in texture, flavor as well as color, leading to less acceptability. Quality changes of squids are generally dependent on storage conditions including storage temperature and time. Generally, the rapid growth of microorganisms is associated with the spoilage of squid. However, there is very little information on the role of specific spoilage microorganisms in the quality loss of squid during postmortem handling and storage. Therefore, this study aims to identify the major spoilage microorganisms in squid during refrigerated storage. And further, elucidate the combination method to prolong the shelf-life of squid keep at refrigerated temperature. All squid samples (1) whole squids, 2) squids with evisceration and 3) squids with evisceration and skinning) were stored in a refrigerator (4^oC) for 14 days. During storage, it was found that microbial count, TVB, TMA contents, pH and color of squid undergo changes and spoiled within 2 days of storage. *Aeromonas aeruginosa* was found to be a specific spoilage organism of squid due to it accelerates the quality changes of squid compared to other identified microorganisms. Moreover, squid treated with citric acid could retard the shelf-life of squid from 2 to 4 days while MAP could extend the shelf-life from 2 to 6 days. A combination of citric acid treated with MAP could extend the shelf-life of squid (whole squids, squids with evisceration and squids with evisceration and skinning) from 2 to 8 days of storage. Further identified the associate of *Aeromonas aeruginosa* and other microorganisms caused spoilage of squid could be fruitfully to seafood industries

Keywords : Squid; Refrigerated storage; Microbiological change; Chemical change