

The relationship between water activity and fish spoilage during cold storage : a review

ABSTRACT

This review paper presents clearer picture about the relationship between spoilage of cold stored fish and water activity. The paper was an attempt of presenting the recent existing information and the latest development in this regard. It covered the relationship between water activity and moisture content, water activity control, spoilage of fish and its different phases and the relationship between the spoilage and water activity. The paper revealed that during the initial period of storage some of the characteristics of the fish product reduce in intensity or are lost and in the later stage bacterial degradation of tissues became evident. The water activity (aw) played an important factor in fish spoilage and the growth of different microorganisms depends on its rate. If the aw reduced to 0.6, the growth of bacteria and moulds can be prevented. The detection of spoilage can be determined by controlling water activity and in the same time can be retarded by reducing the aw of the fish by either drying or freezing to keep the fish in good stage with high nutritional and organoleptic quality. The information presented in this study is very important and can assist in preventing spoilage of fishes and their products particularly when production and processing operations are applied.

Keyword: Fish spoilage; Water activity; Shelf life