

SUMMARY

Fish and fish processing byproducts are rich in valuable proteins and oils as nutrients. They also contain high value biomolecules such as enzymes. Treatment of these byproducts with organic and / or inorganic acids is a mild treatment for preservation of nutrients. Fermentation of these byproducts using acid producing bacteria such as lactic acid bacteria also preserves the nutrients. The fish and its soft byproducts such as flesh, viscera (intestines, livers,) and blood can be subjected to such mild treatments. The treated mixture is allowed to ferment under suitable conditions to obtain protein hydrolysates and / or silage products. The preservation of fish by fermentation depends on the interaction of a number of environmental and microbiological factors including pH, water activity, presence of preservatives and competitive microflora. The fish protein hydrolysates possess potent antioxidant activity. They also reduce risk of cardiovascular diseases by modulating blood clot and platelet formation, cholesterol metabolism and regulation of blood pressure. Fish silage from low value fish and byproducts has been used as an ingredient in animal feed formulations replacing conventionally used fish meal. Silage products have resulted in to better growth and performance in fish and poultry when included in diets compared to fish meal diet.