

An Overview of Fermented Fish Products

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DESCRIPTION

In the fermentation process, "fish" refers to any fishery product that has undergone degradative changes due to enzymatic or microbiological activity in the presence or absence of salt. The overall processing steps of fish fermentation are the same all over the world. Proteins are broken down by the action of enzymes, which are sometimes assisted by microorganisms. Depending on the type of fish, paste can be stored at room temperature for one to several months. At this point, various bacterial and natural enzymes begin to solubilize fish proteins. Indeed, different bacterial strains can be isolated during this phase, while fungal and yeast loads tend to decrease throughout fermentation. Fermentation is the process of breaking down proteins in raw fish into simpler molecules that may be stored at room temperature. In some processes where it is controlled by adding salt, only a partial breakdown of the protein occurs, resulting in the production of a desired type of flavour while also ensuring the product's preservation. As a result, the fermentation of fish focuses primarily on the protein fraction and the lipid fatty components of the raw material. These goods go through natural fermentation in saline liquors, with or without de-gutting or deboning. It could help stimulate the immune system, control blood sugar and lower blood pressure too.

Types of fermented fish products

- Traditional fermented fish products are primarily salt fermented. Products can also be classified as high salt (more than 20% of total weight), low salt (6-8%), or no salt depending on the proportion of salt added.
- Proteins and their hydrolytic cleavage products such as peptides, peptones, and amino acids; higher fatty acids and their esters; glycerides and their derivatives, monosodium glutamate, nucleotides, and inosine monophosphate are the flavor-giving components of fermented fish products.

Fermented fish products can be classified into three types based on their texture:

1. Products in which the fish retain a significant portion of their original form or are preserved in large chunks.

- Examples: Makassar (Indonesia), pedah siam (Thailand), Colombo cured mackerel (India), buro (Philippines),
2. Products derived from the reduction of fish to a paste includes prahoc (Kampuchea), bagoong (Philippines), belachan (Malaysia), ngapi (Burma), trassi (Indonesia),
 3. Products derived from the reduction of fish to liquid examples: Patis (Philippines), nuoc- nampla (Thailand), mam (Vietnam), and budu (Malaysia).

Nutritional value of fermented fish products

Fermented fish sauces and pastes typically contain about 10% protein in the form of amino acids and polypeptides. Amino acids occur in such products without much change in composition and quality when compared to fish, and thus contribute to nutrition in the same way that fish protein does. They are a good source of calcium, iron, and some B vitamins. However, the nutritional value of these products is limited by their high salt content, which prevents them from being consumed in large quantities. Furthermore, these traditional products are consumed as a condiment rather than as a source of nutrition. Fermentation technology for fish preservation has been around since the beginning of time. Many South East Asian countries enjoy fermented fish paste and sauces as a condiment (flavoured salt) with cooked rice. Nobody consumes a large quantity of these products on a daily basis, but almost everyone consumes a small amount every day.

CONCLUSION

The traditional fermented fish product process relies on the substrate and source of the enzymes used in the fermentation, which comprises three groups, but the most common process is the fermentation caused by the enzymes found in fish. Fermented fish contains particularly high levels of EPA and DHA, as well as antioxidants and essential nutrients. Antioxidant, antagonist, antihypertension, immune modulatory, antithrombotic, antimicrobial, and anticancer activity have been

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demonstrated for bioactive peptides derived from fermented fish products. Fermented fish had significantly higher levels of ascorbic acid, DPPH, and ABTS, which are beneficial. However,

certain bacteria produce biogenic amines, which can be poisonous if consumed in large quantities. As a result, it is critical to check the quality of fermented fish before consuming it.