

Development of edible texturised dried fish granules from low cost fish and its storages characteristics

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Abstract

Malnutrition is one of the major problems faced all over the world and particularly prominent in the developing countries. However, large quantities of fish are discarded at sea because it is uneconomic to preserve and bring them ashore. Dhoma by-catch is the best example of such fish. The world consumption of fish could be doubled if its unutilized or underutilized resources could be brought into human food chain.

To find the utilization of the presently wasted by-catch, an attempt has been made to prepare texturised dried fish granules using minced meat and low cost technology. The final product was obtained by using the salt concentration of 12g/100gm of minced meat, boiling time of 10 min. and mixing time of 6 min at 100 rpm.

Final developed texturised dried fish granules were stored in 200 gauge polythene bags. During the four months storage period moisture content did not change much. The TVB-N values increased slowly but steadily reaching a value of 39.2 mg% after 4 months. No bad odor was developed during the period of storage. Peroxide value and free fatty acid value also increased slowly with storage period. The crude lipid content of dried granules was very low (1.56 %) and the peroxide value of 6.8 milliequivalent/1000 gm of oil and free fatty acid value of 11.5 % of oleic acid during 4 month storage period, did not impart any off odor to the product after 4 months of storage. The total bacterial count increased very slowly with storage period. There was no discoloration of the product during the storage. Chemical analysis and sensory evaluation showed that the product was in prime acceptable condition for four months of storage at ambient temperature.

The developed texturised fish granules from boiled fish minced meat which imparted good odor and texture to the fish granules. Boiling reduces the bacterial load considerably and denaturates the proteins. Use of 12gram salts per 100 gram of minced fish meat further denaturate the protein resulting in release of some moisture. Drying for 12 hours at 43-45⁰C reduce the moisture level to 6-7%. Due to low moisture level and high salt concentration the product was stable to four month. A well dried fish granule has a self life of several months and does not need any expensive facilities compared to frozen fish. If the raw material used is quite fresh, the quality of the dried fish granule is very good. When stale fish is used, the texture of the dried fish granule is quite soft and disintegrates with boiling in water.

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