Technique Evolved to Improve Colour and Texture of Frozen Squid and Cuttle Fish

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The Central Institute of Fisheries Technology has developed a simple technique to improve the colour and texture of frozen squid and cuttle fish which together constitute the second largest seafood item exported from India.

These products have to meet stringent quality requirements of international buyers. Hard and rubbery texture, and yellow discolouration are some of the problems encountered in frozen squid and cuttle fish.

The method evolved in CIFT to solve this problem consists in dipping the fillet/tube or whole of squid/cuttle fish in a treatment solution of 2-3 per cent good quality sodium chloride containing 0.2 per cent citric acid for 10-15 minutes followed by draining. The material is then wrapped in thin polythene films and frozen in a contact plate freezer at -40°C.

The quality of the products was studied for a period of over six months. The treated samples showed soft and firm texture, characteristic whiteness, and very good flavour over the control up to six months of storage at -20°C.

Experiments proved that replacement of citric acid with an equivalent quantity of lemon juice will give similar results.

The choice of the ingredients were arrived at after trying many organic acids like ascorbic acid, acetic acid, citric acid, lemon juice and salt combinations at varying levels. The best result was obtained from citric acid-salt combination.

A commercial scale trial was also done in a factory and proved to be successful.

For whole cuttle fish/squid as well as higher grades of fillet/tube the study suggests higher concentration of salt (3 per cent) and longer period of dip (15 minutes).

The export of frozen squid and cuttle fish showed a phenomenal increase in recent years. During 1989-90 the foreign exchange earning from cuttle fish and squid was around Rs. 76 crores.