

Studies on the Suitability of Frozen Oyster Meat for Smoking

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Oyster meat can be preserved by freezing, canning, marinading and pickling. Smoking the oyster meat imparts a special flavour and good appearance to the product and smoked oysters are a delicacy in many countries. In this paper, the suitability of frozen oyster meat for smoking is discussed.

Depurated oyster meat was shucked after steaming it. The meat was dipped in 2% brine containing 0.2% citric acid for 10 min, drained, packed in 2 kg cartons lined inside with polythene sheet, frozen in a contact plate freezer at -40°C and stored at -20°C . The samples were taken every month and were thawed in running water at 2 to

5°C and drained. The weight was taken before and after thawing. It was then dipped in 5% NaCl solution for 5 min and drained. The brined meat was spread over nylon wire mesh trays for smoking. It was smoked at $40-45^{\circ}\text{C}$ for 30 min initially and then at $72-75^{\circ}\text{C}$ for 75 min in dense smoke. The product was cooled to room temperature. The weight loss during smoking was determined by weighing it before and after smoking. The colour and appearance, flavour and texture were observed by a trained taste panel.

Changes in weight and sensory characteristics of frozen oyster meat and changes

Table 1. *Changes in sensory characteristics and weight loss during frozen storage and changes in weight of thawed meat on brining and smoking*

Period of storage, months	Weight loss on thawing, %	Organoleptic characteristics	Weight loss on brining % of thawed wt	Weight loss on smoking % of brined wt.	Yield of smoked product, % of initial wt.
0	10.37	Creamy white, tender, sea weedy flavour	-1.99	27.82	59.83
1	10.34	"	-1.77	30.22	57.67
2	10.88	"	2.12	32.54	54.48
3	12.48	White, soft and flavour reduced	3.64	34.13	49.76
4	15.53	"	4.38	36.71	43.39
5	17.35	"	5.25	37.64	39.76
6	21.73	Yellowish slightly hard and no odour	5.38	38.28	34.61
7	24.63	Light pink, slightly hard and no odour	6.29	40.32	28.76

in weight during brining and smoking of thawed meat are given in Table 1. The weight loss on thawing was about 10%, for the first two months and then increased and became 24.63% by seven months. During brining a weight gain was noticed upto one month frozen stored products and afterwards a decrease in weight was noticed. The weight loss during smoking increased proportional to the period of frozen storage and it was 27.82% initially and became 40.32% in the seven month stored meat.

The sensory characteristics also showed variations. For the meat kept in frozen storage upto 2 months, the colour of the meat was creamy, texture tender and flavour sea-weedy. These properties changed slowly and by 7 months storage the meat became slightly pink, texture hard, with no characteristic flavour.

The increase in weight during brining indicated the freshness of meat. When the protein is denatured there is a proportional increase in weight loss during brining (Sutton & Ogilvie, 1968; Gerasinov & Autonov, 1979). Smoking imparted a golden brown colour to the meat. The increased weight loss during smoking after a prolonged frozen storage is an indication of denaturation of protein and loss in water holding capacity. Hence the study indicates that good quality smoked oyster meat can be obtained from frozen oyster meat if the frozen storage period is short.

References

Gerasinov, G. V. & Autonov (1979) in *Technological Control in the Fish Processing Industry*. p. 104, Amerind, Pub. Co. Pvt. New Delhi.

Sutton, A.H. & Ogilvie, J.M. (1968) *J. Fish. Res. Bd. Can.* 25, 1475