

Control of Blow Fly Larvae Infestation in Cured Fish

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Curing is an effective and inexpensive method of preserving fish and suited to fisheries where other methods of preservation cannot be used due to lack of facilities. In many developing countries cured fish serve as a major source of animal protein. Cured fish production is faced with serious set back due to heavy insect infestation. Wet fish is very susceptible to infestation by blow fly. Blow fly larvae (maggots) consume lot of fish flesh during drying. On set of wet season magnifies the problem. Proper sanitation and hygiene measures can reduce the insect threat. Many insecticides are being tried to control infestation (Wood & Hallidy, 1983). The blow fly larvae infestation does not occur if the moisture content of cured fish is low. This critical moisture content depends on salt content of the cured fish. In the present study an attempt is made to control infestation of blow fly larvae by controlling the moisture and salt concentration in cured fish.

Sciaenid fish (75-100 g) were procured from the landing centre and brought to the laboratory in ice. Fish were gutted, split open, washed and dry-salted overnight with different amount of salt (1:4 to 1:7). The salted fish were dipped in water to remove adhering salt and dried in sun for 2-3 days. Samples were collected at regular intervals and stored in screw-capped transparent plastic jars for observation. Moisture and salt contents of the stored samples were estimated by AOAC (1975) methods. Stored samples were thoroughly

examined visually for the growth of blow fly larvae. 170 samples with different salt and moisture content were screened for the growth of blow fly larvae. The data were subjected to statistical analysis to find a correlation between moisture content and salt content in cured fish necessary to eliminate blow fly larvae.

Fig. 1 is the scatter diagram showing the relationship between moisture and salt content and insect infestation. The moisture content varied between 15.7 and 61.6% and the salt content from 4.2 to 22.4%. The points corresponding to infested samples and those corresponding to noninfested samples were found to form two separate sets with a well-specified border line (Fig.1). This line can be represented by the equation, $\text{Salt \%} = 0.335 (\text{Moisture \%}) - 0.768$.

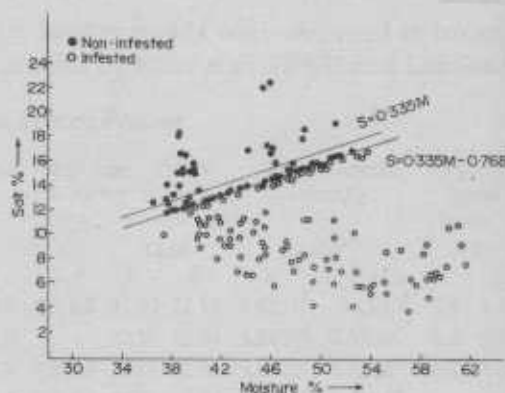


Fig. 1. Effect of moisture and salt content on insect infestation of cured fish

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By considering a line passing through the origin and parallel to the above line the relation between salt content and moisture content corresponding to the noninfested region can be further simplified as, Salt (%) $\geq$ 0.335 (Moisture %). The two lines are shown in Fig. 1. These definitions hold good for moisture content ranging between 34.4 and 52.4% and salt content ranging between 11.8 and 22.4%.

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