



Specifications of fish

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DESCRIPTION

Moisture and salt content in cured fish products from various centres on the west coast of India are compared. The moisture contents varied in samples from different centres, whereas the salt content remained more or less uniform. The deviations from the Indian standard specification were highly significant in both cases. The high mean moisture values and low salt values with respect to accepted standards are indicative of the improper drying and poor salting. Materials and methods analytical data of cured fish products, collected for 319 samples were statistically analysed for the study, covering six major cured fish centres on the west coast for the same period namely, Chavakadu, Calicut, Cannanore, Mangalore, Karwar and Goa. As the composition of fish varies from species to species, the drying procedure also is bound to vary and hence comparison between centres was made species wise. The mean moisture and salt values for each centre, the respective standard errors and 95% confidence intervals for the mean were worked out and compared. The deviations of the mean values from Indian standard specifications were tested using t-test.

The moisture values of different varieties of fish, standard errors and 95% confidence intervals for the means are furnished. Of the four centres from where samples of oil sardine were obtained, the highest moisture percentage of 50.96 was recorded at Calicut centre. The standard errors were found to be low and consequently the confidence intervals were narrow.

An average moisture level of 41.30% was observed at Mangalore while at Karwar, it was only 33.12% for white baits. For silver belly, the highest moisture was recorded at Calicut with 46.96% and the lowest at Mangalore with 29.93%. For sole also Calicut reported the highest moisture (52.83%) with Mangalore recording the lowest (25.47%). For both lactarius and mackerel, the values at Mangalore

were lower than that of Karwar.

In the miscellaneous varieties, the climate information services of Goa and Calicut almost coincide and hence they may be combined. Here also the Mangalore product reported the lowest moisture content. In general among the centres observed, the drying rate was maximum at Mangalore and minimum at Calicut.

Further analysis was carried out to study the variation, if any, of the observed moisture values from the accepted maximum standards. The deviations from the Indian standard specifications were tested by the t-test and were found to be highly significant ($p < 0.01$). The mean values were much higher than the accepted standards at all centres except Mangalore and Goa for silver belly. From this it is to be concluded that drying is improper in these centres especially at Calicut and varies from centre to centre.

The analysis of salt levels of products from various centres showed that the value for sardine was minimum at the Calicut centre (17.37%). The climate information services of Karwar, Chavakkadu and Goa are more or less identical indicating uniform salting at these three centres for sardine. For silver belly and sole also minimum salting was observed at Calicut (17.71% and 17.39% respectively) and the climate information services were overlapping.

The values at Karwar and Mangalore were different for both white baits and lactarius. For mackerel species higher and uniform salting rate was observed at Karwar and Mangalore. In general, the salting rates appear to be more or less uniform in most of the centres.

The minimum accepted salting standard is 25% which is much higher than the observed values and the application of t-test reveals that the deviations of the mean values at all centres were significantly different ($p < 0.01$) from Indian standard specification, which is an indication of the very poor salting procedure throughout the west coast.