

Effect of Various Salts on the Flavor of Fish Sauce

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Summary

A study on the effect of addition of different kinds of salts on the flavor of fish sauce was conducted. The acceptance of the product was investigated by sensory evaluation conducted in the Philippines. Natural salt and NaCl were used and KCl was added to both salts during fermentation. Two distillation methods were used; the simultaneous - distillation extraction method (SDE) and the steam- distillation under reduced pressure method (SDRP) to collect the volatile compounds. The volatiles were analyzed by gas chromatography and identified by co-chromatography. Sensory evaluation using preference and difference tests on the smell and taste of the fish sauces was carried out.

Results showed that in both the distillation methods, volatile acids were higher in the KCl added fish sauces than without the KCl added, in both the natural and NaCl mixtures. Although the values of volatile acids in the SDRP method were higher than the SDE, the tendency of the volatile acids in the KCl added sauces was similar. This phenomena suggested that KCl plays an important role in the formation of volatile acids in the sauce. Volatile acids were reported to be important contributor in the aroma of fish sauces.

Sensory evaluation revealed that there was a difference in smell and taste of the natural salt and NaCl mixed fish sauces, and furthermore, that of the KCl added to natural salt or NaCl mixed fish sauces. This difference in aroma might be partly attributed to the difference in the concentrations of volatile acids in the sauces. As to the difference in the taste, KCl by nature is bitter so that the high concentration in the sauce was apparently felt. There was no significant difference in preference between the smell and taste of all the samples except in the taste of the 60:40 ratio of the salts :KCl samples where the taste was more bitter. A 75: 25 salts:KCl ratio in the manufacture of fish sauce seems to be feasible. This study is just a preliminary one and more work is necessary before it can be put in actual application.