

Effect of Salt on the Salted-Koji Manufacturing Process and Quality

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Summary

Salted-koji is a seasoning which is made from koji, salt and water. The aging method of commercial salted-koji is to keep a few days at 50-60°C, whereas homemade salted-koji is kept longer period (a few weeks) at ambient temperature. The procedure of making amazake (Japanese traditional drink made from koji and water without salt) is similar to commercial salted-koji. So we decided to clarify the difference salted-koji from amazake and find optimum processing method of salted-koji.

By sensory analysis, there was a significant difference of aroma between salted-koji containing 13.0% NaCl and amazake ($p < 0.001$). The aroma among them changed continuously. The aroma of NaCl-added amazake was different from salted-koji, so generation of salted-koji flavor needs addition of NaCl before digesting of koji.

Protease activity of salted-koji prepared at 50°C which has higher NaCl concentration was kept higher, whereas α -amylase activity was lower. Production of reducing sugar was not affected by the concentration of NaCl. Salted-koji containing lower NaCl generated higher amino nitrogen.

When salted-koji was digested at 45-55°C, digesting temperature little affected generation of reducing sugar and amino nitrogen. α -Amylase was more deactivated by higher temperature. Effect of temperature on protease activity was weak. Stability of protease for temperature was higher than α -amylase.

Effect of storage temperature at 5-35°C was remarkable for α -amylase activity. α -Amylase activity was degraded at 35°C. Concentration of amino nitrogen was slightly increased at 25-35°C. Protease activity and concentration of reducing sugar weren't affected by storage temperature.

Digesting and storage temperature more affected α -amylase activity than protease activity. Therefore, to expect cooking effect of α -amylase, control of temperature during preparation and distribution is important.