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Physiochemical quality of low salted soybean paste made with different Koji by adding Aspergillus oryzae KACC 46471

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Statement of the Problem: Doenjang which is Korean traditional fermented soybean paste has the various functional activities such as hypertension, atherosclerosis, anti-mutagenic effect and anticancer effect. In recent years, many people are very concerned about excessive intake of NaCl result in disease including hypertension and diabetes. Researchers have reported that Meju or Doenjang made with starter in order to improve the quality of Doenjang. The purpose of this study is to develop the low-salted Doenjang using various made with Aspergillus oryzae. Methodology & Theoretical Orientation: In this study, we manufactured 4 kinds of Doenjang of the salt concentration of 8% using soybean, rice, and barley koji inoculated with Aspergillus oryzae KACC 46471 and determined the physiochemical characteristics for 12 weeks. Findings: As a result, the moisture content in all samples was 60% or less. The pH in soybean paste using soybean koji was shown the constant values, while those in soybean paste using rice and barley koji was gently decreased. Titratable acidity showed the increasing tendency during fermentation for 12 weeks. Reducing sugar increased gradually until 4th week, then gradually decreased, but the value was higher in Doenjang using rice and barley koji. The amino-type nitrogen content of Doenjang using soybean koji was higher than that of Doenjang using rice and barley koji. The ammonia-type nitrogen content in all samples was gently decreased during fermentation. Total aerobic bacteria in all samples were not changed at the level of 8.0 log CFU/g for 12 weeks and lactic acid bacteria decreased to 8 weeks and then detected at the 12th week. Conclusion & Significance: We found that 8% low-salted Doenjang using soybean koji was suitable for salt reduction in fermented foods. In further study, we try to establish manufacturing condition in order to manage change of quality depending on the fermentation temperature.

Biography

Yong Sik Cho is senior researcher and works at Fermented Food Science Division, Department of Agro-food Resources, National Institute of Agricultural Sciences, Rural Development Administration in South Korea. He received Ph.D degree in 2000 from Chungnam National University in South Korea and his thesis title was "Change on characteristics of bovine serum albumin, β-lactoglobulin and food proteins by γ-irradiation". His research areas are development of fermented food, specifically the studies on the separation of useful microorganisms for fermented food and bioconversion of food ingredients during fermentation process.

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