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Preparation and quality characteristics of seasoned semi-dried oyster

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Introduction

Oyster is a rich source of glycogen, taurine, mineral, vitamins and various extractable compounds and has been eaten as one of the most popular seafoods for many Korean. For the reason, many oyster farmer attempted on the development of aquaculture skill and the catch of oyster increased up to about 180,000 tons since 1998 in the south coast of South Korea. However, consumption of the oyster has, recently, decreased because of decrease in exports to Japan, USA and other country, limitary development of processed oyster products (raw oyster, frozen oyster, canned oyster and dried oyster) and avoidance of unique oyster flavour in new generation. In the sense, new challenges must be attempted to find a way to upgrade the amount of consumption of oyster, such as development of value-added oyster products with nutritional and health-functional benefits.

The objectives of this study was to examine on processing conditions of seasoned semi-dried oyster, one of value-added products and to investigate on its characteristics.

Materials and Methods

IQF (individual quick frozen) oyster was purchased from Daihung Fisheries Inc. located in Tongyeong, South Korea in July, 2005 and kept frozen at -25℃ until used for preparing seasoned semi-dried oyster.

IQF oyster was thawed, presoaked (5±3℃, 2 hours) in radish juice to mask the oyster odor, washed and drained before steaming for 5 minutes. The steamed oyster was soaked in hot-seasoning solution at 105℃ for 5 min and dried at 45℃ for 2-11 hours using a hot-air drier. The dried oyster was coated in 1% sodium alginate solution before re-drying (45℃, 1 hour). The products were finally packed in sealed retort pouches and sterilized.

The optimal preparation condition and quality characteristics of seasoned semi-dried oyster were examined by measuring the proximate composition, glycogen, volatile basic nitrogen (VBN), mineral, fatty acid composition, viable cell count, coliform group, Hunter color value, water activity, hardness, extractive nitrogen, free amino acids, total amino acids and sensory evaluation.

Results and conclusion

The objectives of this study was to examine on processing conditions of seasoned semi-dried oyster, one of value-added products and to investigate on its characteristics. Three types of semi-dried oyster were prepared : semi-dried (C, control) oyster prepared without seasoning, seasoned semi-dried (S) oyster, seasoned semi-dried oyster coated with alginate (SA). Seasoned semi-dried oyster coated with alginate (SA) as a value-added product was superior in quality to the other products. Moisture content (48.6%) of SA was high while, lipid (2.8%), crude protein (25.9%) contents was low when compared to those of C and S. Hardness and sensory scores of SA were 209.8 g/cm^2 and 3.9-4.5 points, respectively. Total amino acid content (24,299 mg/100 g) of SA was lower than that (27,181 mg/100 g) of C, and the major amino acids were aspartic acid, glutamic acid, leucine and lysine. The major fatty acids of SA were 16:0 and 18.:0 as saturates, 18:1n-9 as monoenes, and EPA (23.5%) and DHA (9.3%) as polyenes. The calcium and phosphorus contents of SA were 42.6 mg/100 g and 254.5 mg/100 g, respectively.

References

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