Effects of salt on the textural characteristics of fish meatballs prepared from deboned Asian carp meat

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Bighead and silver carp, commonly called Asian carp, are non-native fish that have negatively impacted North American waters including Kentucky Rivers and lakes. Harvesting Asian carp for human consumption has been proposed as one of the tools to reduce or eliminate Asian carp from Kentucky waters. Intramuscular bones in Asian carp has to be removed in order to attract American consumers. However, the process of mechanical deboning Asian carp destroys the structure of the fish muscle, limiting the options of products forms that can be made from Asian carp meat. Salt can solubilize muscle proteins and increase binding. The objective of this project was to determine optimum of salt concentration to increase binding in fish meat. Asian carp captured from Mississippi River were deboned and ground through 5mm screen by a commercial fish processor. Samples of Asian carp mince were mixed with salt at the concentration of 1%, 2%, 4%, 6%, respectively, and then blended for 30 minutes with a Blender (Kitchen Aid KSM75WH) with the speed setting at 4. Meatballs were formed manually, and heated in hot water at 80°C for 8 minutes. The hardness and stickiness of fish meatball were measured with Texture Analyzer (TX2 Plus). The hardness of meatball was increased from 370g to 630g by salt of 1% to 6%, meanwhile the stickiness also increased from 15g to 23g. At salt of 4%, the hardness is already 576g. The results suggest that 4% of salt may be needed to generate the necessary binding needed to form Asian carp meat meatball.