

Alginate and cuttlefish ink based caviar-like hydrogel beads as alternative to sturgeon caviar: Comparison of physicochemical properties

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Caviar is obtained from the roe of sturgeon fish of the Acipenseridae family and has a delicacy with high nutritional. The sturgeon's maturation period for obtaining roe takes long time and cannot meet market and consumer demand in recent years. Modern food processing techniques such as alginate hydrogel spherification technique is an alternative to produce caviar alternatives. In this study, caviar-like hydrogel beads as alternative to sturgeon fish caviar were produced from alginate hydrogel and cuttlefish ink using spherification technique. In order to develop sturgeon caviar alternative melanin-free ink (MFI) was extracted from processing waste of cuttlefish and added to alginate mix as antioxidant, colorant and fishy flavor. Physicochemical properties of caviar-like hydrogel beads produced from alginate by mixing MFI were compared with commercial caviar product. MFI ink contributed to taste, color and appearance of the caviar-like beads. In addition, caviar-like hydrogel beads produced in this study had long shelf life due to the antioxidant and antimicrobial properties of MFI. Our results suggested that the caviar-like beads made from alginate and MFI could be an alternative for sturgeon caviar with its functional properties and lower cost. Besides, the production of caviar-like hydrogel beads from alginate and cuttlefish ink can provide an opportunity for the sustainability of sturgeon farming by reducing the original caviar production.