Comparison of proximate composition and fatty acid profile of wild and cultured Beluga Sturgeon (*Huso huso* Linnaeus, 1758) muscle

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Abstract

This study was carried out to compare proximate composition and fatty acid profile in muscle of wild and cultured Beluga sturgeon (*Huso huso*). Total of four 3-year cultured Beluga specimens (average weight 7.0±0.4 kg) and four 3-year wild Beluga specimens with the similar weight were obtained and 1.5 kg of the dorsal body muscle form each specimen dissected. The muscles were minced and used in triplicate for determination of moisture, crude protein, crude fat, and ash content in each specimen. Crude fat of the same samples after extraction and esterification were used for identification of fatty acid composition in each fish. Comparison between the data of wild and cultured Beluga was done using T-test in significance level of less than 5 percent. There were no significant differences in the amount of protein and ash in Beluga muscle ($P>0.05$), while moisture and fat of cultured Beluga muscle with the amounts of 71.52±8.13 % wet weigh and 5.25±0.10% dry weight were significantly higher and lower than that in wild specimens, respectively ($P<0.05$). Besides, amount of palmitic acid, Myristic acid, and Docosapentaenoic acid in the cultured Beluga muscle was significantly higher than that in wild specimens, whereas erucic acid of wild Beluga was significantly higher than that in cultured one ($P<0.05$). No significant difference was observed in the amount of other fatty acids between wild and cultured Beluga muscle ($P>0.05$). Results of the present research illustrated that muscle of cultured Beluga had the same and in some cases higher nutritional value than wild Beluga.

Keywords: Great sturgeon, Protein, Fatty acid, Proximate composition.