

Study of heavy metals and feeding value in *Astacus leptodactylus*

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Abstract

This study aimed to assessment pollution status of the Giant Shrimp (*Astacus leptodactylus*) to heavy metal contamination and proximate composition of carcase. Shrimp sampling was conducted by Gargor net (conical cage) in Anzali port on summer 2010 and autumn 2010. Heavy metals measurements (Cr, Zn, Pb, and Cu) in shrimp samples were determined using Atomic Absorption System (Model PU 9400). Protein content was measured by Kjeldahl method, humidity content by using an oven, ash content by a stove and lipid extraction by the method of Bligh & Dyer (1959). According to the results obtained from biometric indices, total length of female shrimp samples caught on summer ranged from 118 to 135 mm (with an average length of 122.57 mm) while it ranged from 103 to 125 mm (with an average length of 113.11 mm) for male samples. Also, female samples had a length range of 120 to 145 mm (averaged 132.4 mm) but male samples showed a range length of 95 to 128 mm (averaged 114 mm) which were caught on autumn. Sexual ratio was assayed by Chi-square test. The test showed similar distribution rate (50 to 50) and there was $\chi^2 = 0.471$, $df = 1$, $P > 0.05$). Among) no significant differences between both sexes (χ^2 studied heavy metals, Zn indicated the highest amount in tissue samples of the male respectively) whereas Cr had the lowest amount and female shrimp (68 and 73.5 ppm,

in male and female samples (1.54 and 1.82 ppm, respectively). Zn showed the highest content in skin samples of male and female shrimp with average amounts of 2.8 and ppm, respectively while Cr indicated the lowest amount (averaged 2.8 and 2.46 2.46 respectively). Average contents of protein, humidity, ash and fat in male ppm, samples were 13.35%, 82.54%, 1.72% and 1.21%. In female samples, these amounts were observed to be 13.68%, 80.36%, 1.68%, 1.5%, respectively.

Keywords

Astacus leptodactylus, heavy metal, proximate composition.