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Iron content and *in vitro* availability of iron in cooked *Sardinella albella* and *Exocoetus volitans*

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Iron deficiency is one of the most common nutritional disorders prevailing in developing countries in particular. One of the major causes of the high prevalence of iron deficiency in low income countries is an insufficient iron intake as well as low bioavailability of iron in the diets. As Sri Lankans are more accessible to diets with a wide range of fish species, the objective of the present study was to investigate iron content and its *in vitro* availability in two small fish species *Sardinella albella* (Sudaya in Sinhala / Sudai in Tamil) and *Exocoetus volitans* (Piyamassa in Sinhala / Kolameen in Tamil). *In vitro* iron availability of cooked fish flesh was measured as iron solubility at physiological conditions according to the method of Svanberg *et al.,* (1993) with certain minor modifications. The total amount

of iron in the cooked fish flesh, cooked fish bones, cooking water was determined by using Atomic Absorption Spectroscopy. The data analysed statistically using MINITAB are given in the Table 1.

Table 1: Iron content and *in vitro* iron availability of cooked fish of *S.albella* and *E.volitans.*

Fish species	Cooked fish flesh μg/g, (DW)	Cooked fish bones μg/g, (DW)	Cooking water medium μg/ml	*In vitro* iron content μg/g, DW (cooked fish flesh)
E. volitans	199.1 ± 7.8[a]	191.9 ± 6.1[a]	21.0 ± 2.4[a]	56.1 ± 5.1[a]
S. albella	322.0 ± 6.0[b]	155.7 ± 10.3[b]	41.6 ± 4.0[b]	72.6 ± 4.5[a]

Mean values ± Standard error of Mean n = 3; a, b; Significance difference are denoted by different superscripts ($p < 0.05$). DW- on dry weight basis

The results show that the iron contents in the fish flesh ($p<0.05$) and cooking water medium ($p<0.05$) of *S. albella* formed after *in vitro* digestion were significantly higher than those of *E. volitans.* The iron content in bones of *E. volitans* ($p<0.05$) was significantly higher than that of *S. albella.* There was no significant difference ($p>0.05$) between the *in vitro* available iron content in these fish species. Although there was a considerable amount of iron in these fish species**,** the iron availability is lower. In fish bones of *E. volitans,* the iron content was found to be higher compared with other species studied**.** As it was difficult to remove the smaller bones in the flesh, the iron content in cooked fish flesh of *S. albella* gives a higher figure. As the cooking water medium contains a substantial amount of iron, the consumption of gravy in a fish curry along with the fish flesh may increase the amount of iron available to the consumer.

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