

**Fatty acid composition of Redclaw (*Cherax quadricarinatus*) tail meat**JG Buchanan<sup>1</sup>, DP Poppi<sup>1</sup> and D Fielder<sup>2</sup><sup>1</sup> Dept of Agriculture, University of Queensland, Qld 4072<sup>2</sup> Dept of Zoology, University of Queensland, Qld 4072

Crayfish farming is a relatively new industry which is expanding in Queensland. The fatty acid profile of Redclaw meat was examined, as this is an important feature of dietary recommendations for humans. Tail meat was taken from 14 animals (eight females, six males, distributed evenly across the weight range 10 to 90g). The animals were fed on an artificial diet either in pond or laboratory conditions. The diet had a crude protein content of 34%, with main ingredients being 45.5% fishmeal, 17.7% soyabean meal and 35.8% starch, by weight. Crayfish were killed, then weighed and a sample of tailmeat was removed for fatty acid analysis. Tail meat was homogenised in a blender and fat extracted in Chloroform-methanol by the method of Folch et al (1), with one modification in that 0.1% butylated-hydroxy-toluene was used as a preservative. A 1 mL sub-sample was methylated and the remainder used to determine total fat content.

Analysis was performed on a Hewlett-Packard GC using a silar 10-C FAME column using external standards (C16:0 to C22:6). The fatty acid proportions are shown in the table as percent, by weight, of the fatty acids detected.

Fatty Acid	C16	C16-1	C18	C18-1	C18-2	C18-3	C20-4	C20-5	C22-6
% by weight	18.1	3.0	14.9	29.0	13.3	3.6	6.9	7.5	3.7
SD	4.4	1.2	3.2	3.0	6.4	1.9	4.2	4.1	2.3

Redclaw meat had 33% saturated, 32% mono-unsaturated, 13.3% di-unsaturated and 21.7% poly-unsaturated fatty acids. The ratio of  $\omega$ -3 to  $\omega$ -6 fatty acids was 0.84 with linoleic acid providing the majority of the  $\omega$ -6 acids (66% by weight). Redclaw tailmeat is lower in poly unsaturated acids than appears in the crayfish species *Astacus astacus* and *Pacifastacus leniusculus* and has a higher proportion of saturated fats (2). In conclusion Redclaw meat has a high proportion of unsaturated fatty acids and  $\omega$ -3 fatty acids.

**References**

- 1 Folch J, Lees M, Stanley GHS. A simple method for the isolation and purification of total lipids from animal tissues. *J Biol Chem* 1957;226:497-509
- 2 Ackefors H, Castell J, Orde-Ostrom I. Preliminary results on the fatty acid composition of freshwater crayfish *Astacus astacus* and *Pacifastacus leniusculus*, held in captivity. *J World Aquaculture Society* 1997;28:97-105