

4.2 Morphometric differences observed between two populations of *Clarias brachysoma*, an endemic, edible freshwater fish of Sri Lanka.

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ABSTRACT

Clarias brachysoma is an endemic, edible, freshwater fish found in Sri Lanka. Several species of *Clarias* in other parts of the world are considered as suitable candidates for aquaculture. *Clarias brachysoma* also is a popular edible fish, however, it is not cultured in Sri Lanka mainly due to unavailability of seed for stocking. In trying to develop a breeding programme for *Clarias brachysoma*, preliminary studies were carried out to find out the size at maturity in order to select a suitable broodstock. Here, some significant morphometric differences were observed in samples of *Clarias brachysoma* collected from two river basins of Sri Lanka.

Samples of fish were obtained from Madu Ganga River Basin (Balapitiya) and Dadugam Oya River Basin (JaEla) in December 2005 to July 2006 and were maintained separately. Each fish in each sample was euthanized following the standard procedure. Before observing the gonads for maturity, morphometric and meristic characteristics such as length measurements of the body parts and ray counts of fins were recorded for each individual. All the data from two sets of fish samples were tested for normality and then were compared using two sample T-Test and Principle Component Analysis (PCA).

Significant differences of the measurements of body weight, total length, standard length, width of the body, length of the caudal fin, head measurements such as pre-dorsal length, head shield length, length of barbules and height of the body were observed for the two samples ($P < 0.05$). Significant differences were not recorded for meristic data ($P > 0.05$). However the clear separations were obtained from the PCA score plot of the first two principal component axes. Calculated length weight relationships were also different from each other for the two sets of samples. In the present analysis of morphometric data it clearly indicated that there were significant morphological differences in the two sets of samples of *Clarias brachysoma* collected from Madu Ganga River Basin and Dadugam Oya River Basin.

It would be interesting to carry out DNA analysis to see whether the morphological differences are due to heritable dissimilarities.