

Growth Performance of a Planktivorous Clariid, *Bathyclarias loweae*, in an Experimental Pond

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Introduction

The fish fauna of Lake Malaŵi has long provided fascination for fisheries scientists and hobbyists. It could hold as many as 1,000 species, many of which are endemic and undescribed (Lewis 1980). Recently, the need to supplement capture fishery production through aquaculture has become urgent. The aquaculture potential of some Lake Malaŵi species is under study, to avoid introductions of exotics which may have adverse environmental consequences. The biological attributes needed include: ability to breed in confinement, hardiness, satisfactory growth in confined conditions, ability to feed low in the foodchain (especially important to farming by resource-poor farmers), adaptation to overcrowding, resistance to common diseases and acceptability by consumers.

Bathyclarias loweae feeds on plankton and larval insects (*Chaoborus edulis*), locally called 'khungu' (Jackson 1960), which are abundant in Lake Malaŵi. It has long, close-set gill rakers, an adaptation to filter-feeding. Large individuals (80-100 cm) are known from the capture fishery. One form, locally called 'sapuwa', is believed to enter river estuaries during floods and may display similar breeding characteristics to *Clarias gariepinus*.

A First Culture Trial

A first culture trial was conducted in a 500-m² pond at the Domasi Experimental Fish Farm, near Zomba. Twelve fish were fed a 50:50 feed mixture of soyabeans and coarse maize bran (locally called 'madeya') twice daily at 3% body weight, six days a week for 219 days. An application of 25 kg lime was made to raise alkalinity from less than 14 mg/l to over 20 mg/l for good plankton growth.

A Gulland and Holt plot gave $L_{\infty} = 54.8$ cm; $K = 2.358$; $r^2 = 0.845$. The growth performance, according to the index, $\phi' = \log_{10} K + 2 \log_{10} L_{\infty}$, where K and L_{∞} are parameters of the von Bertalanffy growth equation (Pauly and Munro 1984), was 3.85: higher than that reported for *C. gariepinus* by Marshall (1990): 2.97-3.67. *B. loweae* can attain growth rates of up to 16.5 g/day and a specific growth rate (SGR) of 7.42%. In similar ponds in Malaŵi, mirror carp (*Cyprinus carpio*) of 219.6 g initial weight attained an SGR of 2.77% (5.0 g/day) when fed with chicken grower's mash.

Although this trial was only preliminary, it demonstrates the potential

for culturing fish other than tilapias in Malaŵi. More research is needed on the taxonomy, growth, reproduction, recruitment and feed requirements of *B. loweae* and other related species. Collaboration is invited with other scientists working on similar fish (e.g., *Heterobranchus longifilis*) in the hope that good aquaculture candidates can be found from among endemic tropical species. This will assist countries like Malaŵi, which cannot take advantage of the good growth characteristics of exotic species because of the need for conservation of indigenous fish stocks and habitats.

Acknowledgement

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References

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