Gillnet Selectivity of *Oreochromis mossambicus* (Peter) and *Oreochromis niloticus* (Lin.) (Pisces, Cichlidae) in Kantale reservoir, Sri Lanka.

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Abstract

Gillnet selectivity of two introduced fish species, *O. mossambicus* and *O.niloticus* (cichlidae) was determined in a small scale fishery at Kantale reservoir, Trincomalee district. The fish were caught by monofilament gillnets of stretched mesh sizes 6.4cm, 7.0 cm, 7.6cm, 8.2cm, 10.2cm, 11.4cm and 12.7cm and multifilament gillnets of 5.1 cm, 7.0cm, 7.6cm, 10,2cm and 11.4cm. The optimal lengths(Lopt) of the two species for different mesh sizes were determined by the Baranov-Holt method. The relationship between Lopt and meshsize (m) of gillnets for the two species are described by the following equations:

For the monofilament;

O.mossambicus Lopt=2.5905x – 1.8779 ($r=0.9807$, $p<0.001$)

O.niloticus Lopt=1.8136x – 8.0048 ($r=0.9307$, $p=0.005$)

For the multifilament,

O.mossambicus Lopt=2.2059x – 0.2654 ($r=0.9793$, $p=0.00127$)

O.niloticus Lopt=2.0055x – 4.6324 ($r=0.9723$, $p=0.00197$)

From the relationship between optimal length and mesh sizes of monofilament and multifilament gillnets for two cichilid species in reservoir shows that In 8.4cm stretch mesh size, for monofilament, optimum length of *O.mossambicus* and *O.niloticus* are 21.71 cm and 23.82 cm respectively and for a multifilament, optimum length of *O.mossambicus* and *O.niloticus* are 19.58 cm and 21.30 cm respectively.

Monthly variations of monthly mean salinity, mean pH and mean electrical conductivity with their lower and upper limits were assessed in this study. No significant monthly variation in Salinity , pH and electrical conductivity ($P>0.01$) was found. Mean phosphate concentration, nitrate concentration with monthly mean total catch of *O.mossambicus* and *O.niloticus* with their lower and upper limit were measured. No significant variations in phosphate concentration and total catch of *O.mossambicus*, total catch of *O. niloticus* and significant variation in nitrate concentration and air temperature, surface temperature and bottom temperature were measured.

Contents