

AN EXPERIMENT ON CULTURE OF MILKFISH *CHANOS CHANOS*
(FORSKAL) IN SALT-PANS AT VEPPALODAI, TUTICORIN

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ABSTRACT

Constructing ponds in a pAmairy reservoir storing sea water in production of common salt, an experiment was carried out during 1973-74 on culture of *Chanos*, without undertaking much management procedures or supplementary feeding. In one pond with stocking rate of about 75,490/ha, survival was about 44% and production was about 557 kg/ha/14 months, while in another pond with stocking rate of about 7,820/ha, survival was about 85% but production was only 318 kg/ha/11 months.

With the intention of examining the possibility of culturing Milkfish *Chanos chanos* in salt pans at Veppalodai, near Tuticorin (Nair, et al 1975), without undertaking elaborate management, such as pond preparation, manuring, etc (Bairdoh, et al 1972) or supplementary feeding and as a "byproduct" in manufacture of salt, an experiment was carried out there during 1973-74 and (the result is briefly recorded in the present note.

The site selected was about 2.5 km away from sea, at an elevation of about 2.5 m from sea level, inside one of the primary reservoirs (Figure 1, inset), used for storing sea water pumped in for the purpose of producing common salt. Four ponds, each of 22.75 m x 15.25 m were constructed, with a depth of 0.6 m. The embankments were 4.8 m wide at base, 1.2 m wide on crest and 1.2 m high. Lay out of the ponds constructed is represented in Fig. 1. The ponds were fitted with wooden sluices at even locations. Each sluice had a wooden shutter and a wooden frame of sieve screen, for controlling water supply.

Seawater supply to the ponds was effected by mechanical pumping through an earthen channel of about 1 km long. Surface water temperature in the ponds during the culture period varied from 24.8°C to 30.7°C; salinity from 22‰ to 39.2‰; dissolved-oxygen content from 1.8 ml/L to 3.4 ml/L; pH values from 7.92 to 8.6; and average monthly displacement volumes of total plankton from 3 ml to 30 ml. Crustacean larvae (mostly protozoa), mysids, copepods, euphausiids, *Lucifer*, *Acetes*, polychaete larvae, *Sagitta*, fish larvae, etc constituted the bulk of plankton biomass in the ponds. Phytoplankton were a few in number, composed mostly of species of *Coscinodiscus*, *Thalassiosira*,

Thalassiothrix, *Asterionella* and *Skeletonema*. Greenish periphyton, dominated by species of *Pleurosigma*, *Gyrosigma*, *Nitzschia*, *Oscillatoria* and *Phormidium*, was also present in the ponds, in small quantities.

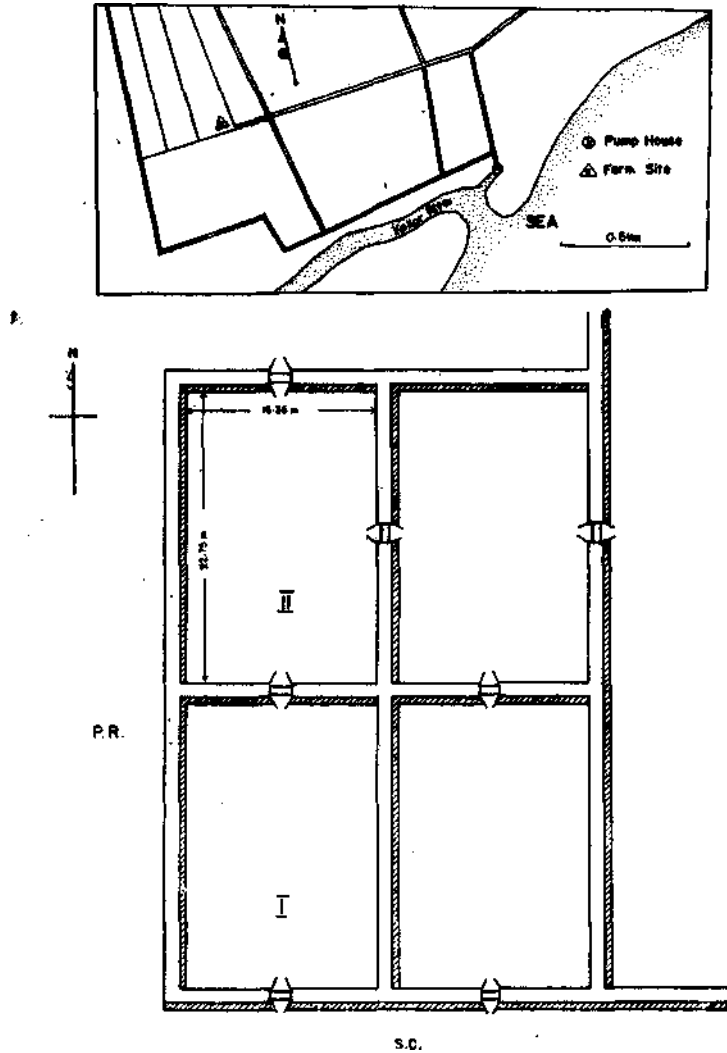


FIG. 1. Layout of the experimental ponds (Schematic is shown in the inset). I and II indicate the two ponds where *Chanos* were cultured. VR—Part of primary reservoir in which the ponds were situated. SC—supply canal.

Primarily, two of the ponds were utilized for experimental culture of *Chanos* during 1973-74. One handicap experienced in the culture experiment was the menace of predators such as birds, snakes and crabs, over which effective

control could not be exercised. Crabs and snakes present in the ponds as well as in the neighbourhood have caused frequent damage to the embankments, by burrowing.

Particulars of stocking and harvesting are given in Table 1, from which it may be seen that in the pond with stocking rate of 75,489/ha, production was 857.47 kg/ha/14 months, although survival was 44.04% and net growth was 80 mm per fish. But, in the second pond, with much lower stocking rate of 7,815/ha, production was only 318 kg/ha/11 months; but, survival was 85.53%. Higher mortality rate in the first pond was perhaps due to higher predation on the culture stock, caused by higher stocking density, while lesser mortality in the second pond may be due to lesser predation owing to lower stocking rate. It appears quite probable that under the ecological conditions prevailing in the saltpan areas, optimum growth, survival and production may be expected by resorting to a stocking rate somewhere between the two rates experimented.

TABLE 1. *Particulars of MUKfish stocked and harvested at Veppalodai during 1973-74.*

Experimental Pond No:	I	II
Month of stocking:	May 1973	August 1973
No; Estimated weight;	2,500;	211;
and Dominant mode of	18.5 kg;	5.15 kg;
stocking material:	95 mm	165 mm
Month in which additional	November '73;	October '73;
stocking was made;	504;	100;
No. stocked and weight:	5.5 kg	2.64 kg
No. and weight of fish	183;	61;
removed for sampling:	2.84 kg	2.41 kg
Month of harvest	July '74	July '74
No; Dominant mode;	1,140;	205;
and Weight of fish	175 mm;	235 mm;
harvested:	51 kg	16.41 kg
Net production:	29.84 kg	11.03 kg
Production rate	857.47 kg/ha	318 kg/ha
Survival rate in no.	44.04%	85.53%

Earlier experiments recorded so far on culture of *Chanos* in India are those of Chacko and Maibadevan (1956) in Krusadai Island, Tatnpi (1960) at Mandapam and Evangeline (1967) at Adyar (Madras). Only in the experiment undertaken by Tampi (1960) that survival and production are given, namely

9 to 11% of former and 212 to 455 kg/ha of latter. In the present experiment at Veppalodai, a survival of 44.04 to 85.53% and a production of 318 kg/ha/11 months to 857.47 kg/ha/14 months was observed. It appears quite probable that by undertaking much more management procedures as practised in Indonesia, Philippines and Taiwan (Bairdach et al 1972) and by giving adequate protection to culture stocks from predators in the saltpan areas, growth and production of the fish could be greatly enhanced.

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