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# Successful inoculation of *Artemia* and production of cysts in man-made salterns in the Philippines[1/]

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After initial laboratory tests using water from a saltpond in Barotac Nuevo showed very encouraging results, two concrete brine tanks of the salt factory were inoculated with 20 million *Artemia* nauplii and 30,000 young adults of the San Francisco Bay strain. Two hundred thousand were also inoculated in earthen fishpond where salinity of the water was 64 ppt and pH values ranged from 7.0 to 8.5. The inoculation of the earthen pond failed due to the seep in and out during tidal fluctuation making control of pond water salinity impossible. The entry of *Tilapia mossambica,* gobies and *Poecilia* could not be prevented and these preyed on *Artemia.*

In the brine tanks were there were no predators due to water filtration and high salinity, *Artemia* thrived very well. The nauplii grew to adults and the young adults originally inoculated began producing nauplii in the tank where salinity was 130 ppt. Tank water was aerated with an air compressor and large airstones. When population density reached 3,000/L half of the population was harvested with fine scoopnets and inoculated in two earthen-bottom concrete-walled ponds of 3,400 sq m area. The animals thrived well in the ponds at 45 cm water depth without aeration and without supplemental feeding. The animals fed on phytoplankton, benthic blue-green algae and detritus. Water temperature ranged from 25°C at night and 33°C. For the first time a mass kill was experienced and about 65 kg of dead *Artemia* (wet weight) were collected and frozen for later use. To avoid another mass mortality due to high temperature and intense solar radiation, coconut fronds were laid in 3 parallel rows along the sides of the concrete dikes. With this, no mortality was noticed even when water temperature was 2-3 degrees lower. This indicated that intense solar radiation with increased water temperature and its consequential effect of lowering dissolved oxygen level will cause a mass kill of *Artemia* in earthponds at 45 cm water depth.

At the end of the dry season in the locality, the total pond area inoculated with *Artemia* was 16,153 $m^2$ at an average water depth of 30 cm. The volume of cysts collected from the tanks and ponds was 25 kg (dry weight) and 150 kg of live *Artemia* which were frozen and later fed to milkfish and shrimps. There were live *Artemia* left in the ponds (unquantified) which were fed upon by milkfish fry when the ponds were utilized as nurseries. The same procedure was followed in 1979 with better results.

Trial runs made on feeding of *Artemia* decapsulated cysts, nauplii and young adults to milkfish fry from 0.024 g up to commercial size fish of 250 g resulted in high survival rates and fast growth. Fry recovery ranged from 80-95 percent as compared to the average of 65 percent in nurseries managed in the traditional way. A combination of *Artemia* and blue-green algae makes a very nutritious feed for milkfish fingerlings.

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Test inoculations of *Artemia* nauplii and adults in earthen ponds where water salinity ranges from 20 to 32 ppt during the start of the rainy season were successful. Sluice gates were fitted with fine mesh filter screens to prevent the entry of aquatic species which may prey on *Artemia.* Application of urea and triple phosphates enhanced the growth of minute species of blue-green algae which make good food for *Artemia.* Culturing *Artemia* in ponds adjacent to nursery ponds makes the harvest and transfer of the animals to nursery ponds easy during feeding. Inoculating the nursery ponds prior to stocking gave very good results.

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