ACCLIMATIZATION AND STOCKING OF FRY

by

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Acclimatization is the process by which one animal becomes adapted to an unfamiliar set of environmental conditions. It implies adaptation to all aspects of a new physical environment. The adaptation may be structural, behavioral or physiological. In the acclimatization of sugpo fry for stocking, the adaptation we are concerned with is physiological. Such adaptation entails actual changes in the body brought about by the environmental influences. It connotes a decrease in physiological strain as the sugpo continues to be exposed to the new conditions.

During the period of adaptation the fry may experience physical discomfort, an indifferent appetite and lack of energy. The sugpo fry in poor conditions may find their lot worsened by the strain. So it is well advised to make the shift between two widely differing environments in gradual stages.

Temperature and salinity are the two elements of greatest significance in acclimatization. Temperature is important in the environment because of its direct action upon the physiological processes of the sugpo, especially upon the rate of metabolism. Among the marine animals, it is generally observed that the rate of metabolism is much accelerated with rise in temperature(within favorable limit).

Salinity is an environmental fact or that affects the regulation of body fluid. The maintenance of the proper and stable internal fluid environment is relatively simple for marine animals as long as they remain in the sea, but it is quite a different matter when they move into hypoosmotic media such as the brackish water or estuaries.

Many marine animals are incapable of moving into such habitat. Since their body fluids always lose salts until they have about the same salinity and osmotic concentration as the external fluids, and since their cells generally can not tolerate much change in the make up of the fluid bathing them, these animals soon die when they are put into brackish water. For every native animals like sugpo, regulation of body fluid from marine to estuarine environment may not be as dangerous as for purely marine animals especially when the salinity difference between the two environments is not so wide. Although said animal is capable of withstanding remarkable range of salinity, it certainly functions best under circumstances where there is a reasonable degree of comfort and freedom from strain in vital organs.

The fry that will arrive the fishpond operators from the hatchery have already been subjected to temperature acclimatization. I am referring to the pre-transport treatment of fry which was discussed by our hatchery in-charge. So upon

arrival of the fry to fishponds, the first step of acclimatization is to equalize the water temperature of the fry container and that of the pond water where they will shortly be stocked. This is easily done by allowing the container to float or partially immersed in the ponds without untying the knc t that sealed its opening. When, after some time, the temperature of the plastic bag container has roughly equalize to the temperature in the pond, the acclimatization of salinity be started. This is effected by introducing pond water into the fry container in small quantity and allowing the pond water to mix with the H_2O in the container. When the container is full some of the H_2O is removed and pond water is gain introduced in the same manner. It may be necessary to repeat this process for some time (depending on the salinity differences) until after the salinities are approximately the same. The container is then tilted to let the fry escape into the pond.

In stocking the fry, one should see to it that they will be as evenly distributed as possible over the pond because the newly-stocked fry do not wander immediately in search for food. They remain where they are liberated for same time.

The acclimatization and stocking of sugpo fry may be done in nursery ponds or into the rearing ponds. We refer to the former as indirect stocking and the latter the direct method of stocking. At present there's not enough information

as to what the best method is. That we hopefully would know after this program is completely implemented.

There are several stocking rates observed by fishpond operators in shrimp farming and each of them merely indicate one standard because the stocking rate in nursery ponds and in rearing ponds largely depends upon availability of food and the production capacity of the ponds. According to Caces-Borja and Rasalan, the stocking rate in the nursery pond is 300,000 to 500,000 fry to a hectare in mono culture. A rearing pond with a good growth of "lab-lab" and provided with supplementary feed of animal protein can be stocked with 2 sugpo juvenile per square meter or 20,000/ha although the ordinary practice of fishpond owners is to stock the rearing pond with 1 sugpo/m^2 or 10,000/ha.

In the case of P. japonicus in Japan, Shigeno was reported successful in stocking 20-25 juveniles/m^2 of H_2O. A very remarkable rearing success was done by Fujinaga in which he stocked 150/m^2 of young shrimp. All these experiments were done under laboratory conditions.

In Naawan laboratory the first experiment on cultivation was stocked with 15-20 fry/m^2 or 150,000 - 200,000 fry/ha. At present we have three ponds each with a different stocking rate, namely: 1 sugpo/m^2, 2 sugpo/m^2 and 3 sugpo/m^2.

With the implementation of this cooperators' program we hope that we can gather enough data and information that thereafter will provide the necessary support in formulating and recommending the best suitable stocking rate for a particular kind of fishpond.