

How to Raise Prawns

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FEW PEOPLE know that prawns (more familiarly known as "suggo") are not only appetizing as food but nutritious as well. Nutritionists say that the large shrimps are rich in protein and can greatly improve

the national diet. But strangely enough, outside of the Bureau of Fisheries and a handful of fishpond operators, very little has been done to fully exploit prawn raising on a larger, industrial scale.

Studies show that fresh shrimps in the local markets are very inadequate compared to the demand for the seafood. The little supply that one finds in a few market stalls are drawn mostly from catches of trawls in Manila Bay, Lingayen Gulf, Malampaya Sound, Ragay Gulf, San Miguel Bay and fishponds in various provinces.

Statistics indicate that production of shrimps and prawns in the Philippines leaves much to be desired. In 1954, only 5.8 million pounds of the seafood was produced from Philippine seas and ponds. Commercial fishing vessels reported the following production of shrimps and prawns: For 1956: Manila Bay—560,142 kilos; San Miguel Bay—265,963 kilos. For 1957: Manila Bay—281,232 kilos; San Miguel Bay—425,547 kilos.

Since the demand for the seafood is great, what can be done to step up the production of prawns in the Philippines? Fishery experts reveal that prawn culture in ponds, with proper management methods, can be developed to yield a supplementary crop. With this method of production experts say that prawn fisheries have very promising commercial possibilities in the Philippines.

The prawn which thrives best in local fishponds with "bangus"



is the *Penaeus monodon* (Fabricius) or the "sugpo" as it is called in Tagalog. It is sometimes identified as the "tiger shrimp" because it is spotted like the tiger. The prawn is greenish brown, with brown spots scattered over its body. The maximum size of the adult prawn reaches up to 230 millimeters or more.

Prawns breed in the sea, outside bays or offshore about 10 to 12 miles from land. They choose places where the saltiness of the water, the depth and temperature are more conducive to their growth.

The female of the specie deposits its eggs freely in the sea. The females are differentiated from the males by their size. They are always larger, longer in length and heavier in weight than the males. Sex organs also help dif-

ferentiate them. The female has a rounded sex organ in its abdominal region called the "thelycum." The male has a clasper-like organ called the "petasma."

Fertilized eggs, deposited near the bottom of the sea, are first hatched. Then these pass intermediate stages before reaching adulthood. The diameter of the eggs range from 0.27-0.29 millimeters. Female prawns are known to deposit over a million eggs in one setting. In figures this ranges from 850,000 to 1,000,550 eggs or more.

A sort of metamorphosis takes place before it reaches the adult stage. First, the egg undergoes a change, the so-called "nauplius" stage. During this stage, the egg swims freely and is at the mercy of the currents and waves of the sea. After some time it reaches the "zoea" stage.

At this point, one takes note of the budding appendages of the prawn and its elongation. One can also differentiate its body organs such as the eye, carapace and telson.

The last stage in its larval history is the "mysis stage." Here, the prawn's growth is notably fast. Complete development takes place before it reaches the adult stage. Its more distinct characteristics appear. Once the prawns become adults, they thrive inshore or inside bays. By then they measure from 5-10 millimeters in length. At this point, they begin

to migrate into river mouths, estuaries and ponds where sea water is available.

EXPERTS SAY that prawns like to spawn from April to September. Prawns seem to spawn twice a year, considering the abundance of fry in river mouths throughout the year.

Because of the amazing growth of the *Penaeus monodon* prawn which grows thrice as fast as other species, its large scale cultivation in fishponds could mean a big impetus to the shrimp industry. Its rate of growth has been noted as even faster among the females than in the males. In this light; "sexual isolation" could be made possible in cultivation and culture. One could aim at hastening the rate of growth and shorten the time of cultivation for commercial purposes.



There are four commercially known prawn species which demand a high price at marketable size in the Philippines. These are the "sugpo or tiger shrimp" or *Penaeus monodon* (Fabricius); the "hipon-puti or white shrimp"; *P. indicus* (Milne-Edwards); the "hipon-bulik or spotted-groomed shrimp" *P. Canaliculatus* (Olivier).

The "sugpo" is largest in size, heaviest in weight and commands the highest price in the market. It costs as much as ₱6 a kilo or more in local markets. It also can be easily raised in fishponds in contrast with the other species. With a brackish fishpond, "sugpo" cultivation is possible.

TO RAISE prawns, one has to rid the ponds of all fish and animal life, except natural flora and fauna. This is done by dry-

ing the pond for a week or two. As a start, one has to collect fry from the river mouths since prawns do not deposit their eggs in ponds.

Collection of the fry is done by means of tying grass and weeds in bundles, then immersing them in water from 12 to 24 hours. The grass and weeds are then tied to a string at one to two feet interval. Its two ends are tied to two poles planted into the water. The fry cling to the grass and, by means of scoop nets of "sinamay" cloth, one can easily scoop the fry out and place these in native earthen jars or "banga" for transport to ponds. The earthen jar is ideal because of the cool temperature it offers while the fry is being transported.

During the spawning season, many fishermen catch fry for commercial reasons. One "banga" contains a hundred fry and sells for ₱10 or less per hundred. Fry abound from July to September and the wise fishpond operators purchase these for cultivation and culture at this time.

After collecting the fry, raising them in small tanks or ponds proves helpful to prevent a high rate of mortality before they are transplanted to the ponds. At the fishponds they grow very rapidly.

Experiments have proven that from the fifth to the sixth month, the "sugpo" attains a commercial size of about 70 millimeters up. This largely depends on the na-



tural conditions of the ponds during cultivation. One has to see that the ponds are rich in nutrient materials for the "sugpo" to feed on. The ponds have to be well taken care of. A constant change of water is done at intervals to maintain the natural saltiness of the water, the oxygen content of the water, the phosphate content of the water, etc. If the prawns are artificially fed, then the rate of growth could be tremendously hastened. Other factors to be considered are the algal growth, "phytoplankton" growth and other natural conditions of fishponds.

A study of the food and feeding habits of prawns shows that the "sugpo" feeds on minute floating plants in the water called "phytoplanktons," small worms in the mud, fish larva, floating animals called "zooplanktons," small shells, detritus and Foraminifera.

Foraminiferans are round minute animals found in the sea and brackish waters. During its early stages, the "sugpo" thrives on algae, minute plants and detritus. During its adult stage, it feeds on worms, shells, and other slow moving animals like the foraminiferans.

Artificial feeding is possible in prawn cultivation. Experiments indicate that the "sugpo" can feed on fish meat and mussel meat. Prawns are definitely omnivorous.

The "sugpo" thrives all over the

islands from Aparri to Jolo. Besides being raised in fishponds, the "sugpo" is one of the principal catches of otter trawls, beam trawls and "corral" fisheries. The best fishing grounds known are Lingayen Gulf, Manila Bay and many other coastlines as far south as Davao Gulf.

Prawns are best caught during nighttime. This is when they come out from their burrows to feed. The prawns are often called "demersal" animals because they live mostly at the bottom of the sea, mostly by burrowing in the mud.

IN THE Dagat-dagatan Salt-water Fishery Experiment Station in Malabon, Rizal, varied research projects on how to raise more prawns and other related biological aspects are being conducted. Physiological experiments on the best conditions where prawns live are also being made. Food and feeding habits are being checked. Growth rates and life cycles of this important fishery product are similarly being worked out.

The station saw its start in 1936 as a reservation for possible fishery experimental research as envisioned by the late President Manuel Quezon. However, it was only after the war that biological experiments were undertaken by Filipino scientists.—*Sunday Times Magazine*.

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