Capsules Nourish Crawfish Successfully In LSU Tests

Food scientists at LSU report initial success with experiments with food capsules for the feeding of shrimp and crawfish. Working under LSU’s Sea Grant Program, scientists in the food science and technology department and the fisheries division of the School of Forestry and Wildlife Management are giving special attention to the nutritional requirements of invertebrates, particularly red swamp crawfish. Experiments with a good pellet and a food capsule have caused considerable excitement among the scientists.

The campus research has utilized a fish protein concentrate and single-cell protein. Both were found to result in significant weight increases in both crawfish and shrimp.

Experiments with pellets and capsules are highly encouraging, Dr. Meyers states. The nutritional requirements of crawfish are totally unknown. The LSU professor says that ponds are fertilized occasionally with regular commercial fertilizers to increase production but that, except for earlier work at LSU, little is known about the effect of supplemental feeding on crawfish development. Under natural conditions crawfish eat dead and living plant and animal matter.

"In view of the comparatively small reserves stored in the bodies of shrimp and prawns," says Dr. Meyers, "the food supply is extremely important to reproduction and growth of the animal.

The feeding experiments are being conducted with a view to more efficient raising of crawfish and shrimp in impoundments. Dr. Meyers says that attention must be given to utilization of valuable low-cost animal and plant waste substrates and to the single-cell protein derived from this material.

Capsuled food offers considerable promise in that it also permits the use of beneficial additives. One ingredient which may become necessary is an antimicrobial additive to reduce the effect of disease and maladies caused by stress conditions of crowding in the comparatively confined areas of mariculture systems.

Dr. Meyers says the microcapsules may serve as an excellent vehicle for introduction of hormones and other expensive regulatory substances required in minute concentration to influence behavior and growth.

Microcapsules also may offer a solution to the feeding of larval crustacea. While larval shrimp feed readily on brine shrimp, problems include the factors of cost, availability, and overall food value. The use of algae as food for larval shrimp may be complicated by the ability of these microorganisms to absorb and concentrate such chemicals as DDT.

"A complete artificial food system such as is feasible in a microcapsule offers real and challenging opportunities," Dr. Meyers says.

He stresses that the data are preliminary but says that the results of the experiments to suggest guidelines for further testing and evaluation of diets for invertebrates. "Development of good feed conversion rates is essential to establishment of crustacean culture on an economically sound basis," he said.