

THE EFFECT OF ACCLIMATED TEMPERATURE ON THE ACTIVITIES OF ASPARTATE AND ALANINE AMINOTRANSFERASE AND GROWTH PERFORMANCE OF *CHANNA STRIATUS*.

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Three groups of *Channa striata* collected in May (summer), February, December (winter) were exposed to three experimental temperature i.e. 16°C, 21°C and 32°C respectively. The experimental fish along with the corresponding control fish, adapted to natural temperature were maintained with a formulated diet containing 45% protein for thirty days to find out the effect of temperature on the growth, feed efficiency and the activities of aspartate (AsAT) and alanine (AlAT) aminotransferase in liver, white muscle and serum. The feed consumption was found to decrease with decrease in temperature in both control and experimental fish. The growth of the fish was found to be higher in the February (control 2) and at an experimental temperature of 21°C with highest protein and feed efficiency. The AsAT activity was found to be higher in all the tissues in both experimental and control fish at all the temperatures than that of AlAT. Except the activity of AlAT in the liver of control fish, which remained almost same, the aminotransferases in liver and serum of both experimental and control fish were found to increase with the increase in water temperature. The AsAT of muscle increased significantly with the increase in the experimental temperature from 16°C to 32°C when the activity of AlAT remain unchanged. In control groups, the highest activity of muscle AsAT was observed in winter-adapted fish when the AlAT activity was found to be the same for summer - and winter - adapted fish.

THE ABORE MARINE RESERVE (NEW CALEDONIA) - 5: COMPARISON OF DENSITY, BIOMASS AND SIZE STRUCTURE OF FISH COMMUNITIES.

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Two studies of the coral reef fish population of Abore marine reserve were performed, the first one in August 1993, when this area was protected and two years later, in August 1995, when part of the reef was opened to fishing. Three biotopes were identified: the reef flat, the inner slope and the 'forest'. During this study the length, the density and the biomass of fish were estimated using underwater visual census transects. During the period between 1993 and 1995, the results show that the average length of species decreased. This trend is systematically more important in the fished area, and mainly for species of commercial interest, than in the reserve. The density of fish increased in the protected area (2.9 vs. 4.4 fish/m²) opposite to the fishing zone (5.4 vs. 4.9 fish/m²). The decrease in biomass observed during this period, in the reserve (321.1 vs. 253.3 g/m², 21% less) is less important than in the area opened to fishing (454.7 vs. 294.2 g/m², 35 % less). In each biotope these general trends are confirmed. As shown by the results, these differences are due to the opening of part of the reef to the fishing, but also to environmental change in the substrate and also benthos. Correlations between the trophique structure of the fish assemblages and their environmental parameters are also presented.

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