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A study was conducted to assess the food value of certain selected zooplankters to the post larvae of banana prawn, Penaeus merguiensis, during November 1985 - September 1988. The salient findings of the investigation are given under:

1. Six zooplankters namely, Brachionus plicatilis Muller (Rotifer), Artemia nauplii (Branchiopoda), Nitocra orientalis Sewell (Harpacticoida), Pseudodiaptomus annandalei Sewell (Calanoida), Githona sp. (Cyclopoida) and Ceriodaphnia cornuta Sars (Cladocera), were selected for the experiment. Except Artemia all other zooplankters were isolated from samples collected from Kali estuary and freshwater ponds of Karwar, the stock cultures of the same were maintained in the laboratory.

2. An increase in production rates for rotifer, B. plicatilis were observed in salinities from 25 to 40 °/oo with an optimum at 30 °/oo S. Lowest doubling time (Dt) and highest instantaneous growth rate (K), production (ml⁻¹ d⁻¹) and population density were recorded at optimum salinity.
3. Production rates of harpacticoid copepod, *N. orientalis* increased between 10 and 25 °/oo S, but the highest instantaneous growth rate, maximum production and lowest doubling time, were noticed at 15 °/oo S.

4. In calanoid copepod, *P. annandalei* the highest instantaneous growth rate, production and population density while lowest doubling time were observed at 20 °/oo S. However, production parameters were found at an optimum salinity conditions of 15 °/oo.

5. Second degree of polynomial regression indicated that the doubling time, instantaneous growth rate and production in different salinities are significant (P<0.05).

6. The growth of rotifer was found to vary with different cell densities of algae, *Chlorogibba trochisceaformis*. At 50 x 10⁶ cells ml⁻¹ the rotifer showed the lowest doubling time, highest instantaneous growth rate, production and population density.

7. The harpacticoid copepod was experimented to test its dietary preference to five feeds, namely, *C. trochisceaformis*, ground nut oil cake, baker’s yeast, compound feed and detritus originating from decaying weed, *Holofilia vorialis*. 
Among all the feeds, the ground nut oil cake was found to be the best feed showing the maximum production 
(0.247 ± 0.02 ml\(^{-1}\) d\(^{-1}\)).

8. Calanoid copepod was cultured with five different feeds, such as algae, \(G.\) *trochisciasformis*, mixed 
diatom, baker's yeast, compound feed and detritus originating from decaying *H. vovialis*. The maximum 
population density of calanoid copepod was obtained with algae, \(G.\) *trochisciasformis*.

9. The cladoceran, \(G.\) *cornuta* was experimented with four different feeds \(v.i.s\)., *Chlorella* sp., baker's yeast, 
ground nut oil cake and compound feed. Amongst these, 
the baker's yeast gave maximum cladoceran production 
\((1.994 ± 0.3\) ml\(^{-1}\) d\(^{-1}\)).

10. The mass culture of zooplankters \(v.i.s\)., rotifer, 
harpacticoid copepod, calanoid copepod, cyclopoid 
cepode and cladoceran were carried out in their 
ideal salinity and suitable feeds.

11. In mass culture system the growth patterns of different 
zoooplankters varied with each other, whereas a steady 
increase in growth in cladoceran was observed.
12. The culture techniques as followed in the present study for the mass culture of zooplankters appears to be economically viable in the shellfish and finfish larval hatcheries.

13. There was a great variation in proximate constituent in protein, lipid, carbohydrate and ash content of the food organisms which varied from 46.80 - 60.34%, 19.00 - 21.82%, 4.94 - 8.73% and 9.35 - 13.45% respectively.

14. The calorific value was found to be maximum in Artemia nauplii (5.658 K cal/g), followed by mixed zooplankton (5.652 K cal/g), harpacticoid copepod (5.475 K cal/g), calanoid copepod (5.450 K cal/g), rotifer (5.455 K cal/g), cladoceran (5.335 K cal/g) and cyclopoid copepod (5.210 K cal/g).

15. Amino acid composition of all the zooplankters analysed in the present study possessed a substantial amount of essential amino acids.

16. The amino acid profiles were compared through ratio of EAA/NEAA and it was found that from the ratios that the profile of amino acid was best in harpacticoid copepod (0.78), followed by Artemia nauplii (0.69),
Evaluation of feed efficiency experiment of test zooplankters for the post larvae of *P. marquensis* was carried out in 3 groups. In group I (i.e. 1 - 10 days) the post larvae showed a maximum increase in length with harpacticoid copepod, whereas the *Artemia* nauplii enhanced maximum dry weight. Maximum survival was observed with *Artemia* nauplii and rotifer. In group II (i.e. 11 - 25 days), the control diet (mixed zooplankton) influenced the maximum growth in post larvae, followed by *Artemia* nauplii and rotifer. In group III (i.e. 26 - 50 days), the larvae fed with *Artemia* nauplii showed maximum increase in length and dry weight, while the maximum survival was observed only with cyclopoid copepod.

Growth was positive with all the feeds but variation existed in each group. The post larvae exhibited a change in their food choice from first group (1 - 10 days), to second (11 - 25 days) and to third (26 - 50 days).
19. In all the test zooplankters, the concentration of protein, carbohydrate and lipid were found adequately enough for the post larvae of P. merguiensis.

20. The results have shown that for a successful hatchery operations of P. merguiensis, the post larvae from 1 to 10 days can be reared exclusively on harpacticoid copepod (N. orientalis) and for the later stages (i.e. 11 - 25 days and 26 - 50 days) Artemia nauplii or rotifer (E. plicatilis) can be used as food. Since Artemia nauplii and E. plicatilis are equally suitable for rearing the post larval stages, the latter can very well replace the former in view of its high cost. On the other hand, the harpacticoid copepod can replace the rotifer to derive better survival rates.