D-53 The effect of three different diets on the post-prandial metabolic rate in Juvenile *Penaeus indicus* (Milne-Edwards)

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The oxygen consumption of juvenile *Penaeus indicus* (2.5 - 4.5 cm total length) fed with fresh mussel mantle tissue (D_1) and 2 commercial pelleted diets (D_2 & D_3) were measured at 28°C and 34 ppt salinity using a polarographic oxygen electrode and oxygen meter, to assess the effect of quality and quantity of the diets upon the post-prandial oxygen consumption, Specific Dynamic Action (SDA) or energy cost of food utilisation.

The height of the peak of SDA, duration of SDA, total energetic magnitude of SDA were dependent on the type of food while the time taken to reach the peak was independent for *P.indicus*. The percentage increase in oxygen consumption above basal metabolic rate for *P.indicus* being highest (26.9%) for high protein pelleted diet and least (14.7%) with the low protein fresh mussel mantle flesh. The duration of SDA varied significantly with the 3 different diets. The duration of SDA for mussel flesh was nearly twice as long as that of either of the 2 pelleted diets. The magnitude of SDA for *P.indicus* followed a significant linear relationship with meal size with a steeper slope for diet 3. The results suggest that the proportion of energy required for food utilization is significantly lower for fresh mussel tissue (6.65%) than for artificial diets (8.96% and 13.42%) D_2 & D_3.

From the present experiment, it is apparent that the low protein animal origin diet is well balanced in that it produces minimal energetic wastage and applicable for such prawns in aquaculture.

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