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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: An Analysis of Biological Characteristics of *Macrobrachium rosenbergii* (de Man) in Relation to Pond Production and Marketing in Thailand

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Abstract: Data on production and marketing of giant freshwater prawn were collected over a 7-month grow-out period through collaboration with a medium-sized commercial prawn farm in central Thailand. Juvenile prawns with an average weight of 4.2 g were stocked at a density of 6 prawns/m² in three 0.5-ha earthen ponds. Average growth rate determined during the first 3 months of the grow-out period was 0.4 g/prawn per day; prawns of marketable size were harvested selectively during the remaining 4 months of the rearing period, resulting in a total accumulated yield of 1.3 tonnes/ha with an average prawn weight of 32 g and 60% survival. As different sexes and sizes of prawns were sold at different prices, the harvests were customarily sorted into several categories: large, medium, and small males, long-clawed males, soft shells, females with eggs, females without eggs, and terminal males. The total weight and number of prawns recorded for each of these categories showed that the female to male ratios were 1.6:1 and 4:1 by weight and number, respectively while the ratio of short to long-clawed males was 3:1 by weight and 4:1 by number. Four percent of the marketable population was termed "soft shells" and 64% of the females bore eggs. The ratio of head weight to tail weight of marketable prawns varied substantially among the different categories: 1.0:1 for females, 2.5:1 for long-clawed males, and 1.6:1 for short-clawed males. Females predominated in the first and second 1.5-month harvest periods while males predominated in the final 1.5 months of the harvest. The economic yield of prawn culture was not only determined by the biomass, but also by the population structure of the various biological categories and the harvest season.

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