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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Semi-Intensive Commercial Grow-Out of *Penaeus vannamei* Fed Diets Containing Differing Levels of Crude Protein During Wet and Dry Seasons in Honduras

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Abstract: Shrimp were grown under ideal management conditions during two distinct seasons of the year at stocking densities used most often in Honduras with the objective of evaluating the usefulness of high protein diets. A randomized design in 2×2 factorial arrangement was used to test a diet composed of either 20 or 40% crude protein in earthen ponds that were stocked with juvenile *Penaeus vannamei* at 5 to 11 / m². The study was repeated during wet and dry seasons. Dietary protein level had no significant effect ($P > 0.05$) on survival, yield, or average weight of shrimp production during both seasons. Mean shrimp weight in high density ponds were significantly lower than mean shrimp weight in low density ponds during the wet season, but there was no significant weight difference because of stocking density during the dry season. Net income was negative during the dry season, particularly at the high stocking density during the dry season. Net income was negative during the dry season, particularly at the high stocking density. Mean production was 240% greater in the wet season than in the dry season. Diets offered *P. vannamei* stocked at 5 to 11 / m² should contain no more than 20% protein, regardless of season. Higher dietary protein levels increase costs and waste nitrogen without resulting in greater shrimp yields. The high stocking density might increase profitability in the wet season, but long term sustainable production may be more feasible at lower stocking rates because of reduced nutrient wastes.

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