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Title: Cause of cyclic variation in Honduran shrimp production

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Abstract: Relationships among stocking, harvest, and environmental variables for two commercial shrimp farms in southern Honduras were evaluated using stocking date as the time of reference. Data were analyzed from consecutive production cycles during 1986 to 1991 in Farm A and 1988 to 1991 in Farm B. Stocking ponds during March to June and November to February resulted in good and poor shrimp yields, respectively. Step-wise regression analyses revealed that survival, stocking density, salinity, and temperature accounted for up to 80% of the total variation in shrimp yield. The environmental variables alone could account for only a third of total variation. A similar analysis of a monthly means, which emphasized time related variation by minimizing inter-pond variability, revealed that temperature (75 to 85%) and percentage of stocked *P. vannamei* accounted for up to 88% of total monthly variation. Effects of salinity were minor. The majority of variation in shrimp yields within a farm was related to non-environmental factors whereas cyclical variation over a calendar year was primarily related to temperature and proportion of stocked *P. vannamei*. Climate cannot be controlled, but farm management can take its predictability into account.

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