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## Management of stocking density, pond size, starting time of aeration, and duration of cultivation for intensive commercial production of shrimp *Litopenaeus vannamei*

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A dynamic stock model was used for quantification of shrimp production and analysis of alternative management schemes of stocking density, pond size, starting time of aeration, and duration of cultivation for intensive commercial production of the shrimp *Litopenaeus vannamei*. Databases from Mexican farms were used to calibrate the model. Multiple linear regression models were employed to establish relationships between parameters of the stock model and the management variables. Water quality variables (dissolved oxygen, temperature, and salinity) were complementarily analyzed. The final weight of shrimp was directly related to duration of cultivation and dissolved oxygen, and inversely related to stocking density, pond size, and salinity. There were inverse relationships between the growth coefficient and temperature and dissolved oxygen and between mortality rate and temperature. Dissolved oxygen was significantly related to starting time of aeration. Simple linear regression and an equivalence test indicated that biomass at harvest (after 13 weeks in winter, and 20 weeks in summer) was adequately predicted by using the stock model and the multiple regression models. The highest production (winter, 6900 kg ha

Palabras clave: *Litopenaeus vannamei*, Farming Management, Shrimp production

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