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The College of Graduate Studies and the College of Science Cordially Invite You to a

Master Thesis Defense

Entitled

EFFECT OF FEEDING FREQUENCY AND STOCKING DENSITY ON TILAPIA OREOCHROMIS NILOTICUS AND LETTUCE LACTUCA SATIVA PRODUCTION IN AQUAPONICS SYSTEM UNDER UAE CONDITION AND BUSINESS ENTERPRISE ANALYSIS

by

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Abstract

Global food security and the search of new resources is becoming increasingly important nowadays. Aquaponic systems that integrate aquaculture and hydroponics is a fast-emerging food production technology. It is capable of producing different fish species and vegetables simultaneously. The purpose of this research thesis is to optimize the daily fish feeding frequency and stocking density in a specified area of a the aquaponic system that was used to produces *Tilapia Oreochromis niloticus* and *Lettuce Lactuca sativa* . Further objective, is to investigate the impact of feeding frequency and stocking density on the quality of the final products of the system, knowing that they are strongly related to the availability of nutrients in the solution. Feeding frequencies of (1, 2 and 3 times per day) and stocking densities of (100,120 and 140 fishes per cubic meter) were used while measuring different water quality parameters at specified intervals. In addition to that, enterprise budget analysis was developed for the different experiments performed in order to predict the business efficiency and profitability of the system. It was found that the system is capable of achieving net incomes as high as AED 34,394 and AED 46,637 for the highest used feeding frequency and stocking density respectively.

Keywords: Aquaponic system, feeding frequency, stocking density, *Tilapia Oreochromis niloticus , Lettuce Lactuca sativa* , Enterprise Budget Analysis.