



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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التوثيق الإلكتروني والميكروفيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY



Biochemical evaluation of fungi-degraded date pits as a feed ingredient for *Liza ramada* fingerlings

A thesis

Submitted for the award of the degree of Ph.D in Biochemistry

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Declaration

I declare that this thesis is my own work and that, it contains no material previously published or produced by another party in fulfillment, partial or otherwise, of any other degree or diploma at another university or institute of higher learning.

Basma Hassan Ahmed Moustafa

Dedication

*To my husband Mohamed Morsy and my friends for
their love, encouragement, help and prayers that made
studies possible and to them i owe everything.*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا نك لا علم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

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Abstract

This study aimed to perform a comparison between date pits (DP) and *Trichoderma. reesei* fermented (fungi fermented) date pits (FDP) as a dietary component, to use it as a cheaper high-energy feed ingredient to increase the growth rate, and to determine the probiotic possibility of FDP supplementation for fingerlings *Liza ramada*. Diets contained different concentrations of date pit (DP), and fermented DP diets (FDP) as a replacement for dietary corn, were used to feed *Liza ramada* fingerlings (0.65 g initial weight) for 6 weeks. The specific growth rate remained unchanged at a concentration of 5% with DP, then, it was decreased by increasing the concentration of DP. A highly significant increase in growth rate was detected by increasing the concentration of FDP ($p < 0.001$), reaching its maximum at 450 gkg^{-1} . Hemoglobin depletion occurred comparing to the control during the DP feeding, whereas, it was inclined with increasing the FDP concentrations. Serum glucose levels showed no significant change during feeding with DP but it was increased during FDP feeding. Serum triglycerides of fish fed with FDP was highly increased, that explained the increase in muscle lipid. Serum cholesterol levels were decreased in fish fed with DP, while increased with that fed FDP. It worth mentioning that no previous studies were examining pathogen resistance of cultured *Liza ramada* associated with DP and FDP

supplementation in a diet. This study enhanced the necessity to use FDP in diets to support fish health and to improve the biochemical parameters of fish, also to lessen the intestinal harmful bacteria (*Salmonella spp.*, *Campylobacter spp.*, *Shigella spp.* and *E. coli*) count, and increase growth rates.

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