

VOLUME 7, NUMBER 3  
SEPTEMBER, 2006

ISSN 1595-6881

# *African Scientist*



Journal of the Nigerian Society for  
Experimental Biology

2

**KLOBEX**

VOLUME 7, NUMBER 3  
SEPTEMBER, 2006

ISSN 1591-6881

*African  
Scientist*

KLOBEX

# African Scientist

Published by Klobex Academic Publishers for the Nigerian Society for Experimental Biology

## EDITOR

Professor C. O. Bewaji, Department of Physiology & Biochemistry, University of Ilorin, Nigeria

## EDITORIAL ADVISORY BOARD

A. Aboderin (Uyo)  
M. A. Akanji (Ilorin)  
E. O. Akinrimisi (Lagos)  
J. I. Anetor (Ibadan)  
F. Awolaye (Ilorin)  
E. O. Ayalogu (PH)  
E. A. Bababunmi (N.Y.)  
A. A. Bakare (Ibadan)  
E. A. Balogun (Ilorin)

A. A. Biu (Maiduguri)  
E. I. Braide (Calabar)  
C. O. Diribe (Abakaliki)  
J. N. Egila (Idah)  
T. S. Emudianughe (Ilorin)  
C. N. Fokunang (Oxford)  
J. Kayode (Ado-Ekiti)  
A. A. Odewumi (Zaria)  
A. A. Odotuga (Okada)

J. A. Ogunwale (Ilorin)  
Z. S. C. Okoye (Jos)  
F. A. Oladele (Ilorin)  
G. Olaoye (Ilorin)  
J. O. Olowookere (Ede)  
E. E. A. Oyedunmade (Ilorin)  
L. T. Zaria (Maiduguri)

## AIMS AND SCOPE

The journal will publish original research papers and review articles which are of interest to scientists and the general public on the continent of Africa in particular and the rest of the world in general. It will also highlight the work of African Scientists, past and present, in various parts of the world.

## SUBSCRIPTION INFORMATION

African Scientist is published quarterly by Klobex Academic Publishers, Ilorin, Nigeria. For libraries, University Departments, Research Institutes and other multi-reader Institutions, the subscription rate is as follows:

Volume 7 (2006) 4 issues: £35/\$50/₦5,200

(Prices include postage, packing and handling)

Specialty reduced subscription rates: In order to maximize the dissemination of the scholarly articles published in this journal, individuals are encouraged to take a personal subscription to the journal at a specialty reduced rate of ₦800 or equivalent per copy + ₦100 for postage and handling.

*Subscription enquiries should be addressed to:*

Klobex Academic Publishers, 7 Fasada Shopping Complex, Tanke Tipper Garage,  
University Road, P. O. Box 4216, Ilorin, Nigeria.

© 2006 Klobex Academic Publishers

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher, Klobex Academic Publishers, University Road, P. O. Box 4216, Ilorin, Nigeria.  
It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. Upon acceptance of the article the author(s) will be requested to transfer copyright of the article to the publisher. Such transfer will encourage the widest possible dissemination of information.

# African Scientist

Volume 7, Number 3

Contents

September, 2006

- AFS 2004013/7301  
Thread blight disease of tea [*Camellia sinensis* (L.) O. Kuntze] caused by *Marasmius pulcher* (Berk & Br.) patch in the South Western Nigeria.  
A. R. Adedeji..... 1107
- AFS 2006022/7302  
Relationship between gallstone disease and serum lipids in normal adult Nigerians.  
A. B. Olokoba, B. J. Bojuwoye, I. A. Katibi, A. K. Salami, K. T. Braimoh,  
A. K. Inikori and L. B. Olokoba..... 113
- AFS 2006023/7303  
The effect of type 2 diabetes mellitus on fasting gallbladder volume.  
A. B. Olokoba, B. J. Bojuwoye, I. A. Katibi, A. K. Salami, L. B. Olokoba and K. T. Braimoh..... 117
- AFS 2002005/7304  
Conservation of *Ocimum gratissimum* in rural communities of Ekiti State of Nigeria and its use in self-medication  
Joshua Kayode ..... 121
- AFS 2006005/7305  
Nutritive value and utilization of water hyacinth (*Eichhornia crassipes*) meal as plant protein supplement in the diet of *Clarias gariepinus* (Burchell, 1822) (Pisces: Clariidae) fingerlings  
J. E. Konyeme; A. O. Sogbesan and A. A. A. Ugwumba ..... 127
- AFS 2006014/7306  
The land snail diversity in a square kilometre of tropical rainforest in Okomu National Park, Edo State, Nigeria  
O. C. Oke and F. I. Alohan..... 135
- AFS 2006016/7307  
Economic assessment of losses due to parasitic diseases common at the Maiduguri abattoir, Nigeria  
A. A. Biu, M. I. Ahmed and S. S. Mshelia ..... 143
- AFS 2006021/7308  
Use of neem (*Azadirachta indica*) aqueous extract as a treatment for poultry coccidiosis in Borno State, Nigeria  
A. A. Biu, S. D. Yusuf and J. S. Rabo..... 147
- AFS 2006026/7309  
The effects of used engine oil pollution of soil on the growth and yield of *Arachis hypogea* L. and *Zea mays* L.  
S. K. Abdulhadi and A. H. Kawo ..... 155

AFS 2006005/7305

## Nutritive value and utilization of water hyacinth (*Eichhornia crassipes*) meal as plant protein supplement in the diet of *Clarias gariepinus* (Burchell, 1822) (Pisces: Clariidae) fingerlings

J. E. Konyeme<sup>1</sup>; A. O. Sogbesan\*<sup>2</sup> and A. A. A. Ugwumba<sup>3</sup>

<sup>1</sup>College of Education, Abraka, Delta State, Nigeria

<sup>2</sup>National Institute for Freshwater Fisheries Research, P.M.B. 6006, New Bussa, Niger State, Nigeria

<sup>3</sup>Department of Zoology, University of Ibadan, Ibadan, Nigeria

(Received March 7, 2006)

**ABSTRACT:** 120 fingerlings of *Clarias gariepinus* were fed five different experimental 35% isoproteic diets, a control (0% water hyacinth) and four diets containing different levels of water hyacinth (10%, 20%, 30% and 40%) in place of fish meal as protein source at % of the body weight for 70 days under laboratory condition.

The study revealed a decrease in the growth performance indices as the level of water hyacinth increases. The highest weight gain (3.67g/fish) and specific growth rate (0.84%) and lowest weight gain (3.08g/fish) and specific growth rate (0.54) were recorded from fish fed the control diet and 40% water hyacinth inclusion respectively. There was no significant difference ( $P \leq 0.05$ ) between the weights gains recorded for the fish fed all the experimental diets. The cost of feeds production decreases as the inclusion levels of water hyacinth increases. Highest Net Profit of N224.07 was recorded from fish fed 30% water hyacinth supplemented diet. Based on the result of this experiment, the 40% inclusion levels of water hyacinth as fish meal supplements is recommended in a practical diet of *C. gariepinus* for good yield and profitability.

**Key Words:** Water hyacinth; Fish meal; Growth performance; Cost benefits; *Clarias gariepinus*.

### Introduction

The undersupply and high cost of conventional pelleted fish feed has severely constrained the development of low-cost aquaculture system suitable for small-scale farmers in the developing world (Kusemiju and Akingboju, 1988; Fagbenro and Arowosegbe, 1991) hence the need to assess the potential of non-conventional fish feed ingredients such as water hyacinth – *Eichhornia crassipes* (Mart).

\*To whom correspondence should be addressed.