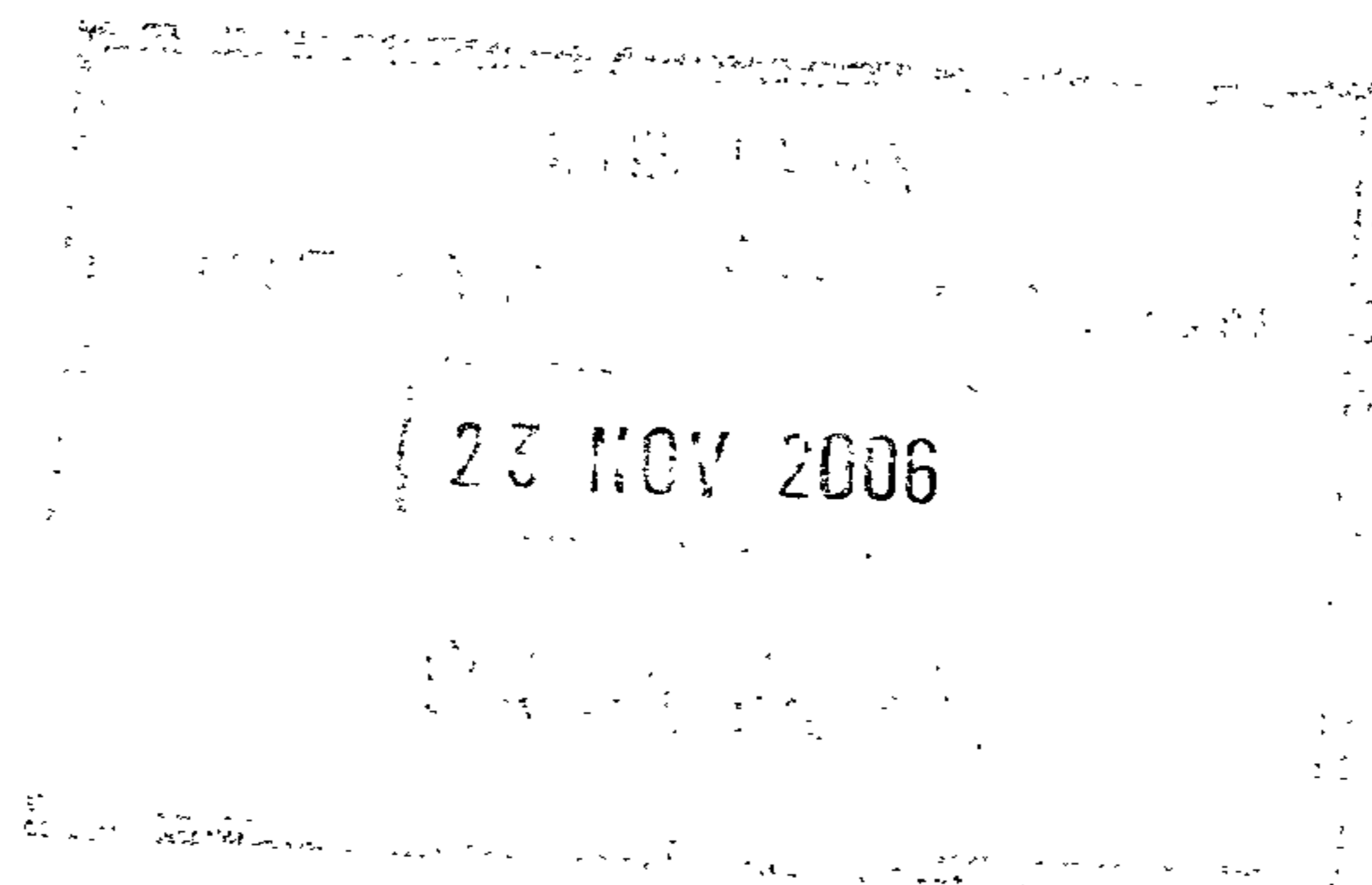


PROCEEDINGS

of the
Sixteenth Annual Students Research Session
Department of Animal Science
October 28, 2006



Faculty of Agriculture
University of Peradeniya
Sri Lanka

Editors
Suranga P Kodithuwakku
A R S B Athauda

TABLE OF CONTENT

	Page
Agrostology Traditional Agriculture and Aquaculture	
01. DEVELOPMENT OF ROUND BALE SILAGE UNDER DRY ZONE CONDITIONS <i>C. Kodikara , S. Premaratne and Samantha R. Silva</i>	1
02. DEVELOPMENT OF MANURE STORAGE SYSTEM TO REDUCE ENVIRONMENTAL POLLUTION AND ENHANCE VALUE OF CATTLE MANURE AS FERTILIZER <i>M.H.M.M.T. Maddegoda, A.N.F. Perera, G.G.C. Premalal, K.A. Perera and Chandima Thundeniya.</i>	3
03. BIODYNAMIC FARMING AND SRI LANKAN TRADITIONAL AGRICULTURE <i>D.M.A.C. Dissanayake, A. N. F. Perera and</i>	5
04. THE TRADITIONAL KNOWLEDGE USED IN COTTAGE DAIRY PROCESSING IN SRI LANKA AND PRESENT STATUS OF COTTAGE LEVEL DAIRY PROCESSING IN KANDY DISTRICT <i>B.H.S.P. Sandanayake , A.N.F. Perera , B. Dissanayake and L. P. A. S. Jayawardene</i>	7
05. MORPHOLOGY, FEEDING AND REPRODUCTIVE BIOLOGY OF ENDEMIC WALKING CATFISH (<i>Clarias brachysoma</i>) OF SRI LANKA <i>D.N. Gunawardhana and U. Edirisinghe</i>	9
Meat Science and Dairy Technology	
01. DEVELOPMENT OF CHICKEN MEAT BASED SAUSAGES WITH OYSTER MUSHROOM <i>L. Bavatharane , H. W. Cyril and N. Lalantha</i>	11
02. DEVELOPMENT OF MUSHROOM BURGERS <i>M.Z.K.F. Farhana and H.W. Cyril</i>	13

03. CONSUMER BEHAVIOUR AND CUSTOMER BUYING PATTERN OF BROILER CHICKEN MEAT IN SRI LANKA <i>R. Kularathne, Prof. H.W. Cyril and Mr. Kapila K. Rajapakshe</i>	15
04. YIELD AND QUALITY OF MECHANICAL DE-BONED CHICKEN MEAT (MDCM) <i>A.K.E. Madhusarani, H.W.Cyril and A. Kalubowila</i>	17
05. DEVELOPMENT OF A PROCESSED CHEESE SPREAD WITH HIGHER SENSORY QUALITIES AT LOW COST FOR THE LOCAL MARKET <i>M.P. Aluthgedara and K.F.S.T. Silva</i>	19
06. COMPARISION OF MICROBIAL INHIBITION DURING RAW MILK PRESAVATION BY ACTIVATION OF LACTOPEROXIDASE SYSTEM (LPS) IN TWO AREAS WITH DIFFERENT AMBIENT TEMPERATURES <i>J.L.V.C. Jayasinghe & K.F.S.T. Silva</i>	21
 Animal Biotechnology and Reproductive Physiology	
01. MORPHOLOGICAL AND GENETIC CHARACTERIZATION OF THAWALAM CATTLE IN UVA PROVINCE <i>B. A. I. K. Bulumulla and Pradeepa Silva</i>	23
02. IDENTIFYING THE CORRECT TIME OF ARTIFICIAL INSEMINATION IN WATER BUFFALOES (<i>Bubalus bubalis</i>) IN RELATION TO SYNCHRONIZATION WITH PROSTAGLANDIN. <i>M.F.M. Fazny, Taku Kawai, Suranga P. Kodithuwakku, A.S. Weerasinghe and Missaka P.B. Wijayagunawardana</i>	25
Final year research projects conducted during year 2000-2005	27

MORPHOLOGY, FEEDING AND REPRODUCTIVE BIOLOGY OF ENDEMIC WALKING CATFISH (*Clarias brachysoma*) OF SRI LANKA

D.N. Gunawardhana and U. Edirisinghe
Dept. of Animal Science, Faculty of Agriculture,
University of Peradeniya.

INTRODUCTION

Clarias brachysoma (Walking catfish) is a freshwater endemic fish of Sri Lanka, which is listed as a threatened species under IUCN, 1999 Red Data List (IUCN, 2000). It belongs to Family Clariidae, which widely occurs throughout most of Africa and Asia. *C. brachysoma* adults are olive-green brown or yellow with small irregular dark spots as large as its eye. In contrast, young ones are dark brown or copper red in colour. Body elongated and laterally compressed. Head depressed. Terminal mouth. Broad snout. It possesses four pairs of barbels (Deraniyagala, 1952). Most of endemic fish species are getting extinct from the world due to habitat degradation, pollution, unscientific fishing, urbanization and introduction of exotic fish species into freshwater and brackish water habitats. The goals of this study were to find out important morphological characters, Condition Factor variations with the change of habitat, feeding habits and reproductive biology.

MATERIALS AND METHODS

Fish samples were collected from Kothmala Oya. Fish were kept in equal sized glass tanks with aeration to acclimatize to artificial conditions. Body colouration variations, adaptability and Condition Factor of fish for artificial conditions were determined using live fish. Feeding trials with Wild guppy, tilapia, carodina and formulated feed were carried out. Morphological characters were measured in sacrificed fish and they were dissected to measure gut content and calculate fecundity.

RESULTS AND DISCUSSION

Acclimatizing period was found to vary with the age of Walking catfish. Adult fish took 1-2 weeks while young fish took 1-2 months to adapt to the artificial environment. During acclimatizing period, they completely refused to feed. Afterwards, they started to predate on live feeds. Fish

took another 2 weeks after the acclimatizing period to consume formulated feeds. An average adult Walking catfish having a mean weight of 142g require >8g/day of live feeds. Their feeding preference can be ranked as Wild guppy, tilapia, carodina and formulated feed, where latter is the least preferred. The maximum total length of tilapia, which a fish of 142g can predate, was 7.8 ± 0.3 cm. There were irregular but significant dark spots present on the dorsal side of the body as found in the literature. Variation in body colouration was not observed under laboratory conditions. Relative Gut Length was (0.91 ± 0.03) cm. Gut content analysis revealed the presence of detritus and small fishes. Condition Factor of the fish collected from the natural habitat was 0.0088 ± 0.0002 where as the laboratory reared fish after 2 months was 0.0073 ± 0.0002 . It is difficult to differentiate male from female morphologically. The fecundity was around 50,000eggs/kg of fish and all eggs were of the same development stage inferring that *C. brachysoma* is a serial spawner. Hence, development of a better ration has become mandatory for an artificial breeding programme.

CONCLUSIONS

An average adult *C. brachysoma* of 142g requires >8g/day of live feed and it predated on tilapia having a total length of 7.8cm. Wild guppy was the most preferred of the tested feeds. Gut content analysis inferred that *C. brachysoma* is a bottom feeder. It was observed that Condition Factor of laboratory reared fish is lower than the fish caught from natural habitats. It implied that the culture system should be improved to obtain better Condition Factor. Since all the eggs were of the same stage, *C. brachysoma* is a serial spawner and sexes can not be separated morphologically.

REFERENCES

Deraniyagala, P.E.P (1952) A colored atlas of some vertebrates from Ceylon. Vol. (1) (Fishes). pp.54-55. The Ceylon Government Press, Ceylon.

IUCN (2000) The 1999 List of Threatened Fauna and Flora of Sri Lanka. IUCN, Colombo pp.144.