EFFECT OF DIETARY SUPPLEMENTATION OF INORGANIC PHOSPHORUS ON FEED INTAKE, PROTEIN INTAKE, FEED CONVERSION AND PHOSPHORUS GAIN/LOSS OF THE HYBRID AFRICAN CATFISH Heterobranchus b dorsalis (♂) X Clarias gariepinus (♀) FRY

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ABSTRACT

Sixteen experimental diets were formulated to include four groups of inorganic phosphorus (P) sources {monosodium phosphate (MSP), monopotassium phosphate (MPP), monocalcium phosphate (MCP), and dicalcium phosphate (DCP) at four levels {A(0.40%), B(0.60%), C(0.80%) and D(1.20%)}). Two controls of a non-phosphorus supplemental diet (CD) and a purified diet (PD) were fed along with the other 16 experimental diets to the fry of Heterobranchus bidorsalis X Clarias gariepinus hybrid (mean weight, 1.5 ± 0.12 g) at 5% body weight per day for 70 days. The results showed that the feed intake (FI), the protein intake (PI), the food conversion ratio (FCR) and the phosphorus gain/loss (PGL) varies significantly among the 18 diets tested (P < 0.001). The effect of the inorganic P sources on FI, PI, FCR and PGL was also significantly different (P < 0.001). The MSP supplemented diets appeared to elicit better responses in the fish than any of the other P-supplemented (MCP, MPP and DCP) diets. A comparatively higher quantity of protein was consumed by the fish fed the MSP diets (15.28%) than other P-supplemented diets. A loss in the percent phosphorus content of fish flesh fed MSP diet was observed (-0.04%). Based on the above, MSP diets were the best for enhancing growth.

Keywords: Inorganic phosphorus, Heterobranchus bidorsalis X Clarias gariepinus, Catfish hybrid, Protein Intake, Food Conversion Ratio

INFLUENCE OF MILKING FREQUENCY ON LACTATION CHARACTERISTICS OF RED SOKOTO GOATS

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ABSTRACT

The study was carried out to determine the consequences of milking frequency on total yield, average-daily yield, peak day, flow rate, dairy merit and persistency in Red Sokoto goats. Thirty lactating does were divided into three categories on milking frequencies, once a day, twice a day and thrice a day milking of 10 animals each. All the does were at
their third lactation and were hand milked for a period of 120 days postpartum. Over the 120 days lactation period, total yield, average daily yield, peak yield, peak day, flow rate, dairy merit and persistency were 55.5±2.95 kg, 0.466±0.025 kg, 0.791±0.042 kg, 33.8±4.01 d, 3.7±0.25 g/d, 10.6±0.21 % and 96.1±7.92 %. Milking frequency significantly (P<0.05) influenced total yield, average daily yield, peak yield, and milk flow rate, but not peak day, dairy merit and persistency. Milk yield characteristics increased with milking frequency, but at a decreasing flow rate. In Red Sokoto goats milking frequency affected milk yield characteristics but not dairy merit and persistency. The high lactation persistency of these goats was an indication of their ability to maintain milk production throughout lactation.

**Keywords:** Milking frequency, Milk yield, Dairy merit, Lactation persistency, Red Sokoto goats

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**PHENOTYPIC CHARACTERISTICS OF THE AFRICAN GIANT SNAIL, Archachatina marginata SWAINSON**

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**ABSTRACT**

Observations were made on ‘gigantism’ and albinism in the giant snail, Archachatina marginata. Gigantic snails were initially about twice the size of normal snails of same age. However this growth superiority of ‘gigantic’ snails apparently slowed down with age. Albinism in the snails was expressed in form of creamy-white bodies instead of the normally brownish colour. Albino snails however retained normal shell colouration. All offspring of these albinos maintained these same characteristics. There was no difference in mortality rates of albino and normal snails. ‘Gigantism’ and albinism have serious implications for commercial snail farming.

**Keywords:** Albinism, Archachatina marginata, Giant land snail, Gigantism

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**EFFECT OF FEEDING Hordeum jabatum HAY SUPPLEMENTED WITH Leucaena leucocephala ON NUTRIENT DIGESTIBILITY IN SHEEP**

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**ABSTRACT**

The fermentation profiles and nutrient digestibility of Leucaena leucocephala as a supplement to Hordeum jabatum hay was investigated using twelve castrated sheep averaging 24.4 ± 2.2 kg body weight (BW). Six of the sheep were fistulated at the rumen...
and used for ruminal pH, ammonia and volatile fatty acid determination in rumen fluid. Dried leaves of Leucaena leucocephala were offered as supplement at two levels, 25% (diet 2) and 50% (diet 3) of dry matter intake (DMI), replacing Hordeum jabatum hay diet. The basal hay diet without supplementation was diet 1. Rumen liquor was sampled one hour before, and one, three and five hours after the morning feeding. The sheep were subjected to digestibility trial. Sheep on diet 3 had higher (P<0.05) ruminal pH than sheep on diets 1 and 2, respectively. The ruminal ammonia concentration of sheep on diet 2 was superior (P<0.05) to those on diet 1 but not with diet 3. Diet 1 had superior (P<0.05) volatile fatty acid concentration than diets 2 and 3, respectively. There were no differences (P>0.05) in the dry matter, organic matter, neutral detergent fibre, acid detergent fibre and hemicellulose intake among treatments. There were however, significant (P<0.05) differences in the digestibility of nutrients among treatments. It was concluded that dried leaves of Leucaena leucocephala has a forage potential for livestock farmers. It can be classified as a plant of moderate fodder value.

**Keywords:** Leucaena leucocephala, Rumen parameter, Nutrient digestibility, Wethers

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**LENGTH-WEIGHT RELATIONSHIP AND CONDITION OF FRESHWATER SHRIMPS Atya gabonensis AND Macrobrachium felicinium FROM THE MU RIVER, MAKURDI, NIGERIA**

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**ABSTRACT**

Length-weight parameters (a and b) of the equation: \( W = aL^b \) were estimated for two freshwater shrimp species Atya gabonensis and Macrobrachium felicinium caught bimonthly from October 2001 to March 2002 using brush traps in the Mu river. The mean \( b \) values were 2.989 ± 0.328 and 3.003 ± 0.318 for A. gabonensis and M. felicinium respectively. The values did not differ significantly (P < 0.05) from 3, showing that their growths were isometric. M. felicinium where in better condition than A. gabonensis.

**Keywords:** Length-weight, Relationship, Condition factor, Atya gabonensis, Macrobrachium felicinium, Mu river

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**ENDEMICITY OF MALARIA AMONG PRIMARY SCHOOL CHILDREN IN EBONYI STATE, NIGERIA**

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**ABSTRACT**

A study was undertaken to determine the prevalence of malaria among primary school children in Ebonyi State. The degree of malaria parasite, infection and species of the parasite isolated were used to determine the level of endemicity of the disease. Out of one thousand and two hundred (1,200) primary school children aged between 5 - 16 years sampled, the prevalence rate of 40.08% was recorded. The species of the parasite associated with the disease was Plasmodium falciparum. It was observed that the rate of malaria parasitaemia was higher in younger (aged 5-10 years) than those of older (aged...
A test conducted on the infection rate according to ages of the pupils showed significant difference between the age groups indicating that infection was age dependent (P < 0.05). Greater number of males (243) than females (238) were infected but the infection rate according to sex was found not to be significant and therefore not sex dependent (P > 0.05). Among the Local Government Areas, Ivo had the highest prevalence rate. This was followed by Ishielu and Abakaliki local government areas of Ebonyi State. The results showed that malaria is endemic in the state and a major health problem for school children. The possible effect on academic performance was discussed.

Keywords: Malaria, Prevalence, Children, Endemicity, Parasitaemia, Ebonyi State


RELATIONSHIPS BETWEEN PHYSICAL BODY TRAITS OF THE GRASSCUTTER (RODENTIA: THRYONOMYIDAE) IN AKPAKA FOREST RESERVE, ONITSHA

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ABSTRACT

Physical body traits of nine grasscutters (Thryonomys swinderianus Temminck) were characterized using body weights (BW), body length (BL), heart girth (HG), and height-at-withers (H). Simple linear correlation matrix showed high, positive and significant values among the parameters studied (P < 0.01). The highest coefficient was obtained for body weight and body length (r = 0.9956). The very high associations for body length and heart girth (r = 0.9821) and between body length and height (r = 0.9905) indicate that frame size and absolute height were complementary. Selection for increased measurement in any of the parameter would mean positive significant influence on the other and would lead to increased skeletal stature with concomitant increases in other absolute body measurements. Regression equations from this study could be used to estimate live body weights of grasscutters aged between 2 -10 months.

Keywords: Grasscutter, Physical Body Traits, Estimation, Correlation and Regression Models


EVALUATION OF TAMARIND (Tamarindus indica) SEED MEAL AS A DIETARY CARBOHYDRATE FOR THE PRODUCTION OF NILE TILAPIA Oreochromis niloticus (L)

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ABSTRACT

A feeding study was conducted to assess the value of Tamarind, Tamarindus indica seed meal as dietary carbohydrate in the diets of Nile Tilapia, Oreochromis niloticus. Tamarind seeds were used to replace maize at 0, 20, 40, 60, 80, 100 % substitution levels for treatments 1 to 6. Growth trial was conducted in outdoor concrete tanks for 56 days. The
Fishes were fed at 4% body weight twice daily. There were no significant variations in the mean weight gain, specific growth rate (SGR), food conversion ratio (FCR) and protein efficiency ratio (PER) \((p > 0.05)\). The apparent digestibility coefficient (ADC) of protein and energy of the fishes fed diets 1–6 were similar \((p > 0.05)\). There were no significant differences in the blood total erythrocyte counts (TEC), pack cell volume (PCV) and red blood cells count (RBC) \((p > 0.05)\). Based on the findings, complete replacement of maize with tamarind seed meal in the diets of O. niloticus is recommended.

**Keywords:** Tamarind, Replacement, Maize, *Oreochromis niloticus*

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**SEX DISCRIMINATION AMONG FOUR MORMYRID SPECIES OF ANAMBRA RIVER SYSTEM NIGERIA**

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**ABSTRACT**

Sex discriminating characters of four mormyrid species caught from Anambra river basin, Nigeria were investigated. Sexual dimorphism occurred in only one transformed character - dorsal fin base length and in four raw morphometric characters namely total length, standard length, dorsal fin base length and anal fin base length. These characters are recommended as key characters in mormyrid taxonomy.

**Keywords:** Mormyridae, sex dimorphism, Anambra river

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**LIPID COMPOSITION OF TWO MARINE FISHES - Scomber scombrus AND Trachurus trachurus**

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**ABSTRACT**

Lipids from two species of marine fish - *Scomber scombrus* and *Trachurus trachurus* were investigated. Fish oil from *Trachurus trachurus* had higher oil yield than that of *Scomber scombrus*. The lipids contain high levels of triacylglycerol 228 – 250 mg%, cholesterol 160 - 235 mg%, and phospholipids 2.2 - 2.4 mg%. Saponification of the different oils yielded saturated and unsaturated fatty acids, such as palmitic, oleic linoleic acids. Hexane and methanol were found effective solvents for separation of fatty acids from the fish oil.
FACTORS AFFECTING GROWTH AND BODY MEASUREMENTS OF THE GRASSCUTTER (RODENTIA: THRYONYMOI DAE)

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ABSTRACT

Overall mean body weights (0.138 ± 0.06 and 0.513 ± 0.03 kg), body lengths (17.24 ± 0.30 and 21.68 ± 0.65 cm), heart girths (12.57 ± 0.18 and 16.83 ± 0.90 cm), and height-at-withers (7.39 ± 0.14 and 9.86 ± 0.52 cm) of the grasscutter (Thryonomys swinderianus Temminck) at birth and 60 days of age, respectively, were recorded. Litter size and sex significantly influenced body weight and linear body measurements in the grasscutter. Mean birth weight (0.173 ± 0.02 kg) of rats born singles was significantly different from that of twin births (0.135 ± 0.08 kg) and triplets (0.135 ± 0.09 kg) (P < 0.05). Male grasscutters with a mean birth weight of 0.148 ± 0.01 kg were heavier (P < 0.05) than the females, which weighed 0.128 ± 0.02 kg. Average daily weight gain for the first 60 days for males (0.007 kg/d) was significantly different from that of females (0.005 kg/d) (P < 0.05). Parity had no significant effect on the rat's birth weight, weight at 60 days of age, and average daily weight gain for the first 60 days. Litter size, sex and parity did not have significant effect on the linear body measurements of the grasscutter at birth (P > 0.05). However litter size and sex had significant influence on body length and heart girth of the grasscutter at 60 days of age (P < 0.05). At 60 days the mean body length (23 ± 0.28 cm) and heart girth (18.13 ± 0.23 cm) of rats born singles were longer and larger than those of twins (21.66 ± 0.89 and 16.82 ± 0.76 cm) and triplets (21.59 ± 0.96 and 16.71 ± 0.80). Males also have longer body length and larger heart girth than females at that age.

Keywords: Grasscutter, Growth, Body Weight, Linear Measurements

COMPARISON OF CLINICAL, PARASITOLOGICAL AND SEROLOGICAL DIAGNOSTIC METHODS FOR THE DEFINITIVE DIAGNOSIS OF ONCHOCERCIASIS IN NSUKKA SENATORIAL ZONE

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ABSTRACT

Clinical, parasitological and serological diagnostic methods were compared for definitive diagnosis of human onchocerciasis in three endemic communities of Nkpologu, Ukpabi and Obimo; located at differing distances from the bank of Adada river in Nsukka.
The results revealed that 43.98%, 2.78%, 57.60% and 76.55% of the total number of volunteers tested were positive by most common and rare clinical symptoms, skin biopsy and Enzyme-linked immunosorbent assay (ELISA) respectively. Of those seropositive, 86.02% had microfilariae in their skin. Similarly, 67.28% and 91.91% of those who were positive by ELISA and skin biopsy respectively, displayed onchocercal nodules either on the head, trunk, groin, laps or near the knee. However, 96.76% of those with nodules had microfilariae in their skin. The results further showed that the incidence of onchocerciasis and worm burden in the three communities vary inversely with their respective distances from the river. Considering the relative significance of these methods in the diagnosis of onchocerciasis, we recommend the use of a combination of the most common clinical manifestations, skin biopsy and ELISA in the diagnosis of onchocerciasis, at least for epidemiological studies, until a single definitive diagnostic method is developed.

Keywords: Human onchocerciasis, Clinical symptoms, Skin biopsy, ELISA
SCHISTOSOMIASIS INFECTION IN PRIMARY SCHOOLS IN AGULU TOWN OF ANAMBRA STATE, NIGERIA

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ABSTRACT

Investigation was made to reveal the state and level of Schistosomiasis haematobium infection in the whole of Agulu town in Anaocha local Government Area of Anambra State, Nigeria where a lake (Agulu lake) is implicated in the transmission of the disease. Urine sample was collected from 3029 children for Schistosoma egg identification. This was used to calculate the level of infection in the different schools. Schistosomiasis prevalence was highest (55.2%) in Umuowelle primary school and lowest (4.1%) in Obeagu primary school. Males had higher infection rate than females in the endemic schools. In Umuowelle, Community and Nneogidi primary schools, infection rates in males were 36.4%, 13.3%, 11.3% respectively while infection rates in females were 25.2%, 11.7% and 6.8% respectively. However, the sex differences were not statistically significant at 5% confidence level (t-test = 2.179, df = 12). Infection levels investigated in all the schools revealed that the age group 10-14 years recorded the highest level while 0-4 years had the lowest. There was also shifts in peaks of infection within the various age groups, for instance, in the 10 - 14 years age group of Ifiteani primary school, infection peak was in 14 years while in Nneogidi primary school it was in 13 year old pupils.
ABSTRACT

A study was carried out to investigate the occurrence and causes of leg ailment in poultry through questionnaire survey and farm visitation. Post mortem and laboratory examination were also conducted. The results showed that different species of poultry were affected with various types of leg ailments; out of which local chickens had the highest incidence 175(30.49 %), followed by broilers and commercial laying chickens 153(26.67 %) and least in ostrich 16(6.75 %). Swollen legs were recorded thus: local chickens 65(36.72 %), commercial layer chicken 51(28.81 %) and broilers 33(18.64 %). Incoordination, another common leg ailment were observed in broilers 40(33.33%), layer chickens 39(32.50 %), local chickens 24(20.0 %), and turkeys 4(14.81 %). Physical injuries due to trauma, burns, trampling (smothering) and accidents were recorded in broilers 28(30.77 %), commercial laying chickens 25(27.47 %), local chickens 21(23.08 %), cockerels 17(18.68 %), guinea fowls 15(39.47 %) and ostriches 2(5.26 %). Curled toes, mange, Newcastle disease, Mareks disease and Clostridia infections resulting in leg ailments were also observed.

Keywords: Leg ailments, Poultry, Implication, Plateau State