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FEED INTAKE AND NUTRIENT DIGESTIBILITY OF WEANER RABBITS FED CASSAVA PEEL AS REPLACEMENT FOR MAIZE

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ABSTRACT

Twenty 8-week old crosses of New Zealand White X Chinchila weaner rabbits were used to assess the performance of rabbits fed diets with cassava peel replaced with maize on a graded level. Five diets were formulated, diets 1 (control), 2, 3, 4, and 5 in which maize was replaced with cassava peel at 0%, 25%, 50%, 75%, and 100%, respectively. The 20 rabbits were used in a completely randomized design with five treatments and four animal replicates per treatment. The trial lasted for 8 weeks. Parameters measured were feed intake, weight gain, feed conversion ratio and feed cost per kg. It was observed that there was no significant difference ($P > 0.05$) in the average daily feed intake of the rabbits fed diets 3, 4 and 5. However, diets 3, 4 and 5 had significantly higher ($P < 0.05$) intake than diets 1 and 2. Similarly, rabbits on diets 3, 4 and 5 had higher ($P < 0.05$) growth rates than those fed the control diet and diet 2. Feed cost per kg (N/kg) decreased from N35.33 in the control diet to N19.75 in diet 5. Cost of feed/kg live weight gain (N/day) decreased from N3.21 in the control diet to N1.29 in diet 5. It was concluded that maize supplementation in the diets of weaner rabbits could be replaced by cassava peels up to 100 % without any adverse effect. However, 75% cassava peel replacement was found to be the optimum and therefore recommended.

Keywords: Cassava peel, Nutrient digestibility, Growth rate, Feed intake, Rabbit

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EFFECT OF CASSAVA VARIETIES ON OVIPOSITION AND DEVELOPMENT OF LARGER GRAIN BORER-*Prostephanus truncatus* HORN (COLEOPTERA: BOSTRICHIDAE)

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ABSTRACT

The influence of cassava varieties on the developmental biology of Prostephanus truncatus (Horn) was investigated. This beetle was reared on flour varieties of cassava, namely: Danwari, Nwugo, Aburu-Asua and Anti-Ota. More eggs were laid in Danwari (132.0 ± 6.1 egg) than in other cassava variety. The least number of eggs laid was in Nwugo ($118.3_{+-4.5}$) in No-choice experiment. In Free-choice test, the highest number of eggs was recorded in Aburu-Asua (64.0 ± 1.7 eggs) and the lowest (41.6 ± 3.1 eggs) on Anti-Ota. The average total developmental period in, Aburu-Asua, Nwugo, Danwari and Anti-Ota were 32.5 ± 0.4 , 30.6 ± 0.2 , 28.5 ± 0.1 and 34.7 ± 0.1 days respectively. The low oviposition preference for Nwugo was attributed to the presence of oviposition deterrents in this variety, which might have protected it against the beetle attack.

Keywords: Cassava, Oviposition, Larger grain borer, Coleoptera, Bostrichidae

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PREVALENCE OF BOVINE CYSTICERCOSIS IN JOS ABATTOIR, NIGERIA

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ABSTRACT

The prevalence of Cysticercus bovis at Jos abattoir during post mortem examination conducted on

Fourteen thousand three hundred and seventy two (14,372) slaughtered cattle over a period of two years (January 1997 – Dec. 1999), using evagination method. Out of 14,372 carcasses examined 1924 (13.4 %) tested positive for C. bovis. The sites of the location of the larvae varied from one organ to another with the heart having the highest 48 (30.0 %) and the least affected were the visceral organs livers, lungs and esophagi. There is a positive correlation between the number of C. bovis cyst and the percentage frequency of the organ affected (P<0.05).

Keywords: Prevalence, Cattle, *Cysticercus bovis*, Jos abattoir

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BETTLER FAUNA OF AGRO AND FOREST ECOSYSTEMS IN A TROPICAL RAINFOREST HABITAT, NIGERIA

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ABSTRACT

*An investigation was carried out to study the beetle fauna of a cultivated farmland and tropical rainforest plot at the Permanent Site of Nnamdi Azikiwe University, Awka for a twelve-month period using the pitfall technique. Eight pitfall traps made up of plastic containers with mouth diameters of 9.80 cm and 6.20 cm deep were set monthly at random in the two sampling sites. The traps, which were filled to one third with 5 % formalin, serving a preservative, were recovered after twenty-four hours and the insects caught sorted and counted under a dissecting microscope. Species of beetle obtained from the cultivated plot were *Macrocheilus labrosus*, *Hyparpalus* sp., *Carpophilus fumatus*, *Podagrica uniforma*, *Tetragonothorax* sp., *Chlaenius* sp., *Pheropsophus parallus*, *Silidas apicalis*, *Tenebroides mauritanicus*, *Heteroderes* sp., and *Heterorynchus licas* while only *Hyparpalus* sp., and *Mylabris* sp., were obtained from the fallow plot. The result of Fisher's Least Significance Difference (F-LSD) test shows that the pitfall catches of beetles from the two sampling sites were significantly different at p-value of 0.0002 and mean difference of 3.417. The heterogeneity of the beetle species at the cultivated plot was traced to nature of vegetation and mode of life of the beetle species. The role of certain beetle families as faunal indicators was highlighted. Other factors, which influenced the beetle species at the arable plot and their non-trapping at the forest ecosystem, were also discussed.*

Keywords: Beetle fauna, Arable plot, Secondary regrowth forest, Pitfall traps

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ODONATA FAUNA OF CONTRASTING SEMI-AQUATIC AND TERRESTRIAL ECOSYSTEMS IN AWKA, NIGERIA

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ABSTRACT

*The sweep net was used to study the Odonata fauna of the Permanent Site of Nnamdi Azikiwe University, Awka for a twelve-month period. The Odonata species collected from the marshy plot included *Orthetrum chrysostigma*, *Ceriagrion glabrum*, *Platycnemis subaequistyla* Fraser and *Nesciothemis nigeriensis* while *Hemistigma coronata* and *Palpopleura lucia* were obtained from the fallow plot. Only two species - *Palpopleura lucia* and *Hemistigma albipuncta* were collected from the cultivated plot. A statistical analysis of the collections of these insect species using Analysis of Variance (ANOVA) failed to show any significant differences at F-ratio of 0.458 and p-value of 0.6339, even though higher numbers of species were obtained at the wetland. Similarly the sweep net catches failed to show any significant difference using the Fisher's Least Significance Difference (F-LSD) test at 5% probability level. The higher catches of the odonates at the marshy plot was traced to the nature of the habitat. The role of these sub aquatic species as indicators of ecosystem quality was highlighted.*

Keywords: Odonata fauna, Semi-aquatic ecosystem, Awka

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HUMAN *LOA LOA* (COBBOLD, 1864) (FILAROIDEA: ONCHOCERCIDAE) MORBIDITY DISTRIBUTION IN NORTHERN ENUGU STATE, NIGERIA: IMPLICATIONS FOR ONCHOCERCIASIS CONTROL

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ABSTRACT

A cross-sectional epidemiological investigation was conducted in Nsukka senatorial zone of Nigeria to evaluate the use of specific clinical signs/symptoms in the assessment of the endemicity, prevalence and morbidity of Loa loa infection in areas meso-endemic for onchocerciasis, and to evaluate the results in respect of the probability of occurrence of adverse reactions, post-treatment with ivermectin in areas presumed to be hypo-, meso-, and hyper endemic for Loa loa infection and morbidity. Standard questionnaire based on the key clinical manifestations of loiasis were administered and the microfilaraemic levels of respondents determined at both community and individual levels. The results showed that the clinical symptoms/signs were known in all the study communities. Altogether 22.0% of respondents (n=1600) positively indicated having experienced either Loa loa infection and/ or Calabar swelling. Based on the questionnaire indices, an intercommunity prevalence of 21.9% (range 17.50 – 27.50%) was established. An overall community median microfilaraemia (mf) prevalence of 19.4% (range 15.0 – 26.3%) was also recorded. A microfilaraemia prevalence >20% was however established in >35% of the study communities indicating the possibility of adverse reaction after ivermectin administration. More males (n=203, 12.7%) than females (n=109, 6.8%) were microfilaraemic. Linear logistic regression indicated that Loa loa infection was significantly associated with age (adjusted odds ratio: 1.12, 95% confidence interval: 1.00-1.14, p<0.001). The intercommunity mean intensity of microfilarial load varied (range 112 ± 25 – 205 ± 30). The best diagnostic performance was obtained for reported history of L. loa with a sensitivity of 100% and a specificity of 94.6%.

Keywords: Epidemiology, Loiasis, Onchocerciasis, Adverse reaction, Microfilaraemia, Implications for Control

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EFFECT OF REPLACING GROUNDNUT CAKE WITH UREA FERMENTED BREWER'S DRIED GRAINS IN BROILER CHICKS DIETS

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ABSTRACT

The effect of replacing groundnut cake with urea fermented brewer's dried grains at 0, 25, 50, 75 and 100 % graded levels in broiler chick starter diets was investigated. Five dietary treatments were formulated to be isonitrogenous and isocaloric to provide 23 % crude protein and 2900 kcal/kg metabolizable energy. One hundred and ninety – five day-old broiler chicks (Anak breed) were randomly allotted to five treatments replicated thrice with 13 chicks per replicate, fed and watered ad libitum in battery cages for 35 days. Means of body weight, weight gain, feed intake and feed: weight gain ratio of broiler chicks fed the control diet, 25 and 50 % urea fermented brewer's dried grains diets were significantly (P < 0.05) better than those fed 75 and 100 % inclusion levels. Nitrogen and lipid retention, crude fibre and dry matter digestibilities of broiler chicks followed the same trend with the weight performance. Mortality was zero. Economically, it was more profitable to use urea fermented brewer's dried grains in replacing groundnut cake in broiler chicks diets.

Keywords: Broiler chicks, Groundnut cake, Urea, Fermented, Brewer's dried grains

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MUSHROOM FLORA AND ASSOCIATED INSECT FAUNA IN NSUKKA URBAN, ENUGU STATE, NIGERIA

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ABSTRACT

The mushroom flora and associated insect pests of mushrooms in Nsukka urban was studied. The abundance of mushrooms from sampled communities is indicated with the family, Agaricaceae predominating "out of home" environment yielded more mushrooms (4.62) than the homestead environment (3.26). Insect pests associated with different mushrooms were Megasiela aganic Musca domestica Pygmaephorous stercora Paychybolus ligulatus and Drosophilla melanogester among others.

Keywords: Mushroom, Pest, environment

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PREVALENCE OF INTESTINAL HELMINTHS INFECTIONS AMONG SCHOOLING CHILDREN IN TROPICAL SEMI URBAN COMMUNITIES

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ABSTRACT

*Prevalence of intestinal helminths infections among school children in Igbo-Eze South Local Government Area, Enugu State, Nigeria were studied between July and December 2005. Significant differences ($P < 0.05$) were recorded among the 1,296 school children (ages 4 – 15) randomly sampled and examined for intestinal helminths. The prevalence of intestinal helminths varied significantly among schools sampled ($P < 0.05$). Central School, Ovoko had the highest percent prevalence for *Ascaris lumbricoides* (9.3 %), hookworm (6.0 %) and *Trichuris trichiura* (2.3 %). The least per cent prevalence of *A. lumbricoides* was recorded in Community Primary School, Iheakpu-Awka (2.3 %), while the least per cent prevalence of hookworm occurred in Community Primary School 3, Itchi. *T. trichiura* was not recorded in community primary schools in Itchi, Unadu and Iheakpu-Awka. Similarly, the prevalence of these parasitic helminths varied significantly among the age groups ($P < 0.05$), with age groups 4 – 6, highly infected with *A. lumbricoides* (7.0 %), 13 – 15 with hookworm (3.7 %) and 7 – 9 with *T. trichiura* (1.2 %). *T. trichiura* was absent in stool samples of 4 – 6 and 13 – 15 age groups. The prevalence of these intestinal parasites also varied significantly between the sexes, with females having comparatively more *A. lumbricoides* (5.4 %), hookworm (3.2 %) and *T. trichiura* (0.8 %) than males. Our study indicated that intestinal helminthiasis was prevalent in the area, and as such, control measures such as chemotherapy, provision of adequate sanitary facilities and potable drinking water, improved personal hygiene and health education should be the focus of non-governmental and governmental health institutions in Nigeria.*

Keywords: Prevalence, Intestinal helminths, *Ascaris lumbricoides*, Hookworm, *Trichuris trichiura*, Helminthiasis Schooling children

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ANIMAL TRYPANOSOMIASIS IN AFRICA: AETIOLOGY AND EPIDEMIOLOGY

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ABSTRACT

The aetiology and epidemiology of African trypanosomiasis in bovine species are comprehensively presented. In addition, a critical review of the history and transmission of the disease is exhaustively discussed. The mystery of other epizootiological factors associated with bovine trypanosomiasis is highlighted. Four major elements were identified as important in the epizootiology of African animal trypanosomiasis namely the trypanosome, the tsetse fly, the mammalian host and the environmental factors. It was concluded that the phenomenon of high rate of resistance referred to as trypanosotolerance has genetic correspondence.

Keywords: Trypanosomiasis, Aetiology, Epidemiology, Haemoprotozoan, Trypanosotolerance, *Trypanosoma*

EFFECT OF NUTRITION ON THE RED BLOOD CELLS OF TRYPANOSOME-INFECTED FEMALE RATS

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ABSTRACT

Trypanosomiasis is of great interest to farmers in Sub-Saharan Africa. It is a disease that retards agricultural development in general and needs urgent attention. It has been noted that it causes anaemia in its host which often may lead to death. Many researches showed that dietary supplement can enhance trypanotolerance in various hosts. Diet is important in modulating the severity of its pathophysiological effects and can also influence the rate of recovery. Using a control diet (Diet 1) was only chicks' mash. this research was conducted to determine the effect of moderate protein (mixture of 250 g of corn meal, 240 g of soyabean meal and 10 g of crayfish meal in chicks' mash (Diet 2)), high dietary protein (mixture of 400 g of caseinogen and 300 g of soyabean meal in chicks' mash (Diet 3)) and high dietary carbohydrate (mixture of 400 g of dextrose and 300 g of corn meal in chicks' mash (Diet 4)) supplementation on rodent trypanomiasis. Diet 1 was used to feed rats in Cage A, Diet 2 was used to feed rats in Cage B, Diet 3 was used to feed rats in Cage C while Diet 4 was used to feed rats in Cage D. At the end of the experiment, it was observed that rats fed with Diet 2 (moderate protein diet) had the highest and significantly different ($P < 0.05$) red blood cell count than other treatments. This indicated that adequate nutrition reduces the effect of trypanosome and hence trypanotolerance in rats since trypanosome is known to attack red blood cells and vascular endothelium.

Keywords: Nutrition, Red blood cells, Trypanosome-infected female rats, Trypanomiasis, Pathophysiology

PERFORMANCE RESPONSE AND EGG QUALITIES OF LAYING BIRDS FED ENZYME SUPPLEMENTED PALM KERNEL CAKE (PKC) BASED DIETS

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ABSTRACT

The performance response and egg qualities of laying birds fed enzyme supplemented PKC diets as replacement for maize was investigated with 210, 20 week old laying pullets of Dominant Black strain at the Teaching and Research Farm of the Delta State University, Asaba Campus, Nigeria. The birds which just come into lay were randomly allotted into seven dietary groups of 30 each in three replicates. The experiment was conducted for 11 weeks. Dietary treatments significantly ($p < 0.05$) affected feed intake, Hen day percent, Egg weight, Feed efficiency (Kg feed: Kg eggs) and cost of feed per egg. Final live weight and body weight gains at end of the experiment were similar ($p < 0.05$) among treatments. On egg qualities, only Haugh unit was significantly ($p < 0.05$) improved with increased level of PKC which appeared to be better as rate of enzyme supplementation increases. The differences observed in the experiment on performance parameters appeared not to have established a consistence trend to strongly assert a conclusion but are indicative of the possibility of replacing maize with PKC in a laying birds diet up to 40 % when supplemented with Hemicell[®] enzyme. Other enzyme application methods may be investigated to see if better performance response trend can be achieved.

Keywords: Performance response, Egg qualities, Laying birds, Palm kernel cake, Enzyme

AMINO ACID DYNAMICS IN URINE OF *S. haematobium* PATIENTS IN ISHIELU LOCAL GOVERNMENT AREA OF EBONYI STATE, NIGERIA

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ABSTRACT

The Amino acid dynamics in urine samples of Schistosoma haematobium patients were studied. The study was to evaluate the possibility and validity of using amino acid patterns recorded in highly, lightly and uninfected urines as diagnostic tool for rapid screening of Schistosomiasis. Paper chromatography was used to separate the different amino acids in the urine samples. The chromatographic method used in this study revealed the existence of 9 essential and 7 non-essential amino acids in the urine samples. It equally showed that histidine, glutamine, serine and proline were absent in all the urine samples. Furthermore the presence of two marker amino acids can be used to identify individuals with heavy infection (cystein) and no infection (methionine).

Keywords: Amino acids, Rapid diagnosis, Schistosomiasis, *S. haematobium*, Ebonyi State

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REASSESSMENT OF ONCHOCERCIASIS PREVALENCE IN ETTEH, NIGERIA, AFTER A DECADE OF MASS MECTIZAN CHEMOTHERAPEUTIC INTERVENTION: PRELIMINARY REPORT

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ABSTRACT

A reassessment of the prevalence of onchocerciasis was carried out in Etteh community in Igbo-Eze North Local Government Area of Enugu state, Nigeria. The community has been known to be highly endemic for onchocerciasis. The assessment of endemicity was based on Rapid Assessment Method (RAM), which involved the use of two onchocercal indices namely the presence of palpable nodules and depigmentation (leopard skin). Out of the 716 individuals examined consisting of 327 males and 389 females, the overall prevalence of palpable onchocercal nodules was 51.4%. The females had insignificantly ($P>0.05$) higher rate of onchocercomata (51.9%) than males (44.0%). The anatomical distribution of nodules in descending order of occurrence was pelvic region (26.3%), head and neck region (20.6%), thorax and lumbar (15.7%), upper limbs (14.5%), lower limbs (12.4%) and others (abdomen and shoulders, 5.9%). It is obvious that in spite of the decade-long, annual free distribution of Mectizan in the area, onchocerciasis prevalence is still high.

Keywords: Onchocerciasis, Mectizan, Reassessment, Nodules, Chemotherapy