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DOES CONTROL OF ANIMAL INFECTIOUS RISKS OFFER A
NEW INTERNATIONAL PERSPECTIVE?

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WORKSHOP C – POSTERS

THE EFFECT OF A TRAINING COURSE ON MILKING HYGIENE IN PERIURBAN AREA OF MAROUA, CAMEROON

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ABSTRACT

Training programs should be developed to enhance food safety in milk chain and to improve local production. A training course on milking hygiene was performed at Maroua (Cameroon) and its success was evaluated using a swab (Amies medium with charcoal). Farmers’ hands (26 farmers involved and 29 not involved in the course) were sampled before the beginning of milking. To evaluate the efficiency of cleaning procedures of milk containers, 20 gourds and 20 enamelware, were sampled with swabs before the beginning of milking. Samples were kept at 5°C for 36h till the microbiological analysis, which identified pathogenic and ubiquitous micro-organisms. The attendance of training course results in higher sterile samples of hands (6vs1), lower microbiological count, but the same pathogen contamination (9 samples). Independently of training, number and variety of ubiquitous organisms were similar. The contamination of gourds by Enterococcus faecalis (potential pathogenic species) was higher than enamelware (18vs11), although a bigger difference was expected. Various environmental bacteria were identified in enamelware, only Bacillus spp. in gourd. The training improves milking hygiene and the comparison between traditional and modern containers underlines the inefficacy of burning sterilisation of the gourd for Enterococcus faecalis probably due to his high resistance.

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Does control of animal infectious risks offer a new international perspective?
SURVEY ON THE CONTAMINATION OF MILK CHAIN IN PERIURBAN AREA OF NIAMEY

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ABSTRACT

Low hygiene quality in milk chain is a relevant problem which restrains local production and contributes to spread zoonotic diseases through the consumption of raw milk. A survey on the contamination of milk chain in periurban cattle farming was performed in Niamey (Niger). 290 milk samples were collected from 82 different herds to verify critical points of milk chain transport to evaluate the contamination levels. Total coliform, fecal coliform, Escherichia coli, Staphylococcus aureus, S-reducing Clostridia spp., Salmonella spp. and Lysteria spp. were analysed. Significant increase of the bacterial contamination was recorded: the mesophilic bacteria count growths from udder (1.8*10^5 UFC) to tank in the processing unit (4.4*10^6 UFC). Fecal coliform count increases from udder (1.9*10^2 UFC) to milking pail (4.5*10^3 UFC), while E. coli contamination growths from udder (1*10 UFC) to milk churn (7.7*10^2 UFC). The results show that the contamination from zoonotic bacteria growths significantly during the milk chain and in particular in the first two steps (from the udder to the milking pail). A training program to improve the food safety and the local dairy production is suggested for the actors of milk chain.

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PREVALENCE OF BABESIA VERMICULES IN THREE DIFFERENT SITE IN SAMARU ZARIA

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ABSTRACT

A study to determine the percentages of engorged ticks infected with vermicules of Babesia spp and to compare the prevalence of Boophilus spp of ticks from three different collection sites around Samaru Zaria of northern Nigeria was conducted. 172 replete Boophilus decolaratus female were collected from cattle in three different sites in Samaru from 9th October 2003 to 5th December 2003. They were incubated at 280C and 80% relative humidity. These tick were fully engorged and therefore laid large number of eggs which are viable Haemolymph smear from 83 of them showed vermicules of Babesia spp.

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AVIAN E. COLI: MULTIPLE ANTIBIOTIC RESISTANCE AND PLASMID PROFILE

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ABSTRACT

Eighty four strains of E. coli isolates recovered from samples collected during post-mortem of poultry (53), poultry meat samples (25), dead in shell (6) were investigated. Serotyping, in-vitro antibiogram, Congo red binding ability and plasmid profile of these strains were studied. A total of 32 serotypes were recorded whereas, 12 strains were untypable and 2 were rough. Serotypes recorded were 02(16), 09(4), 0157, 088, 016, 078, 0120 091, 025 (3, each), 08, 077, 021, 038, 0153, 010 (2, each) and 068, 0173, 0109, 0132, 0105 080, 099, 029, 0155, 052, 041, 03, 0117, 086, 0159, 0140, 01(1, each). In-vitro antibiotic resistance pattern of E. coli strains indicates maximum resistance towards ampicillin (88.09 %) followed by oxytetracyclin and penicillin (84.52 %, each). Where as, high sensitivity towards amoxicillin and ceftriaxone (72.61 %, each). Of all strains tested, 60(71.42%) isolates showed Congo red binding ability. Plasmid profile revealed that out of 84 isolates 32(38.09%) were harbouring single plasmid (25.6 kb), 16 (19.04 %) 2 plasmids (25.6 and 5.6 kb), 3 (3.57%) 3 plasmids (25.6, 8.9 and 5.6 kb), 4 (4.76%) harbouring four plasmids of molecular weight 35.1 24.5, 8.9, 5.4 kb, respectively. Multiple drug resistance observed in E. coli of avian origin indicating possible threat of spread of drug resistance strains among the poultry and possibly in food chain.

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THE PRODUCTION PERFORMANCES OF BROILER CHICKENS FED GRADED LEVELS OF COOKED COWPEA (VIGNA UNGUICULATA)

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ABSTRACT

The increasing price of soybean on the international market is a real challenge for the development of competitive poultry production systems in developing countries, thus the increased interest for alternative plant proteins. Grain legumes are the most promising alternative feedstuffs, however their used is limited by the presence of anti-nutritional factors. Heat treatment is one of the methods to improve the utilisation of grain legumes by birds. 160 21-day old male chicks, 416 g were used in a completely randomised design with 5 treatments repeated 8 times each, to test the effect of feeding 15, 20, 25 or 30% cowpea and a control diet on the performances of broilers. Feed consumption was comparable (P>0.05) for all the treatments. Weight gain and feed conversion ratio (FCR) for birds fed up to 20% cowpea were not significantly different from that of the control birds. The poorest weight gain and FCR as well as the highest (P<0.05) cost of production were recorded above 20% bean. Carcass yield, relative weight of organs and level of serum creatinine were comparable for all the groups. It was concluded that up to 20% cooked cowpea could be introduced in the finisher diet without significantly affecting broilers’ performances.

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GROWTH PERFORMANCES, ORGAN DEVELOPMENT AND BLOOD PARAMETERS OF RATS FED GRADED LEVELS OF STEEPED AND COOKED TARO TUBER (COLOCASIA ESCULENTA) FOUR

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ABSTRACT

The high cost of maize is a major constraint to poultry development in tropical countries, thus the need for adequate substitutes. Taro tuber with above 4000 kcal/kg crude energy is a potential feedstuff for animal feeding, provided its oxalate content is reduced. A study on sub-chronic toxicity of the steeped and cooked taro flour was conducted using 32 28-day old rats. Corn flour was substituted in a completely randomized design either at 0, 25, 50, or 100% levels with steeped-cooked taro flour in the usual rats’ diet. The incorporation of steeped-cooked taro flour in the diet didn’t have any significant effect (p=61502;0.05) on feed consumption, weight gain, feed efficiency ratio of rats and on the macroscopic state of organs from tested animals. No significant difference (p=61502;0.05) was recorded between the groups for relative weights of the organs and studied blood parameters. No significant effect (p=61502;0.05) of taro was recorded on total hepatic proteins, total serum cholesterol and alanine aminotransferase. However, total serum proteins and aspartate aminotransferase significantly (p=61500;0.05) decreased with increasing level of steeped-cooked taro flour in the diet of rats. The steeped-cooked taro flour was not found toxic at short-term and could be recommended for animal feeding.

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EFFECT OF ADAPTATION PERIOD ON INTAKE AND DIGESTIBILITY OF GOAT DIET CONTAINING OAK ACORN IN REPLACEMENT OF BARLEY GRAIN

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ABSTRACT

The oak fruit, acorn, is an important fall feed source in Mediterranean region and highly palatable to ruminants. However, despite its promising nutritional significance, acorn has been found to contain a high level of tannins that might decrease voluntary feed intake, feed utilization and animal growth. This study examined the effect of adaptation period on intake and digestibility of diet containing cork oak acorn (Quercus suber L.) in replacement of barley grain. Ten Boer kids (26.5 ± 2 kg) were randomly divided into a control (n = 5) and an experimental (n=5) group. Kids in both groups were fed, on the basis of crude matter, 500 g/day per head of oat hay, and 600 g of concentrate containing barley grain (Control group) or oak acorn (Experimental group). The digestibility and nitrogen balance experiment lasted 43 days. In the following 2 weeks, voluntary intake of acorn containing concentrate was determined on the experimental group. Digestibility results show that the adaptation to the diet was harder in the experimental group than in the control group. The highest values of digestibility and nitrogen retention were obtained with the longest adaptation time. Moreover, digestibility coefficients of dietary constituents (Dry matter, organic matter and crude protein) were reduced (P<0.001) as a result of acorn substitution for barley. Nitrogen retention (g/day) was positive for experimental group but lower (P<0.001) than for control group. Voluntary intake of acorn containing concentrate ranged from 763 - 1091 g Dry matter per day without any signs of physiological problems.

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EFFECT OF FEEDING DIFFERENT LEVELS OF CONCENTRATE FEED MIXTURE AND CORN SILAGE ON STATUS OF SOME MINERALS IN GROWING FRIESIAN CALVES

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ABSTRACT

Twenty-eight male Friesian calves with average body weight 176.68±3.68 kg and aged 8±0.19 months were divided into four similar groups assigned randomly to four experimental rations (R1-R4) during the first (first 140 day of experiment) and second (from day 141 to reach 450 kg average body weight) periods as follows: R1 (control ration): 65% concentrate feed mixture + 15% fresh berseem (first period) or berseem hay (second period) + 20% rice straw. R2: 50% concentrate feed mixture + 50% corn silage. R3: 25% concentrate feed mixture + 75% corn silage. R4: 100% corn silage (first period) or 75% concentrate feed mixture + 25% corn silage (second period). The contents of all minerals (Ca, P, Mg, Na, K, Cu, Zn, Mn and Fe) were higher in concentrate feed mixture compared with corn silage. The contents of Ca, P, Na, Zn and Mn in corn silage and Zn content in R3 were below the recommended requirements of growing calves according to NRC (1996). The contents of Ca, P, Mg, Na, K, Cu, Zn, Mn and Fe of experimental rations increased with increasing the level of concentrate feed mixture and decreasing the level of corn silage in the rations. The intake, absorption and retention of all minerals (g or mg/day) increased significantly (P<0.05) with increasing the level of concentrate feed mixture and decreasing the level of corn silage in the rations. Calves fed all corn silage ration (R4) during the first period showed negative absorption and retention of Ca, P, Na, Zn and Mn. Also, calves fed R3 (25% concentrate feed mixture + 75% corn silage) during the first and second periods had negative Zn absorption.
The concentrations of all minerals in hair, blood plasma, liver, kidneys, heart, spleen and muscle increased significantly (P<0.05) with increasing the level of concentrate feed mixture and decreasing the level of corn silage in the rations. The concentrations of Ca, P, Na, Zn and Mn in hair and blood plasma of calves fed all corn silage ration (R4 during the first period) and Zn in hair, blood plasma, liver, kidneys and spleen of calves fed R3 were lower than the normal levels. The concentrations all minerals in hair and blood plasma and Cu, Zn and Fe in liver; Na, K, Mg and Zn in kidneys; Ca, P and Mn in heart; Ca, P, Mg, Zn and Fe in spleen and P, K, Mn and Fe in muscle give a good indicators of intake and status of these elements in growing Friesian calves.

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EFFECT OF MATURITY ON CHEMICAL, PHENOLICS AND AMINO ACIDS CONTENT AND RUMEN DEGRADABILITY OF SORGHUM ALMUM

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ABSTRACT

The effect of advancing maturity on chemical composition and in sacco rumen degradability of Sorghum almum was investigated. The grass was established and harvested at 6, 10 and 14 weeks growth stages. Herbage samples were analyzed for dry matter and chemical constituents following standard procedures. In sacco (Nylon bag) rumen degradability was done using 6 wethers (Age: 8 months; Mean LW: 20.6 kg) fitted with rumen cannulae and fed a ration comprising of 3:1 fresh Sorghum almum (DM: 148.9 g DM and CP: 109.8 g kg-1 DM) and Medicago sativa hay (DM: 903.1 g DM and CP: 188.6 g kg-1 DM). Nylon bags (pore: 40 µm; size: 6.5 cm x 12 cm) containing 5 g each of dry grounded sample were inserted into the rumen, all at once and withdrawn sequentially after 12, 24, 36 and 48 h incubation periods. Zero h bags were also included. The collected data was fitted to the equation: \( p = a + b (1 - e^{-ct}) \). Effective degradation was calculated as: \( ED = a + b \times \left[ \frac{c}{(c + k)} \right] \). The generated parametric data was analyzed using SAS and SPSS procedures. Dry matter, NDF, ADF and ADL content increased by 72.98, 62.64 and 56.5% respectively between 6 and 14 weeks. In contrast, CP, EE and RFV decreased by 66.67, 73.42 and 38.65% respectively over the same period. Mean concentration of total phenolic compounds also decreased by 25.25% \( (r^2 = 0.950; \ P < 0.05) \). Similarly, concentration of arginine, methionine, lysine and total amino acids declined by 66.02, 78.26, 46.44 and 63.41% respectively between 6 and 14 weeks. DM, OM and CP degradability also declined with advancing age of the grass \( (P < 0.01; \ P < 0.0001 \And \ P < 0.0001) \). It was therefore concluded that advancing maturity adversely affected the quality of Sorghum almum; hence the need to harvest at an optimum maturity stage.

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AETIOPATHOLOGY OF MORTALITY OF BIRDS OF ASSAM STATE ZOO

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ABSTRACT

Aetiopathology of mortality of birds of Assam State Zoo during the period October, 2003 to May 2005 was studied. A total of 50 dead birds were collected from the Assam State Zoo cum Botanical Garden, Guwahati. All the 50 carcasses were studied thoroughly to determine the cause of death on the basis of history of the case, gross and histopathological, microbiological and parasitological examinations, as well as toxicological examination in some cases. The causes of death that attributed to specific diseases in descending order of occurrence were as follows: Candidiasis (8%) in four cases (one each of Barn owl, Rose-ring parakeet, Pariah kite and Grey-fronted green pigeon). Out of this, intestinal candidiasis was seen in three cases, and in one case ulcerative necrotic ventriculitis was noted. Aspergillosis (4%) was the cause of death in two cases (a Cuckoo and a Rose-ring parakeet) and both showed mycotic pneumonia. Zygomycosis (4%), was recorded in two cases, where mycotic pneumonia was seen in a Greylag goose and systemic generalised mycosis in a Lesser adjutant stork. Salmonellosis (4%), accounted for the death of a Purple moorhen and a Pariah kite where septicaemic lesions were noticed. Staphylococcal septicaemia (4%), was noticed in a Great white pelican and in a Hill mynah. Tuberculosis (2%), was responsible for the death of a Crested serpent eagle. Coccidioidomycosis (2%), was recorded in a White peafowl where the lungs and liver were affected. Opisthorchis sp. infestation (2%) was recorded in a Barheaded goose in which the parasites caused marked destruction of the liver. Ascocotyle sp. infestation (2%) was recorded in a Cattle egret with severe enteritis. Adenocarcinoma (2%) was noticed in a
Barheaded goose in which tumourous growths were seen in the lung and over the parietal surface of the sternum. Haemangiosarcoma (2%) was responsible for the death of a Peafowl where microscopically marked proliferation of new blood vessels and enlargement, hyperchromatism and pleomorphism of endothelial cells were noted in the liver, spleen and kidney. The other conditions recorded were as fellows; Death due to traumatic injuries (16%) was recorded in eight cases (two Common moorhen, and one each of Black-neck stork, Budgerigar, Lesser adjutant stork, Spotted sandpiper, Purple moorhen and White ibis), which accounted for the highest number of mortality during the present study. Capture/captivity stress (14%) was recorded in seven rescued birds (four Lesser whistling teal, two White ibis and one Kingfisher) where marked congestion and haemorrhages in adrenal gland and visceral organs were noted. Enteritis (8%) accounted for the death of four birds (one each of Peafowl, Hill mynah, Lesser adjutant stork and White ibis). Pneumonia (8%) was recorded in four cases (two Budgerigars and one each of Spotted owlet and Rose-ring parakeet). Septicaemia (8%) was recorded in four cases (one each of Bar headed goose, Rose-ring parakeet, Hornbill and Peafowl). Egg peritonitis in a Peafowl and prolapsed of rectum in a Cassowary also accounted for the death of the birds, while in three other cases, the cause of death could not be ascertained. The detail findings will be discussed.

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