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**IMMUNOLOGICAL AND HAEMATO-BIOCHEMICAL PROFILE OF
SUB ACUTE TOXICITY OF DELTAMETHRIN IN WISTAR RATS
(*RATTUS NORVEGICUS*)**

V.A. KALARIA, B. J. PATEL¹, D.V. JOSHI, A. R. BHADANIYA, J. M. PATEL,
D. T. FEFAR, H. H. SAVSANI³ AND S. N. GHODASARA⁴,

*Department of Veterinary Pathology
Veterinary College
Junagadh Agricultural University
Junagadh*

An experiment was conducted to study the immunological and haematobiochemical alterations induced by deltamethrin toxicity and ameliorative effect of vitamin E in 50 wistar rats, divided uniformly into five different groups as Group A, B, C, D and E. The wister rat of group A received only 1 ml. Dimethylsulfoxide (DMSO) plus vitamin-E 100 mg/kg b.wt. orally and served as control while, Group B, C, D and E rats were daily treated orally with deltamethrin (98 % pure) @ 7.5 mg/kg b.wt. (Group B and C) and 15 mg/kg b.wt. (Group D and E), along with deltamethrin, Group C and E were daily supplemented with vitamin-E 100 mg/kg b.wt. for 30 days. Haemoglobin, PCV, TEC, lymphocyte and monocyte revealed significant decrease while, mean corpuscle volume, mean corpuscular haemoglobin, mean corpuscular haemoglobin concentration values, eosinophil and basophil counts revealed non significant difference in rats induced with deltamethrin toxicity. Biochemically the mean value of alkaline phosphatase, alanine aminotransferase, lactate dehydrogenase (IU/L) and plasma glucose (g/dl) revealed dose dependent significant ($P < 0.05$) increase on 14th and 28th day post treatment in all groups compared to control. The mean value of acetylcholinesterase (IU/L) and total protein (g/dl) revealed dose dependent significant ($P < 0.05$) decrease on 14th and 28th day post treatment in all groups compared to control. The result of this study revealed that pyrethroids can no longer be considered as nontoxic to mammals and hence underscore the need for the judicious use of these compounds as insecticides in domestic animals.

**EFFECT OF FEEDING TREATED AND UNTREATED
EXPELLER PRESSED MUSTARD CAKE ON CARCASS
CHARACTERISTICS OF BROILER CHICKENS**

MUKESH KUMAR SINHA, SANJAY KUMAR REWANI¹, AMIT RANJAN² AND R.N. SINGH

*Department of Animal Nutrition
Ranchi Veterinary College
Ranchi-834 006*

A 42 d experiment was conducted with day-old Cob 400 straight-run broiler chicks to assess the effect of feeding treated and untreated expeller pressed mustard cake on carcass characteristics. The chicks were weighed individually and assigned to seven dietary treatments each containing five replicates of 10 chicks. The control (T1) group contained decorticated ground nut cake (GNC) whereas in groups T2, T3 and T4 it was replaced with expeller pressed mustard cake (Exp. MSC) at 25, 50 and 75 per cent level respectively (on protein equivalent basis). The ingredient composition of treatment groups T5, T6 and T7 was similar to T2, T3 and T4 respectively but supplemented Exp. MSC was treated with 0.4 per

cent copper sulfate. Dietary treatments had no significant ($P < 0.05$) effect on feed conversion ratio and carcass characteristics like pre-slaughter body weight, dressed carcass weight, giblets weight, weight of non-edible offals and nonedibles percentage of live weight. However, dressing percentage of live weight and giblets percentage of live weight differed significantly ($P < 0.05$). Organoleptic evaluation of cooked meat also did not vary significantly ($P < 0.05$) due to incorporation of Exp. MSC in diets. It was concluded that Exp. MSC could be used to replace GNC upto 75 per cent in the diets of broiler chickens without any adverse effect on commercial carcass traits.

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REMEDIAL MEASURES OF CHRONIC ARSENICOSIS IN ROHU (*LABEO ROHITA*, HAMILTON) THROUGH DIETARY APPLICATION OF METAL CHELATORS

P. SINGH, P. SARDAR¹, S. CHANDA¹, B. MANDAL

*Vidyasagar University
Department of Aquaculture Management and Technology
Midnapore-721 102*

A 50 day experiment was conducted to study the effect of chronic arsenicosis and to evaluate the efficacy of dietary treatment with metal chelating agents like DMSA (Meso-2,3,dimercaptosuccinic acid) and DMPS (Sodium-2,3, dimercaptopropane-1-sulfonate) in Rohu (av.wt.80.54 \pm 0.55g). Control diet was prepared without DMSA and DMPS and experimental diets were prepared 3 for each with graded levels of DMSA and DMPS, viz., 0.025(%), 0.05 (%) and 0.1(%) respectively. Rohu juveniles were equally distributed into two treatment groups viz., D0 (control feed without arsenic exposure), D00 (control feed with arsenic). Similar to D00 another six sets where fish had arsenic exposure and fed control diet were maintained for final experiment, where fishes further treated with DMSA and DMPS for 15 days. At the end of 35 days it was observed that weight gain (%), SGR, (%/d) and PER values were significantly lower but feed conversion ratio value was significantly higher in fish exposed to arsenic than the fish of control. Exposure to arsenic results in the bioaccumulation of arsenic in the liver, gill and muscle of fish. After the exposure, treatment of fish with dietary DMSA or DMPS significantly improved the growth performance and decreased the tissue burden of arsenic in respect to the control feed. The experimental data suggests that feed contained either of 0.05% or 0.1% DMSA or 0.1% DMPS can be used to minimize arsenic mediated growth retardation and tissue arsenic accumulation in fish.

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INFORMATION SOURCES AND ITS EFFECTIVENESS AMONG DAIRY FARMERS IN TAMIL NADU*

R. GOPI, N. NARMATHA, K.M. SAKTHIVEL, V. UMA AND M. JOTHILAKSHMI

*Department of Veterinary and Animal Husbandry Extension
Veterinary College and Research Institute
Namakkal, Tamil Nadu- 637 002.*

Information is considered as a valuable resource and it has vastly bestowed to the augmentation of dairy farming. The present study was attempted to know about the frequency of contact, usefulness and extent of use of information sources and its effectiveness. The study was conducted in Villupuram and Salem districts representing two diverse agro climatic zones of Tamil Nadu. The study revealed that Veterinarians in institutional sources;

family members in non-institutional sources; television in case of mass media sources were most frequently contacted by the dairy farmers for seeking information, ranked as the most useful information sources and also revealed as most utilized information source. All the technologies in feeding, breeding, health care and management were found to be most effective among the dairy farmer

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GENETIC VARIATION OF RESISTANCE TO *HAEMONCHUS CONTORTUS* INFECTION IN NATURALLY INFECTED SHEEP AND GOAT IN ORGANIZED FARM OF WEST BENGAL

JOYDIP BISWAS AND PRANAB KUMAR SENAPATI

*Department of Animal Genetics and Breeding
West Bengal University of Animal and Fishery Sciences
Kolkata-700 037*

A study was carried out to investigate the genetic variation of resistance to *Haemonchus contortus* and to establish indicator traits of resistance in different breeds of sheep and goat in an organized farm of West Bengal. Faecal and blood samples were collected from 80 sheep [Garole, Mujaffarnagri, Mujaffarnagri x Sahabadi (50%) and Mujaffarnagri x Corriedale (50%)] and 35 goat (Sirohi & Black Bengal); the average EPG and LEPG was 364.20 ± 47.50 , 5.50 ± 0.1495 and 75.64 ± 19.14 , 4.56 ± 0.22 respectively for sheep and goat. The indicator traits, faecal egg counts (EPG), total erythrocyte count (TEC) and total leukocyte count (TLC) were significantly differed in two species as well as for different breeds. Results revealed that the *Haemonchus contortus* infection was significantly ($P < 0.05$) higher in sheep in comparison to goat. Different breeds of sheep and goat showed varying results in respect of resistance to *Haemonchus contortus*. Sirohi goat and Mujaffarnagri x Sahabadi (50%) sheep breed exhibited a lower LEPG (log egg per gram) levels compared to other breeds of the same species. The study revealed that LEPG was negatively correlated with the resistance, TEC and TLC and statistically significant ($P < 0.05$).

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ISOLATION AND MOLECULAR DETECTION OF *BRUCELLA ABORTUS* FROM FARM ANIMALS OF AIZAWL, MIZORAM

T.K. DUTTA, P. ROYCHOUDHURY, RAJESH CHANDRA AND T.K. RAJKHOWA

*Department of Veterinary Microbiology
College of Veterinary Sciences and Animal Husbandry
Central Agricultural University, Selesih
Aizawl, Mizoram – 796 014*

Prevalence of Brucellosis is worldwide. In cattle and buffaloes the disease caused by *B. abortus* which mainly characterised by abortion, still birth, weak or debilitated newborn and sometimes retained placenta in females. The present study involved isolation and identification of *B. abortus* from clinically infected cattle. Serological study like RBPT, STAT and milk ring test were also corroborated with the isolation results. Species specific PCR was also done for confirmation. Antimicrobial sensitivity test revealed identical sensitivity pattern for both the isolates.

STUDIES ON REPRODUCTIVE TRAITS IN CATTLE AND BUFFALO UNDER FARMERS' MANAGEMENT

NIRAJ KUMAR, S.R. SINGH, P.K. SINGH, K.G. MANDAL AND AMIT RANJAN

*Department of Animal Breeding & Genetics
Bihar Veterinary College
Patna - 800 014*

Altogether 385 records comprising of 96 Desi, 64 Jersey crossbred and 64 Friesian crossbred cows as well as 161 graded buffaloes, maintained under farmers' management system in and around Darbhanga (Bihar), were analyzed according to least squares analysis to study the magnitude as well as direction of variation in their dry period and calving interval due to genetic and some non-genetic factors. The genetic constitution of the animals influenced dry period and calving interval significantly ($P < 0.01$). Lactation order had highly significant ($P < 0.01$) effect on calving interval. Its effect on dry period was also found to be significant ($P < 0.05$). Variations in both the traits due to season of calving, location of the herd, herd size, herd constitution and farming system were statistically non-significant.

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EXPLORING GENDER PARTICIPATION AND DECISION MAKING IN IMPROVED DAIRY HUSBANDRY PRACTICES IN TAMIL NADU

N. NARMATHA, M. JOTHILAKSMI, V. UMA AND K.M. SAKTHIVEL

*Department of Veterinary and Animal Husbandry Extension
Veterinary College and Research Institute
Namakkal-637 002*

The study was designed to determine gender participation and decision making in improved dairy husbandry practices. It was conducted in Namakkal district belonging to Northwestern zone of Tamil Nadu. Data was collected from 325 livestock farmers through pretested interview schedule and participatory rural appraisal method. Gender participation and decision making were analysed using frequency distribution, percentile and chi-square test. Dairy farming practices were categorized in to breeding, feeding, health care, management and marketing domain for studying participation and decision making. The participation and decision making in dairy farming activities showed similar trend. Joint participation and decision making by both men and women was noticed in most of the breeding, feeding and management activities. But participation and decision making of men was higher in health care and marketing domains. Despite this division of work, dairy farming activities continues to be a household activity with flexible arrangements of work between women and men. Their participation is potentially important to bring equality between women and men in order to achieve sustainable development. The study revealed that record maintenance and chopping of fodder were not carried out in the study area. Therefore, a strong extension program should be needed to educate the farmers in record keeping in order to understand the cost benefit ratio. And, farm mechanization could be promoted for drudgery reduction and enhancing effective fodder utilization

A COMPARATIVE STUDY ON THE EFFECT OF BREED ON CARCASS CHARACTERISTICS OF BLACK BENGAL AND JAMUNAPARI GOATS

A. CHAKRABORTY, S. BISWAS, R. CHAKRABORTY, D. MAJUMDER
AND A. DHARGUPTA (CHAKRABORTY)

*Department of Food Technology and Bio-chemical Engineering
Faculty of Engineering and Technology
Jadavpur University, Kolkata-700 032*

A study was conducted to test the effect of breed on carcass characteristics and physical cut comparison of Black Bengal and Jamunapari goats. 10 castrated male goats and 10 adult female goats of each breed of 10-12 months of age with an average body weight of 5-8 kgs were selected for the study and were slaughtered with standard humane procedure. Data were analyzed statistically with two factor factorial ANOVA technique. The results indicated that the slaughter weight, empty body weight, hot carcass weight, chilled carcass weight, carcass length and dressing percentage on slaughter weight showed significant difference ($P < 0.01$) between the two breeds. Significantly higher values were recorded for weight of head, blood, skin and lung and trachea ($P < 0.01$) in Jamunapari goats. Weight of heart, liver, spleen, kidneys and weight of pluck also varied significantly ($P < 0.01$) between the two breeds. Weight of wholesale cuts (neck, shoulder, rack, loin, leg, breast and shank) in Jamunapari goats were significantly higher ($P < 0.01$). The percent yield of meat, fat and bone in different wholesale cuts differed significantly ($P < 0.05$) between the breeds and the percentage proportions of meat in whole carcass observed in the present study were 60.406 ± 0.011 and 70.328 ± 0.009 for Black Bengal and Jamunapari respectively.