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DEVELOPMENT OF USER-FRIENDLY DIAGNOSTIC TOOL TO DETECT ANTI-BLUETONGUE ANTIBODIES

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A rapid and user-friendly indigenous dipstick enzyme linked immunosorbent assay (dipstick-LISA) was developed based on dot-ELISA principle for detection of anti-bluetongue antibodies in sheep. Dipstick ELISA detected anti-BT antibodies in apparently healthy sheep using laboratory prepared horse radish peroxidase conjugated rabbit anti-sheep immunoglobulin. Positive reactions were easily visualized as brown dots on nitrocellulose membrane blocks of the sticks. The results were in complete agreement with the conventional competitive ELISA (c-ELISA) results. The dipstick-ELISA developed appears to have potential application in rapid screening of field sera for bluetongue diagnosis.

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GROWTH RESPONSES OF *LABEO BATA* LARVAE ON FEEDING DIFFERENT PLANT PROTEINS

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A 35-day experiment was conducted to evaluate different protein sources on growth and survival of *Labeo bata* larvae of av. wt. 15mg. Three different feeds as Feed-1 (Control) Feed-2 (Ground nut cake based) and Feed-3 (Mustard cake based) along with other feed ingredients. The net weight gains were 80.50 ± 9.5 , 105.50 ± 4.5 and 147.50 ± 3.50 (mg) respectively for Feeds 1, 2 and 3. The growth performance was significantly higher ($P < 0.05$) in Feed-3 fed fish compared to that of Feed-1 and Feed-2. Net weight gain, Av.daily gain and SGR (%) and survival rate was also significantly higher ($P < 0.05$) in fish of Feed 3 group under the present experimental condition. It may be summarized from the present experiment that the best growth performance was observed in *L. bata* larvae with Feed-3 having 35% mustard cake.

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ISOLATION OF *E.COLI* FROM DIFFERENT SOURCES OF DRINKING WATER

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Bacteriological analysis of drinking water from different sources was conducted to assess the presence of *E.coli* in drinking water. In the present study a total of 100 water samples were collected from various sources like hand pumps, wells, taps, rivers and ponds. Standard plate count (SPC)/Heterotrophic plate count (HPC) was conducted to determine the bacteriological quality of water and Most Probable Number (MPN) test was done to detect the coliform count. The standard plate count of water ranged from 0 - 6.0429 log₁₀ cfu/ml. The organisms detected from water samples were *E.coli* (26%), *Klebsiella* (8%) and *Pseudomonas* (7%). The result revealed that river and pond water were highly contaminated and unfit for consumption.

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ANTIMICROBIAL ACTIVITY OF LACTIC ACID BACTERIA ON *STAPHYLOCOCCUS AUREUS* INOCULATED POMFRET FILLET

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In the present study *Lactobacillus pentosus* FPTLB13, capable of producing bacteriocin having broad spectrum of inhibition, was used as a biopreservative against *Staphylococcus aureus* ATCC 25923 in silver pomfret fillet. In the control samples (C) at 6 ± 10C, the count of *S. aureus* on pomfret cubes increased from an initial value of 4.6 log cfu/g to 7.27 log cfu/g over a period of 14 days. Application of *Lactobacillus pentosus* FPTLB13 (T) resulted in a significant (p < 0.05) inhibition of the *S. aureus* count, reaching a value of 6.42 log cfu/g on day 14. At 10 ± 10C, a very rapid increase in *S. aureus* counts was observed in control samples with almost 2.4 log cycles increase during the first three days. Application of *Lactobacillus pentosus* FPTLB13 (T) significantly inhibited (p < 0.05) the growth of *S. aureus* during the study period resulting in over 2 log cycles reduction in final count as compared to control. Application of low temperature of 6 ± 10C and vacuum did have a synergistic effect on inhibition of the *S. aureus* on fish fillets. The results of the study thus suggests that application of protective culture in the form of LAB, particularly bacteriocin producing strains may be useful in preventing possible contamination by Gram positive food borne pathogens such as *S. aureus*.

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BAKED SEER FISH : A VALUE ADDED PRODUCT FOR PUBLIC HEALTH

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Low cost small sized seer fish (*Scomberomorus guttatus*) which is commonly available along Orissa coast was considered for baking and effect of baking on quality changes has been studied in the present paper. The fish portions of 50 to 60 g each were marinated with spice mixture at room temperature for 60 min for spices to penetrate into the fish muscle. The heat processing time of fish portions were standardised for 60 min at 15 psi (121.20C) so as to make the fish bones soft and palatable. Baking time was also standardised at 160C for a period of 60 min for preparation of baked product. The proximate composition of fish and baked fish portions revealed that moisture content decreased by 15.4% where as crude protein and lipid content

increased significantly by 28.04% and 42.4% respectively ($p < 0.05$). The chemical and microbiological changes due to baking the fish portions were also analysed and discussed. The organoleptic evaluation of baked seer fish samples was conducted in a 5-point hedonic scale. Besides, the softness of the bones and its palatability improved the overall acceptability of baked product to a higher degree.

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ORAL ADMINISTRATION OF SIMVASTATIN AUGMENTS SEGMENTAL LONG BONE HEALING IN RABBIT

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Simvastatin, a potent statin member inhibits the mevalonate pathway and effectively augment the fracture healing in *vivo*. Present experimental study was to investigate the role of simvastatin in the management of fracture in rabbits. Simvastatin was fed at the dose rate of 120mg/kg body weight for 30 days to six rabbits after stabilizing the segmental defect with stainless steel K-wire and the animals were sacrificed after 42nd post operative day. In control group (n=6), the segmental defect was stabilized and allowed to repair without any treatment. Radiological and histomorphological analysis revealed significant enhancement of new bone formation in simvastatin treated group on 14th, 28th and 42nd day of observation as compared to control group. The experiment conclude that simvastatin can enhance the healing and remodeling process effectively through proliferative stimulation and differentiation of mesechymal cells in the segmental defect.

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EFFECT OF SUMMER STRESS ON HAEMOGRAM AND WEEKLY HEN DAY AVERAGE OF RHODE ISLAND RED (RIR) LAYING BIRDS AT BACKYARD CONDITION IN DIFFERENT AGROCLIMATIC ZONES OF WEST BENGAL

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Backyard poultry plays vital role providing nutritional security and livelihood to the below poverty line people particularly women. The monitoring of association of haemogram with egg production for optimum egg yield to asses physiological status is required in backyard poultry particularly during summer stress. In this context, haemogram *viz.* haemoglobin and total leukocyte were estimated from Rhode Island Red (RIR) birds reared at backyard. The relationship with the haemogram and weekly hen day average during summer was studied. Total 600 samples were collected equally from five agroclimatic zones of West Bengal. The overall study showed that during summer season (26th - 37th week on age), the weekly hen day average showed significant difference ($P \leq 0.01$) in different agroclimatic zones only upto 31st week and no significant difference was observed in respect to haematological profile except basophil and monocyte percent ($P \leq 0.01$). The mean weekly hen day average was 3.39 ± 0.09 , which indicated that the RIR was well adopted in various agroclimatic zones of West Bengal as no significant changes were observed in the haemogram with optimum hen day average.

HISTOMORPHOLOGICAL STUDIES ON THE DEVELOPING MESENTERIC LYMPH NODE OF PRE-NATAL GOAT

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Histomorphological studies on the mesenteric lymph node the prenatal goat were done in different gestational age group. By 80 day of gestation mesenteric lymph nodes appeared as a small lymphoid mass being covered by a thin capsule. The cortex revealed densely packed lymphocyte and medulla was looser and revealed a cell synsitiium that contained lymphocytes, lymphoblasts, reticular cells, plasmoblasts and profuse capillary network. No significant changes were noted by 106 days of gestation. By 120th day the capsule and trabeculae appeared as a thin membrane and contained few collagen fibers with fibroblasts whereas by day 130 of gestation the capsule became significantly thick and cortex did not reveal any nodule rather compact DLTS. The corticomedullary junction was distinct. As age advanced the DLT of cortex became condensed with lymphoid accumulation to establish the nodules in the neonates. The Reticular fibers were more prominent in the medulla than in cortex. Elastic fibers could not be demonstrated at any location in the all foeti studied.

DAIRY FARMERS' KNOWLEDGE ABOUT IMPROVED DAIRY FARMING PRACTICES – A STUDY IN PATNA DISTRICT OF BIHAR

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Present investigation was undertaken in Patna district of Bihar to know the knowledge level of dairy farmers about scientific dairy farming practices. Data were collected through pre-tested semi-structured interview schedule from randomly selected 100 dairy farmers belonging to each of five villages of purposively selected Naubatpur and Masaurhi blocks of Patna district. The study revealed that majority of the respondents had medium level of knowledge about different improved dairy farming practices. Occupation, education of respondent, family education status, herd size, social participation, source of information, annual income and daily milk production were significantly and positively correlated with knowledge level of respondents whereas age, caste, family size, land holding, house type, farm power and material possession were non-significantly and positively associated with knowledge level of respondents.