4.

Name of scholar with admission Number: Dr. Ravinder Kumar (V-1997-30-06)

Degree Awarded: M.V.Sc

Year of Award: 1999

Name of Major Advisor: Dr R.K. Mandial

Title of Thesis: *Investigations on Clinical Colibacillosis in Calves.*

Abstract

During the present investigation the overall incidence of colibacillosis was recorded to be 85.71% in calves in and around Palampur area (H.P). The incidence was 91.1% in diarrhoeic calves and 68% in non-diarrhoeic calves. On serotyping O10 and O118(33.33% each) were most common serogroups. *E.coli* count in diarrhoeic calves was 616.55 fold higher than in control group. During in-vitro study, the *E.coli* was most susceptible (100%) to ofloxacin, ciprofloxacin and gentamicin, whereas it was least susceptible to tetracycline. The pertinent clinical manifestations included the significantly (*P*<0.05) increased respiration and heart rate, poor suckling reflexes, profuse diarrhoea with watery to loose consistency and dehydration. Haematological findings revealed a significant (*P*<0.05) increase in mean haemoglobin concentration (12.75±0.50 and 12.43±0.76g/dl) and packed cell volume (42.67± 2.15 and 43.67± 2.59 percent) in calves of group B and D. The blood gas and acid-base status revealed lower mean value of blood pH (7.138±0.06 to 7.254± 0.04), plasma bicarbonate (16.08± 1.00 to 18.18± 2.42m mol/l), partial pressure of oxygen (20.03± 3.11 to 33.07± 1.64 mmHg) and total carbon dioxide (17.02± 0.84 to 20.63 ± 2.92m mol/l) along with higher partial pressure of carbon dioxide (37.95± 3.16 to 56.00± 6.60 mm Hg). The blood biochemical analysis indicated a significantly (*P*<0.05) lower mean value of plasma sodium concentration (121.83± 2.04 to 132.0± 1.79m Eq/l) in the diseased calves. During in-vivo drug trial ampicillin- cloxacillin combination was most efficacious followed by ofloxacin, enrofloxacin and amoxycillin. After
instituting various therapies the haematological, blood gas and acid base status, and blood biochemical parameters were towards restoration by the 3\textsuperscript{rd} and 5\textsuperscript{th} day of treatment. The administration of Ringer’s lactate was able to normalize acid base status and dehydration in all the groups. The recovery rate was recorded to be 100\% in all the groups. The administration of probiotic \textit{Loctobacillus acidophilus} did not cause any significant (P<0.05) alteration in clinical, haematological, blood gas and acid-base, and blood biochemical parameters. No significant (P<0.05) weight gain could be recorded in probiotic fed calves, however, \textit{E coli}. count remained slightly lower.