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Prevalence of colibacillsis disease in lambs in Kashmir valley

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Colibacillosis is one the important diseases in new born farm animals caused by pathogenic serotypes of *Escherichia coli* characterized by marked prostration, profuse diarrhea and septicemia (Gyles 1992). Sheep rearing forms an integral part of rural economy particularly in the mountainous and semi-arid regions of the country. The success of sheep farming is largely based on the good health status and low mortality rate during early life. This is measured in terms of lambs successfully reared in a given season which can be achieved by decreasing early mortality rate over a shorter period of time (Vihan *et al.* 1982). In the view of above problem, the present research was carried out in different areas of Kashmir valley to study the prevalence of this disease in lambs, which ultimately affect the sheep husbandry sector at large scale and to establish the epidemiological factors associated with this disease.

During present study, an attempt was made to estimate the prevalence of colibacillosis disease in diarrheic lambs from organized farms and unorganized areas. The study was conducted viz. spring, summer, autumn and winter from year 2010 to summer 2011. Rectal swabs from 300 diarrheic lambs of below 8 weeks age were collected aseptically and processed within 2 to 4 h for the isolation and identification of *Escherichia coli* using standard cultural, microbiological and biochemical tests (Barrow and Felham 1992). Blood smears were found negative for any hemoprotozoan and rickettsial organism. Fecal samples were negative for any ova/cyst. Cultural examination of fecal sample revealed presence of *E. coli* as evident from metallic sheen on EMB media which was subsequently confirmed by biochemical tests. *Salmonella* and *clostridium* were ruled out on the basis of negative culture reports on Brilliant Green Agar (BGA) and blood agar base containing 5% sheep blood. All the *E. coli* isolates were sent to National Salmonella and Escherichia Centre Central Institute Kasauli (Himachal Pradesh) for serotyping.

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Studies on the prevalence of colibacillosis in lambs were conducted during different seasons in different geographical areas. In all 300 diarrheic cases that were screened for the presence of *Escherichia coli,* overall prevalence was 85.33%. Prevalence of 97.38% was reported in diarrheic neonatal farm animals (Debnath *et al.* 1990). Variability in the prevalence of *E. coli* infection was also observed in different seasons with highest infection rates in autumn (92.10%) followed by winter (91.76%), spring (84.31) and summer (59.45%). The prevalence in organized and unorganized farms was 71.56 and 92.42%, respectively (Table 1). Prevalence was higher (96.0%) in the lambs of 0–1 week age group compared 3–4 weeks (87.50%) and > 4 weeks (73.33%). The higher prevalence recorded in this study to the un-organized sector could be due to inappropriate hygienic measures leading to more stressful conditions which subsequently resulted in heavy infection due to decreased immunity in lambs and also to the fact that lambs of 1-week age group are highly susceptible to the *E. coli* infection due to low circulating immunoglobulins (Abduslam 2000). Thus good management should be at the maximum level during first weeks of neonatal life (Radostits *et al*. 1994). High prevalence in autumn and winter might be due prolonged winters, close confinement, overcrowding and decreased immunity due to less colostrum intake during these seasons. Severity of the disease varies considerably from year to year on given premises, even in an isolated herd. High prevalence in winter was reported in neonatal farm animals (Ahmed 2009). Low prevalence in summer may be because of low lambing in the region, release of sheep to pastures and reducing the close proximity between

Table 1. Prevalence of *E. coli* infection in organized and unorganized farms

Samples	Un-organized	Organized	Total
Total	198	102	300
+ve cases	183	73	256
-ve cases	15	29	44
Percentage	92.42	71.57	85.33

infected and healthy animal. Higher prevalence in lambs of 0–1 week age group indicates more susceptibility of neonatal lambs to infection.

SUMMARY

The information about the prevalence of colibacillosis in sheep is scanty, hence, an attempt was made in the present work to relate various characters of *Escherichia coli* scours. Overall prevalence of *E.coli* was 85.33%. Higher prevalence was in autumn (92.10%), followed by 91.76% in winter, 84.31% in spring and lowest in summer (59.45%) The lambs of 0–1 week of age showed highest occurence and lower in lambs of >4 weeks of age. The unorganized sector showed highest prevalence. It can therefore be concluded that colibacillosis in lambs may be considered as important disease responsible for neonatal diarrhea and generalized loss in sheep husbandry.

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