



Prevalence of digestive and respiratory disorders in Vrindavani cattle

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The outstanding Vrindavani synthetic crossbred cattle strain developed by the Indian Veterinary Research Institute, Izatnagar (UP) is having 50–75% exotic inheritance from Holstein Friesian, Brown Swiss and Jersey and 25–50% indigenous inheritance from Haryana. The present research work was undertaken to study the prevalence of digestive and respiratory disorders in crossbred cattle strain Vrindavani.

The animals were loose housed and calves were weaned at birth. The colostrum from the dam was handfed to the calves. The calves were given milk upto 72 days only and calf starter with succulent green fodder were made available to the calves as early as second week itself on *ad lib.* basis up to 3 months. The calves were vaccinated against foot-and-mouth disease, hemorrhagic septicemia and brucellosis (*Brucella* 19) strain. Butox (deltamethrin) and ectomin (cypermethrin) were sprayed twice in a year for ecto-parasite eradication. The nutritional requirements were met through a balance combination of green and dry fodder alongwith concentrate mixture.

The animals in present study were investigated for digestive (diarrhoea, enteritis) and respiratory (pneumonia) disorders during three seasons (rainy, winter, summer) and these animals were grouped in 4 groups (0–3 months, 3–6 months, 6–18 months and above 18 month). The digestive and respiratory disease prevalence rates were calculated as follows:

$$\text{Prevalence} = \frac{\text{Number of cases during the period}}{\text{Number of susceptible animals}}$$

$$\text{Sex specific prevalence} = \frac{\text{Number of diseased animal in a specific sex}}{\text{Number of susceptible animal in that sex}}$$

The overall prevalence of digestive disorders in Vrindavani herd was 6.3% which was the highest during

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winter (9.6%) followed by rainy (7.4%) and summer (4.9%). There was significant difference in prevalence of digestive disorders between summer with rainy season and winter. Up to age of 6 months, highest prevalence of digestive disorders was observed during the rainy followed by summer and winter. This may be ascribed due to better chances of proliferation and infection of the pathogens to less immuned calves during rainy season. In the older age groups, 6–18 months and above 18 months, the digestive disorders were more prevalent during the winter, which may be due to the berseem fodder that causes bloat and other digestive disorders in case of excessive consumption. Animals of 6–18 months had only 2.4% prevalence of digestive disorders and animals of age group above 18 month had an average prevalence of 2.3%. There was significant difference in prevalence of digestive disorders among all age groups upto 18 months and there was no significant difference between 6–18 months age group and above 18 months age group. There was significant difference in the prevalence of digestive disorders between sexes in all age groups except in age group above 18 month. Santra *et al.* (1996) reported that highest number of calves were affected due to enteritis in age group below 30 days and decreased with advancement of the age of animals. Singh *et al.* (1986) reported a high prevalence of digestive disorders in the crossbred calves of below 3 month age at NDRI, Karnal. Similar to present findings, Kumar *et al.* (2001) reported high prevalence of digestive disorders during rainy season. Salman *et al.* (1990) reported an incidence of 9.1% for the digestive disorders in the cows of exotic breed. Odde (1988) and Santra *et al.* (1996) also reported increased prevalence of digestive disorder in male due to management carelessness for male calves of dairy breeds.

The overall prevalence rate of pneumonia for all age groups in both sexes was about 1.5% and it was highest during rainy season among the calves of 6 month age. The prevalence of pneumonia was maximum (9.8%) in the age group of 0–3 months. The average prevalence of pneumonia for the age group of 3–6 months was 4.2% and highest prevalence of pneumonia was during the rainy season (7.3%) followed by

winter (4.5%) and summer (1.8%). The prevalence of pneumonia in rainy season and summer was significantly different in 0–3 and 3–6 months age group. The high rate of prevalence of pneumonia during the rainy season was due to the high humidity in the atmosphere which predisposes the calves to the pneumonia.

The average prevalence of pneumonia for the age group 6–18 months and above 18 months was 0.8% and 0.2%, respectively with highest prevalence during winter season. The prevalence of pneumonia between various age groups was found to be highly significant whereas prevalence of pneumonia between sexes in each age group was non-significant. The present study revealed that the prevalence of the pneumonia decreased with the increase in age. In agreement with the present findings Assie *et al.* (2004) reported that the incidence rate of respiratory disorders was the highest during the early calfhoo and it decreased after 105 days of age in Charolais breed of cattle. Singh *et al.* (1986) reported that the respiratory disorders were severe (9.8%) during the initial stages of calfhoo based on a study conducted at NDRI Karnal. Bryson *et al.* (1991) reported a cumulative incidence of 8.4% pneumonia in the dairy heifers from birth to 8 weeks of age. Verhoef *et al.* (1992) reported an incidence of 7.3% for respiratory disease for calves of up to 90 days of age in the Holstein herd at New York.

SUMMARY

The prevalence of digestive and respiratory disorders in crossbred cattle strain Vrindavani was studied. The study revealed that the prevalence of digestive disorders was high in younger age groups and the prevalence was decreasing with the age. In young age groups, the prevalence was more during rainy season, while in advanced age groups the digestive disorders were more prevalent during the winter

season. A significant difference was observed between the prevalence of digestive disorders in males and females. The prevalence of respiratory disorders was also found to be high in younger age groups. As the age increased, the prevalence of respiratory disorders decreased. In adults, the effect of season on prevalence of pneumonia was nonsignificant.

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