When other factors such as lost milk production and increased labour are taken into account it is highly probable that babesiosis costs the farmers in Northern Ireland an estimated £250,000 per annum. This statement is slightly misleading because 84 per cent of the cases occurred in the counties of Armagh, Fermanagh and Tyrone. As a result the greatest part of the loss (£212,500) is sustained by the farmers in these three counties, which comes as an additional burden to the difficulties already posed by remoteness and climate.

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# Short Communications

## Dose effect on experimental reproduction of rotavirus diarrhoea in colostrum-deprived newborn calves

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ROTAVIRUS is frequently associated with neonatal calf diarrhoea. Lecce and others (1978) suggested that, in piglets, there exists a relationship between the severity of the disease and the importance of contamination and the same has been proposed for the bovine species (Van Opdenbosch and others 1979).

In order to verify and quantify such a relationship in newborn calves, animals were inoculated with different amounts of bovine rotavirus. Titrated suspensions of cell culture rotavirus were used. The first inoculations were performed using very high doses of infectious virus, which it was supposed would provoke a severe diarrhoea.

Six colostrum-deprived newborn calves (1 to 6) were inoculated orally, one to two hours after birth, with 100 ml of a suspension containing either $5 \times 10^9$ plaque forming units (pfu) of rotavirus S14 (sixth passage on Georgia bovine kidney cells) for three of them or $2 \times 10^{10}$ pfu of rotavirus S77 (fourth passage on Georgia bovine kidney cells) for the three remaining ones.

Both strains were isolated in our laboratory from stools of calves which had died from a severe diarrhoea (Dagenais and others 1981b); the viral suspensions were titrated by plaque assay (Matsuno and others 1977).

Two other calves (11 and 12) were inoculated in the same conditions, with $2 \times 10^5$ and $2 \times 10^4$ pfu of rotavirus S77 respectively.

Meconium was taken before inoculation. After inoculation, stool samples were collected twice a day for 10 days and then daily until day 15; serum samples were taken on days 0 and 15.

Rotavirus was detected in the faeces by a counterimmunoelectroosmophoresis (CIEOP) technique (Dagenais and others 1980) and by isolation in cell culture (Babiuk and others 1977). Serum samples were examined for the presence of antirotavirus antibodies by CIEOP using purified bovine rotavirus as antigen.

None of the first six animals developed diarrhoea or any other clinical symptom, whereas calves 11 and 12 suffered from a severe, but transient, diarrhoea 48 hours after inoculation.

Rotavirus excretion began 48 to 72 hours after inoculation and lasted at least until day 14. Seroconversion was observed on day 15 in all the animals, except calf 11, whereas none of them possessed specific antibodies at birth.

High doses of cell culture bovine rotavirus failed to provoke diarrhoea in colostrum-deprived newborn calves, whereas lower doses of the same virus strain succeeded.

Low amounts of the cell culture rotavirus strain used were therefore still pathogenic for the newborn calf.

A possible explanation for this paradoxical phenomenon might be found in the interferon response. Indeed, bovine rotavirus is highly susceptible to interferon, as it has already been shown for the two strains used in this study (Dagenais and others 1981a).

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## Treatment of anoestrus in pigs

PREGNANT mares' serum gonadotrophin (400 iu) combined with lumen chorionic gonadotrophin (200 iu) was administered to anoestrous sows and gilts. Two thirds of the treated animals were mated successfully within seven days and although no control animals were included in the study it is suggested that this hormone combination may be useful in herds with an anoestrus problem.

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