ally reveals feeding errors.

Confirmation of Diagnosis

Proving your hypothesis may be the most difficult part of the process because of the need to apply the "treatment" to all cows in the group rather than treatment and controls, because multiple therapies are used such as a change in the nutrition and vaccination program, and finally because of the time needed to show results.

Case Scenarios

Poor pregnancy rates in yearling heifers
Determine: How many of the heifers were in heat prior to breeding season?
Comments: Puberty in heifers is controlled by genetic makeup and subsequent growth. A target weight of 65% of mature weight is used as a goal. Pregnancy rates on the first estrus are poor thus heifers should cycle at least once prior to anticipated breeding.

Poor pregnancy rates at fall pregnancy check yet the cows are in good condition
Determine: What was the body condition of the cows prior to calving?
Comments: Condition score at calving ≤ 4 out of 9 results in decreased pregnancy rates as compared to cows ≥ 5. Post-calving nutrition is also important and increased intake 2-3 weeks prior to breeding may help some but will not overcome poor condition at calving. A classic scenario is the drought last summer, the cows went into the winter thin, calved thin, and thus did not cycle during the restricted breeding season. Adequate grass this summer results in increased body condition. Thus a cow's condition at weaning in 1995 can alter pregnancy rates at weaning in 1996.

Decreased pregnancy rates in spite of adequate body condition and estrus expression
Determine: Protein content of ration or serum/milk urea of case and control group.
Comments: Excess protein intake, especially degradable and soluble protein, has been associated with possible embryonic mortality. Cows will cycle normally and be bred but appear not to become pregnant. This author finds the concept very good but the diagnosis is hard. Serum and milk urea contents vary during the day especially in relation to feed intake, thus is your measurement a peak or trough relative to a cutoff value. Likewise an elevated serum urea may indicate a lack of soluble carbohydrates in the ration.

References

1. McClure TJ, Nutritional and Metabolic Infertility in the Cow. Wallingford, CAB International 1994.

Abstract

Nephrotoxicity of *Narthecium ossifragum* in cattle in Norway

A. Flåøyen, M. Binde, B. Bratberg, B. Djønne, M. Fjølstad, H. Grønstøl, H. Hassan, P. G. Mantle, T. Landeverk, J. Schönheit, M. H. Tønnesen
Veterinary Record (1995) 137, 259-263

During the summer of 1992 renal failure was diagnosed in 232 grazing cattle in 85 herds on the west coast of Norway. The salient clinical signs were depression, anorexia and melaena or fresh blood in the faeces; diarrhoea was also commonly observed. The serum concentrations of creatinine, urea, magnesium and phosphorus, and the activities of glutamate dehydrogenase, aspartate aminotransferase and creatine kinase were above normal and the serum calcium concentration was below normal. Post mortem examinations consistently revealed renal tubular necrosis. In some cases there was liver necrosis and also erosions at the base of the tongue, in the oesophagus and in the jejunum and colon. The toxicity was probably caused by the plant *Narthecium ossifragum* (bog asphodel).