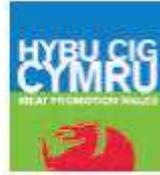


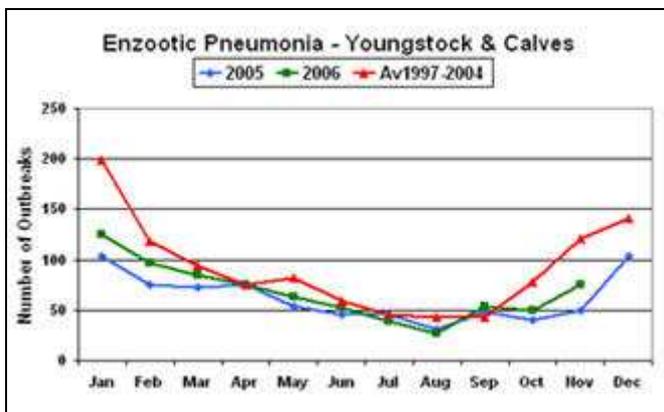
# NADIS Health Bulletin



Knowledge transfer to farmers

## Respiratory disease in cattle

Respiratory disease is estimated conservatively to cost the UK cattle industry £60 million annually (between £30 for mild cases to £500 when the animal dies). Losses result from mortality, treatment costs but most importantly, weight loss during illness and often protracted convalescence. Respiratory disease is a major animal welfare concern (Fig 1)



**NADIS data consistently shows a sharp increase in respiratory disease during autumn and early winter**

Respiratory disease in cattle is an interaction between the infectious agent(s) (whether bacterial, viral or both), the environment, and immunity of the individual animal. The important viral causes of respiratory disease are infectious bovine rhinotracheitis (IBR, Fig 2) and bovine respiratory syncytial virus (BRSV); parainfluenza-3 virus is much less important. These viruses can cause disease by themselves or damage the defence mechanisms of the upper respiratory tract and predispose to secondary bacterial infections of the lungs. There are a large number of bacteria that can cause either primary lung disease or secondary to viral compromise of the lung defence mechanisms.

**Important predisposing viral causes are:**

- infectious bovine rhinotracheitis (IBR)
- bovine respiratory syncytial virus (BRSV)
- parainfluenza-3 virus (PI3)

Accurate diagnosis of the cause(s) of respiratory disease is essential (Figs 3 and 4) so that steps can be taken to prevent future diseases and will involve your veterinary surgeon. Laboratory confirmation may be necessary before embarking upon a vaccination protocol in the face of infection, and to prevent a similar problem during the following year. Antibiotic selection is very important and will be carefully considered by your veterinary surgeon.



**Fig 1: Respiratory disease is a major animal welfare concern. Calf affected by severe respiratory disease caused by BRSV. This calf was normal 12 hours earlier. Veterinary attention is essential in this case, and to advise on any further cases. An accurate diagnosis is essential for future control measures.**



**Fig 2: Store beast affected by IBR. Note the purulent nasal discharge.**



**Fig 3: Selection based upon inspection can be very misleading and miss early clinical disease.**



**Fig 4: In many situations selection of cattle for treatment based upon raised rectal temperature is the most cost-effective practice. Ninety to 120 cattle can be checked within one hour in well-organised units.**

### **Infectious bovine rhinotracheitis (IBR)**

Clinical signs generally first appear either 2-3 weeks following housing or other stressful event such as calving. In its most severe form when first recognised in the UK during the late 1970s the morbidity rate (percentage of cattle affected) could be 100% with up to 5% deaths. The first 2 or 3 cattle to show clinical signs are invariably the worst affected (Fig 2). Affected animals do not eat, are very depressed, slow to rise, and stand with the head held lowered. There is a purulent discharge from the eyes and nostrils.

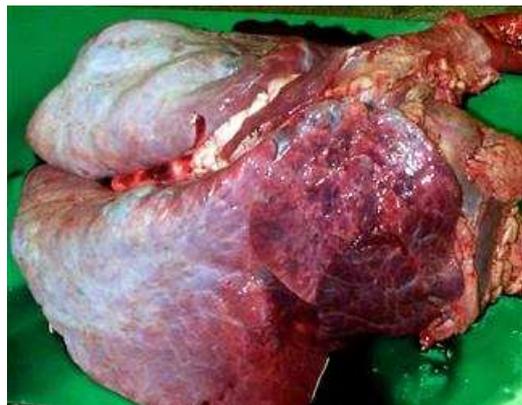
Treatment is based upon veterinary advice. It is essential that the vet is contacted as soon as disease is suspected because the first cattle affected are the most severely affected and accurate diagnosis, treatment, and timely vaccination are essential to prevent further losses.

Routine vaccination of all animals as they arrive on the farm should be performed on beef finishing units. Homebred dairy cattle are typically vaccinated before the start of the breeding programme. Such vaccination protocols will be an integral part of most veterinary herd health programmes. Single vaccination affords life-long protection and costs £2-£3.

### **BRSV infection**

The clinical signs attributable to BRSV infection are highly variable. In severe outbreaks some animals may be found in respiratory distress with mouth-breathing (Fig 1) and rapid abdominal movements leading rapidly to death (Fig 5). In some studies involving housed calves infection has occurred without any clinical signs of respiratory disease.

Secondary bacterial invasion of the damaged respiratory tract frequently occurs which makes treatment difficult. In many situations selection of cattle for treatment based upon raised rectal temperature is the most cost-effective practice (Fig 4). Ninety to 120 cattle can be checked within one hour in well-organised units. The choice of antibiotic treatment is based upon veterinary advice and knowledge of previous outbreaks of respiratory disease on the unit. Recurrence of bacterial infections is common often necessitating repeat antibiotic treatments 5-14 days later – this is not antibiotic treatment failure simply re-infection of the physically compromised respiratory tract.



**Fig 5: Mortality losses represent only part of lost profits**

There are a number of vaccines widely used to control BRSV-induced respiratory disease and veterinary advice should be sought for the most appropriate prevention strategy.



**Fig 6: Many cattle buildings have inadequate ventilation.**



**Fig 7: Expert advice on building ventilation may prove worthwhile in addition to other control measures.**

### General control of respiratory disease

Control of respiratory disease is likely to be best achieved by attention to general husbandry practices, especially the ventilation system which is often wholly inadequate (Figs 6&7) and correctly-timed administration of vaccines. Reducing stocking density, wherever possible, would improve the disease situation on most units. Details of these measures must be included in the veterinary herd health plan. Expert advice on ventilation of buildings may be necessary.

### TEST YOUR KNOWLEDGE

A better understanding will improve disease control and prevention saving you money. The following questions are amongst those that can be found on the NADIS website <http://www.nadis.org.uk> where you can test your knowledge.

1) Respiratory disease costs UK cattle farmers an estimated:

- A £5 million per annum
- B £10 million per annum
- C £20 million per annum
- D £40 million per annum
- E £60 million per annum

2) During an outbreak of respiratory disease, the most severely affected cattle (Fig 1) are found

- A at the start
- B at the peak of disease
- C towards the end
- D weeks after the first antibiotic treatments
- E after turnout to pasture during the following spring

(Answers at bottom of Page 2)

**NADIS Health Bulletins are designed to improve farm income, animal health and welfare by promoting disease control and prevention.**

**Discuss how health planning can improve the profitability of your farm with your veterinary surgeon.**

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