

**Black disease is an acute, highly fatal disease of sheep and cattle. Black disease is usually associated with liver fluke infestation.**

### **What causes the disease?**

Black disease (also called Infectious Necrotic Hepatitis) is caused by the bacterium *Clostridium novyi*. The organism produces toxins in the liver causing death and usually follows damage to the liver by migrating liver fluke.

### **How does the animal become infected?**

Like all clostridial bacteria, *C.novyi* survives in the environment as a durable spore. The spore can survive in the soil and on pastures for many years. They are ingested from pasture by the animal and pass into the liver where they remain for some time with no apparent ill effect. However, if the liver tissues near the spore become damaged, usually by liver fluke the spore is activated. It then multiplies and produces a toxin, which causes the disease.

### **What are the clinical signs?**

Although sheep are the animals mainly affected, losses can occur in cattle. Sheep are often found dead, with no evidence of clinical signs. The disease is less common in cattle and clinical signs may be observed. Affected stock are reluctant to move, lose their appetite and appear dull and listless with death occurring within 48 hours.

### **What is the role of liver fluke in black disease?**

Liver fluke damage appears to “trigger” the disease. Damage to liver tissue near spores reduces local oxygenation and triggers their growth and production of toxins. Outbreaks of the disease are usually precipitated by invasion of the liver with immature liver fluke but other causes of liver damage may also result in black disease.

### **How is it diagnosed?**

Black disease can be suspected if cattle or sheep suddenly die during seasons of high risk for liver fluke. Risk factors include rainfall and mild temperatures, which provide ideal conditions for the liver fluke to develop on pasture. Post-mortem examination by a veterinarian will help avoid confusion with other clostridial diseases and acute liver fluke infestation. The veterinarian may collect additional samples for laboratory assessment.

### **Is there an effective treatment?**

The onset of disease and death is usually rapid and treatment is rarely successful or worthwhile. If early signs are seen in valuable stock, veterinary advice should be sought immediately.

### **Can black disease be controlled or prevented?**

Vaccination effectively prevents black disease but vaccination for black disease will not prevent death or loss of production due to liver fluke infestation. Pfizer's Glanvac<sup>®</sup> 6 range will protect sheep against black disease. For cattle, Ultravac<sup>®</sup> 5in1 can be used, or alternatively, Ultravac<sup>®</sup> 7in1 if protection against leptospirosis is also required. Appropriate management and drenching programs will reduce the incidence of liver fluke and therefore black disease but not eliminate it.

### **What vaccination programs are recommended?**

For previously unvaccinated cattle and sheep, the primary course consists of two doses ideally given 4–6 weeks apart in cattle and 4 weeks apart in sheep. This should be followed by a booster dose 12 months later. Annual boosters should be done about a month before calving or lambing so that passive immunity is transferred from dam to offspring. This will protect them in the first vulnerable period of life prior to them receiving their first vaccination at marking time.

For complete directions refer to the product label. Consult your veterinarian or animal health consultant for advice on specific vaccination programs.

### **What are the correct dose rates?**

Glanvac<sup>®</sup> 6 1mL for sheep/1mL for goats\*  
Ultravac<sup>®</sup> 5in1 1mL for sheep/2mL for cattle  
Ultravac<sup>®</sup> 7in1 2.5mL for cattle

\* Glanvac<sup>®</sup> 6 & Glanvac<sup>®</sup> 6B12 are registered for goats