

# Rabbit Calicivirus

## Rabbit Haemorrhagic Disease Virus (RHDV)

### Significance

- Rabbit haemorrhagic disease is an acute, fatal hepatitis of rabbits
- RHDV: nonenveloped, single-stranded, positive-sense RNA virus
- A rapidly fatal disease of rabbits present in many countries

### Prevalence

- The Australian government first released RHDV1 in 1996 for population control of wild rabbits due to their pest status
- RHDV2, a new strain, is now found in Australia

### Disease

- Calicivirus infects multiple organs, the principal organ being the liver.
- Clinical signs include:
  - Anorexia and gut stasis, fever, lethargy, seizures, anaemia
  - Acute haemorrhage (for example epistaxis - nose bleeds) may be seen
  - Sudden death is common
- RHDV2 often affects kittens from 3 weeks of age, with clinical signs seen 3-5 days prior to death, which is a much earlier presentation than seen with RHDV1 which affected older animals

### Transmission

- Direct contact between rabbits
- Contact with fomites contaminated by urine, faeces or saliva
- Vectors (flying insects)

### Isolation and Diagnosis

- Clinical examination with sample collection
- Post-mortal examination with sample collection

### Strains

3 strains of virus are found in Australia:

- RHDV1
- RHDV1a
- RHDV2 (new strain)

### Screening

- PCR on liver or blood (Dry Blood Spot)
- Serology (RHD ELISA) – vaccination status will affect results.

### **Duration**

- The disease has an incubation period ranging from 3 to 9 days and after the onset of fever (>40°C), the animal generally dies within 12 to 36 hours. A peracute presentation may occur as well, with no premonitory signs.

### **Durability**

- When protected by organic material, RHD viruses are resistant to inactivation and can live in harsh environmental conditions and remain viable for 20 days.

### **Prevention and Control**

- Insect proofing or indoor housing
- Excellent hygiene protocols including disinfection with bleach, sodium hydroxide etc
- Exclusion of other rabbits (pet or wild)
- Vaccinations available in Australia
  - Cylap® (RHDV1 protection)
  - Filovac VHD K C + V (RHDV1 and RHDV2 protection)

### **Reading**

**Abrantes J, van der Loo, W, Le Pendu J, Esteves P J.** 2012. Rabbit haemorrhagic disease (RHD) and rabbit haemorrhagic disease virus (RHDV): a review. *Veterinary research*, 43(1), 1-19.

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