Recommendations for Disinfectants for Rabbit Hemorrhagic Disease Calicivirus

Environmental Persistence of Rabbit Hemorrhagic Disease Calicivirus

- Rabbit Hemorrhagic Disease (RHD) calicivirus is spread by oral, nasal and parenteral transmission
- The virus is present in urine and feces from infected rabbits, thus contaminated bedding can be a source of infection
- Contaminated foods can be a source of infection.
- The virus survives at pH 3.0, is stable at pH 4.5-10.5, but is inactivated at pH>12
- The virus can survive for long periods outside the host. For example:
  - Viable virus has been detected for as long as 105 days in its dried state on a fomite (cloth) at room temperature.
- Environmental temperature and protection by organic material are important factors in the survival of the virus
  - Virus may persist in chilled or frozen rabbit meat and the lengthy persistence of infective virus in carcasses may provide a reservoir of disease after outbreaks in the wild, as viable virus has been found in decaying tissue after 90 days outdoor.
  - At 50C (122F) the virus survives for 1 hour
  - It can remain viable for 22-35 days at 22C (72F) but only for 3-7 days at 37C (99F). It also survives freeze-thaw cycles.

Disinfectants

The RHD calicivirus is inactivated by sodium hydroxide (1%) or formalin (1-2%) as well as 1.0–1.4% formaldehyde or 0.2–0.5% beta-propiolactone at 4C (39F). Chlorine dioxide at 10 ppm concentration also kills this virus.

Other suggested disinfectants include sodium hypochlorite (1:10 dilution household bleach), substituted phenolics such as 2% One-stroke Environ® (Vestal Lab Inc., St. Louis, MO), and potassium peroxymonosulfate (e.g. 1% Virkon-S by DuPont).

Because calicivirus lacks the fatty envelope that most viruses have, its infectivity is NOT reduced by ether or chloroform and trypsin or quaternary ammonium compounds.

References

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