

Deadly Virus for Rabbits

Our topics for this week are:

- **Signs of Rabbit Hemorrhagic Disease in domestic and wild rabbits**
- **Diagnosis of RHD**
- **Control of RHD**

In early spring of 2022, sudden deaths in wild, pet, and feral rabbits began in the Western U.S. Jackrabbits and cottontails were affected in Arizona and New Mexico. Then, wild and domestic rabbits began dying in California, Colorado, Texas, Nevada, and Washington. The disease was determined to be a virus, specifically a calicivirus, that causes Rabbit Hemorrhagic Disease (RHD). RHD causes viral hepatitis in rabbits that leads to depletion of blood platelets and bleeding problems

Types of Rabbit Hemorrhagic Disease

There are two main forms of RHD. RHD virus 1 (RHDV1) was first recognized in China in 1984 and soon after spread throughout the world. The first outbreak in the U.S. occurred in Iowa in 2000. Other outbreaks have occurred in the U.S. in 2005 and 2018. The virus is a calicivirus and highly resistant to destruction in the environment. This means rabbits that survive can continue to spread the virus for up to 2 months and the virus can be carried on handlers' clothing, rabbit cages, feeders, and water sippers. Predators and scavengers can spread the virus in their feces. Once in the environment the virus can persist for months. The virus also remains viable in meat for months, and importation of infected rabbit meat may be a major method of its spread to new regions.

RHDV1 affects only European rabbits, which are pet, meat, and research rabbits in the U.S. In 2010, a new RHD virus, virus 2 (RHDV2) was found in France. It caused disease like that of RHDV1, but was not limited to European rabbits, affecting hares, jackrabbits, and cottontails. Humans and other animals are not affected by RHDV1 or 2. Isolated cases of RHDV2 in pet rabbits have been reported in the U.S. since 2018. The 2020 outbreak in pet and wild rabbits and hares was the first widespread outbreak in the U.S.

Signs and Diagnosis

RHDV1 and V2 viruses affects nearly all exposed rabbits. The death rate is more than 50%. With RHDV1, young rabbits less than 8 weeks old are less likely to be affected, but with RHDV2, young rabbits as young as 2 weeks may be affected. The incubation period for RHDV1 is 1-2 days. It is 3 to 5 days for RHDV2.

Acute RHDV1 or V2 in European rabbits causes reluctance to move, high fever, and increased heart and respiratory rates. Death occurs within 36 hours. A bloody discharge may be seen in the nose, mouth, and vulva. Blood may also be present in the urine and feces. Convulsions and coma often occur just before death.

RHDV2 may advance at a slower rate. Signs include lethargy, lack of appetite, weight loss, and jaundice. Death from liver failure may occur in 1 to 2 weeks. A small percentage of infected rabbits survive and become asymptomatic carriers.

The diagnosis can generally be made on post-mortem findings and confirmed by laboratory tests for the virus.

Control of Outbreaks

Strict quarantine is needed to control outbreaks. Depopulation of infected and exposed rabbits is necessary.

Prevention

There is currently no vaccine against RHDV in the U.S. Importation of foreign vaccines requires a request from a licensed veterinarian and approval of the U.S. Department of Agriculture and governing state veterinarians. A safe and effective approved vaccine is needed in the U.S. for prevention of the disease in domestic rabbits. Vaccination of wild rabbits will probably be unfeasible and sudden large die-offs of cottontails and jackrabbits will occur that will cause insufficient source of food for their predators and scavengers which include hawks, owls, bobcats, coyotes, and foxes, among others.

Recommended prevention measures are:

- Keep pet rabbits indoors at all times
- Wear different clothes and wash your hands when you handle rabbits
- Wear shoes that are only worn when in one rabbit premises and never shoes that are worn outdoors
- Isolate new rabbits for 30 days before introducing to a rabbit colony
- Control the entry of all biting insects into rabbit premises
- Do not feed plant materials from any RHDV outbreak region

Disinfection

Many disinfectants do not inactivate RHDV. Ten percent bleach solution with contact time of 10 minutes or hydrogen peroxide cleaners are effective

Now let's recap the key points to remember from today's episode:

1. **Rabbit Hemorrhagic Disease is a deadly illness caused primarily by RHDV1 or RHDV2**
2. **RHDV1 only affects European rabbits used in the U.S. for pets, meat, and research.**
3. **RHDV2 affects European rabbits, hares, jackrabbits, and cottontails.**
4. **No vaccine is currently approved for use against RHD in the U.S.**

If you're interested in particular subjects contact us at CBC@BetterAnimalHandling.com

More information on animal handling is available in my book, *Animal Handling and Physical Restraint*, published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at: www.betteranimalhandling.com

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.