

RABBIT HEMORRHAGIC DISEASE



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THE CURRENT THREAT OF RHDV2 IS A NEW STRAIN OF RHDV THAT EMERGED IN EUROPE IN 2010. IT CAN ALSO BE FOUND IN AUSTRALIA, AND CURRENTLY REPORTED IN BRITISH COLUMBIA AND NEARING THE U.S. BORDER. NONE REPORTED IN THE U.S. YET BUT WE NEED TO BE AWARE AND VIGILENT OF THE RISKS. RABBIT HEMORRHAGIC DISEASE (RHD), ALSO KNOWN AS VIRAL HEMORRHAGIC DISEASE (VHD) AND RABBIT CALICIVIRUS DISEASE (RCD), IS A SERIOUS, EXTREMELY CONTAGIOUS AND FATAL VIRAL DISEASE OF DOMESTICATED AND WILD RABBITS. RABBIT HEMORRHAGIC DISEASE VIRUS (RHDV), A CALICIVIRUS, CAUSES HIGH RATES OF ILLNESS AND DEATH IN UNVACCINATED ANIMALS. RHDV CAN SURVIVE IN THE ENVIRONMENT FOR LONG PERIODS OF TIME AND REMAIN INFECTIONS TO ANIMALS. RHD DOES NOT AFFECT HUMANS AND IS NOT KNOWN TO AFFECT OTHER ANIMALS.



TRANSMISSION

- Direct contact with live or dead infected animals via oral, nasal or conjunctival routes
- Fomites such as clothing/footwear, grooming tools/supplies/equipment, including contaminated food, water and bedding
- Secretions and excretions – respiratory secretions, urine and feces can spread the virus
- Infected carcasses – importation of infected rabbit meat may be the main transmission method to a new area
- Rabbit fur infected with the virus
- Insects – flies, fleas and mosquitos are very efficient mechanical vectors
- Mammals and Birds can excrete the virus in their feces after ingesting infected rabbits

INCUBATION PERIOD

- RHDV1: 1-3 days
- RHDV2: 3-9 days



This is a mandatory reportable disease. Immediate action is vital for containing outbreaks in disease-free areas.

Suspected cases should be immediately reported to your state and federal veterinarians.



CLINICAL SIGNS

- RHDV1
 - o Affects rabbits greater than 4-8 weeks of age; subclinical in rabbits less than 4-8 weeks of age.
 - o Peracute form: Sudden death within 12-36 hours of developing a fever or may be found dead with no premonitory signs
 - o Acute form: Anorexia, lethargy, and prostration. Affected rabbits may develop neurologic signs (convulsion, paddling, ataxia, paralysis, opisthotonos), respiratory signs (dyspnea, frothy and bloody nasal discharge), cyanosis, lacrimation, ocular hemorrhages and epistaxis.
 - o Subacute/chronic form: Severe and generalized icterus, loss of weight, lethargy. Death to follow within a few weeks.
- RHDV2
 - o Affects all ages of rabbits
 - o Peracute and acute forms are less common with RHDV2 because infected rabbits generally survive longer.
 - o Symptoms are similar to the illness caused by RHDV1

DIAGNOSTIC TESTING:

The most consistent post-mortem lesions are hepatic necrosis and splenomegaly. The liver may be pale, icteric, gray, friable and/or congested with a granular surface texture and distinct lobular pattern. The spleen is generally black and enlarged, with round edges. Disseminated intravascular coagulation (DIC), hemorrhages throughout multiple organs and tissues, is common in the terminal stages of RHD. Small intestinal catarrhal enteritis and icteric discoloration of the ears, conjunctiva, and dermis may be noted in subacute/chronic presentations.

POST MORTEM LESIONS:

Advanced diagnostic testing performed at the discretion of the governmental unit involved in the outbreak.

- Histopathological Examination
- Virus Isolation
- Electron Microscopy
- Virus Detection Elisa
- Immunostaining
- Western Blot
- Reverse Transcription Polymerase Chain Reaction (RT-PCR)
- Hemagglutination Test
- In-situ Hybridization

There is no vaccine in the U.S. because there is no outbreak or positive cases in the U.S. If there was, all vaccinated rabbits would test positive for RHDV and will then be eliminated. Only under emergency protocol can the vaccine be ordered.

BIOSECURITY MEASURES:

- o Disinfection
- o 0.5% hypochlorite (10% household bleach)
- o 10% sodium hydroxide
- o 1-2% formalin
- o One-stroke Environ® (Vestal. Lab Inc., St. Louis, MO)
- o Minimize access to property and restrict contact with rabbits to only those individuals necessary for their care. Secure access to rabbitry by locking doors/gates.
- o Before caring for rabbits, wash/sanitize hands, clean and disinfect boots and wear clean clothing/farm-dedicated clothing.
- o Routinely clean/disinfect equipment, waterers, feeders, grooming supplies and other items coming into contact with rabbits.
- o Avoid travel to areas experiencing disease outbreaks.
- o Routinely monitor rabbits for signs of illness
- o Sudden death with few clinical signs
- o Hemorrhaging from the nose, anus and eyes
- o Difficulty breathing, loss of coordination, reduced activity and reduced appetite.
- o Prevent contact of rabbits with other domestic, wild rabbits and other animals.
- o Insect control
- o Restrict/minimize the use of outdoor exercise areas for rabbits.
- o Disease risks when attending shows/fairs due to exposure to potentially sick rabbits.
- o Limit/Prohibit the introduction of new rabbits – rabbits that appear healthy can be infected and pose a risk to resident rabbits.
- o Quarantine all new rabbits and returning show rabbits from contact with resident rabbits for a minimum of 14 days to monitor for clinical signs. Quarantine for 60 days to ensure they are healthy and to protect against RHD.
- o Provide care for quarantined rabbits only after handling the resident rabbits.
- o Obtain feed from suppliers with quality control programs.
- o Wild plants should be avoided as a food source.
- o Water from surface water sources and shallow wells should not be used due to the increased risk of contamination.
- o Use tightly sealed containers or store feed/bedding inside to protect from contamination.

RHDV is extremely contagious and uninfected regions may place restrictions on importation of live rabbits, meat and rabbit products from affected areas. Maintaining a closed rabbitry can help prevent entrance of the RHDV onto premises. Insect and pest control, including scavenging mammals and birds, is important because they are efficient mechanical vectors of disease spread. Best way to prevent is to avoid contact with infected rabbits/carcasses, or even avoid traveling through infected areas.

References:

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Born and raised in Hawaii. Dr Alfred Mina is a graduate of Washington State University - College of Veterinary Medicine Class of 2000. He owns and practices at the Maika'i Veterinary Clinic, a two-doctor small animal/avian/exotic/emergency clinic in Hilo Hawaii that's open 7 days a week. Dr Mina has raised rabbits and cavies since the age of 12 and showed at ARBA sanctioned shows throughout his 4-H years. He currently raises angora rabbits, focusing on English Angoras, and long-haired cavies.

