

# RABBIT HEMORRHAGIC DISEASE IN BRITISH COLUMBIA



## OVERVIEW

Rabbit Hemorrhagic Disease (RHD) is an infectious disease affecting European rabbits (*Oryctolagus cuniculus*) and is caused by the rabbit hemorrhagic disease virus (RHDV). There are three major subtypes of this virus, RHDV-1, RHDVa, and RHDV-2, the latter of which has become the dominant type. The RHDV-2 virus strain is extremely contagious between rabbits and is highly lethal, killing between 50-70% of all infected rabbits including juveniles. Infected rabbits may have a fever, a decreased appetite, low oxygen levels in their blood, reduced vocalization, be physically and mentally weak, and have trouble breathing. Rabbits that interact with live or dead infected rabbits can become infected themselves. The virus can also spread to rabbits through other animals such as insects, birds, and mammals and on materials such as water, soil, food, clothing, cages, and bedding.

Beginning in 2018, the RHDV-2 strain emerged as a new threat to rabbits in British Columbia. First diagnosed from feral rabbits on a university campus in Nanaimo, Vancouver Island, the virus spread to other areas on Vancouver Island and parts of the Lower Mainland including Vancouver. Since its discovery, there were 24 cases of RHD, with a case representing one or more RHDV positive rabbits from the same location. Cases were mostly among feral rabbits (n = 16), with fewer in commercial rabbitries (n = 5) and pet rabbits (n = 3). The majority of cases occurred in 2018 (n = 17) and fewer in 2019 (n = 7), and more animals were reported in the spring (March and April). This overlaps with the rabbit breeding season and increased activity and abundance of insects capable of infecting rabbits with the virus. There have not been any confirmed cases in 2020 or 2021. For feral rabbits, this may be because of mass mortality or from acquired immunity in the population. The origin of the RHDV-2 outbreak in BC remains unknown.

To mitigate the spread of RHDV-2 in BC rabbits, a number of solutions are proposed, some of which were previously implemented during the outbreak.

## RECOMMENDATIONS

### Vaccines

Vaccines produced by Filavie in France are capable of preventing rabbit mortality due to RHDV-2. It takes seven days for the vaccine to take full effect and it provides immunity for one year. During the outbreak of 2018-2020, 16,860 vaccines were given to veterinary practices across BC to mitigate the spread of RHDV-2. This vaccine administration should continue.

### Agency Overseeing the Surveillance System

Rabbit Hemorrhagic Disease became an Immediately Notifiable disease in BC in 2018 requiring monitoring measures to be implemented. Going forward, creating a centralized agency responsible for overseeing the RHD surveillance program would ensure timely and consistent coordination of knowledge sharing and decision making among ministries, provincial and federal agencies, shelters and rescue groups, and veterinarians in BC. Implementing passive surveillance in areas not yet exposed to RHDV-2 will also be necessary for early detection. To maximize this surveillance, submissions of suspected infected rabbits by the public should remain free of charge.

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## Community Outreach

A successful solution implemented during the outbreak was the creation and dissemination of communication pieces for pet owners and staff at shelters, rabbit sanctuaries, and commercial rabbitries. These were done in partnership with the SPCA, local rabbit rescue groups, and sectors of the government. These pieces communicated the importance of biosecurity measures in disease prevention and provided comprehensive information sheets about the disease. Community outreach aided in increasing the public's understanding of RHD and led to a substantive contribution of RHDV-2 suspect rabbit submissions from the public, rescue groups, and sanctuaries.

## SUGGESTED READING

1. Abrantes J, Van Der Loo W, Le Pendu J, Esteves PJ. Rabbit hemorrhagic disease (RHD) and rabbit hemorrhagic disease virus (RHDV): a review. *Vet Res.* 2012, 43:12.
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3. Himsworth CG, Leung D, Byers K, Joseph T, Gordon E, Schwantje H, Pritchard J, Ambagala A. 2021. An outbreak of rabbit hemorrhagic disease in British Columbia, Canada *Journal of Wildlife Diseases*. Available at: <https://doi.org/10.7589/JWD-D-21-00061>
4. Spickler AR. CFSPH. 2016. Rabbit Hemorrhagic Disease [online]. Available at: [https://www.cfsph.iastate.edu/Factsheets/pdfs/rabbit\\_hemorrhagic\\_disease.pdf](https://www.cfsph.iastate.edu/Factsheets/pdfs/rabbit_hemorrhagic_disease.pdf) Accessed 3 May 2021

