

Importing vaccines for Rabbit Hemorrhagic Disease 2

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Rabbit Hemorrhagic Disease 2 (RHD2) is spreading throughout the southwestern United States. This deadly viral disease is highly contagious to domestic rabbits, and we now know that it can also infect native species of wild rabbits and hares (the current outbreak is the first documented case of this occurring). RHD2 is both stable and infectious in the environment for long periods of time, potentially surviving more than 3 months without a host. Recent outbreaks have occurred in Washington state and New York, in addition to the cases spreading throughout New Mexico, Arizona, Texas, and Colorado. <https://cms.agr.wa.gov/getmedia/07915d2d-bfd5-4cbb-b443-ab3b42b72722/RHDFactsheet>

While RHD2 may still be considered a “foreign animal disease,” it is likely going to remain in the US at this point unless we aggressively vaccinate at-risk populations. Unfortunately, there are currently no USDA licensed vaccines for this disease, although there are multiple effective and safe RHD2 vaccines available overseas. Many veterinarians would like to import vaccines into the US to help control the outbreak, but are not sure how to navigate the process.

I recently imported vaccines for RHD2 into Washington state to help control an outbreak of RHD2. The importation process took me about 4 months. In hopes of making the process easier for other veterinarians, I have summarized the required steps below. Rabbit owners should be aware that ONLY veterinarians are allowed to import RHD2 vaccines, and they are ONLY allowed to administer these vaccines at the discretion of their state veterinary officials in conjunction with USDA.

Veterinarians who are interested in obtaining RHD2 vaccines should do the following:

1. Contact their state’s USDA and state veterinarian’s offices. Ask if officials would be willing to consider issuing individual veterinarians an import permit for RHD2 vaccines, and if they have any preference for which vaccine to import (Filovac, <http://www.filavie.fr>, or Eravac, <https://www.hipra.com/portal/en/hipra/animalhealth/products/detail/eravac>). Some state officials may consider importing the vaccine themselves for distribution among other veterinarians within the state, but this should not be expected. Veterinarians will probably not be allowed to import any vaccines that include Myxomatosis, because those vaccines are live, recombinant viruses and environmental laws prohibit release without extensive testing and risk assessment.

2. Fill out APHIS form 2005 (online submission only).

The link for CVB permit applications can be accessed

here: <https://ncahappspub.aphis.usda.gov/NCAHPortal/public/>

Once you access, click on CVB and then APHIS 2005 submission form.

Here are step by step instructions for access and filling out the form if

needed: https://www.aphis.usda.gov/animal_health/vet_biologics/publications/27-aphis2005-researchandevaluation.pdf

Contact state officials for any additional questions regarding how to fill out the form.

3. While permit approval is pending, contact the chosen vaccine manufacturer by email and inform them of your interest in importing the vaccine. They should be able to send you a price quote and discuss logistics involved. An international wire transfer will likely be necessary in order to pay for the vaccine/shipment. This can be arranged through your bank. Make sure that the manufacturer has the ability to ship the product in a temperature-controlled package to maintain vaccine efficacy. Do not pay for the vaccines until your importation permit has been approved.

Helpful contacts:

Filavie:

Karina Sorin, Export Sales Assistant Communication; karina.sorin@filavie.com

Filavac VHD K C+V (which protects against both RHD2 and RHD1) comes in single dose vials and multi-dose vials. The multi-dose vial contains 50 doses (practically, do not expect to get a full number of doses due to hub loss; we averaged 45 doses per vial during our vaccine clinics), and must be used within 2 hours of reconstitution. We recommend importing multi-dose vials only if you are putting on vaccine clinics or can guarantee use by breeders/4-H clubs to avoid significant loss of product.

Eravac:

Michelle Woodward, Corporate Group Product Manager Pharma, Rabbits &

Aqua B.U. michelle.woodward@hipra.com

and/or Conrad Sala, Regional Manager

America conrad.sala@hipra.com

Eravac's vaccine protects against RHD2 only and is available in single and multi-dose vials (10 doses or 40 doses).

4. Hire a customs broker to help you negotiate the process of getting the package into the United States. You may be able to find a broker through the international airport receiving the package. Be sure that they have experience with handling biologic/medical products. My customs broker was extremely helpful and worth the cost (\$600-800 in WA state).

Hopefully other veterinarians find this information useful!

Attached below is a Q&A addressing some misconceptions about RHD2 and the Filavac vaccine (authored by myself and originally published on my clinic's Facebook page, <https://m.facebook.com/CBEAMvet/>)

1) Q: Were rabbits actually diagnosed with RHD2 in Washington State? How do vets know that this is the virus strain that has been causing the rabbit deaths? Couldn't the virus have mutated?

A: Yes, RHD2 was confirmed to be the cause of multiple rabbit deaths in Washington State from 2019-2020 in all 3 quarantine areas (San Juan Islands, Whidbey Island, and Clallam County – see detailed information here: aphis.usda.gov/animal_health/downloads/emerging-risk-notice-rabbit.pdf). The disease was identified as RHD2 following rt-PCR testing at the National Veterinary Laboratory of samples taken from deceased rabbits. The state veterinarian's office made an effort to test every deceased animal suspected of dying from RHD2, and all of the rabbit deaths attributed to the disease by the state veterinarian's office had positive rt-PCR tests for RHD2. The same genotype was identified in all of the positive tests (i.e., there are NOT multiple strains or mutated strains present). There may have been other deaths from RHD2 that did not have positive tests for various reasons, and there are probably rabbits that survived the disease and are still in the feral rabbit population. Regardless, the disease is definitely here.

2) Q: What type of vaccine was imported? Is it possible for vaccinated animals to become carriers and infect non-vaccinated animals?

A: The vaccine that Dr. McLaughlin imported is Filavac, which protects against both RHD1 and RHD2. (Follow this link to see the data sheet for the vaccine: https://mri.cts-mrp.eu/human/downloads/FR_V_0315_001_FinalSPC.pdf). Filavac is a killed vaccine, meaning that there is ZERO chance that vaccinated animals can either contract the disease or spread it to others. Vaccinated rabbits will NOT infect non-vaccinated animals, and they do NOT become carriers of the disease. However, rabbits surviving a natural infection with RHD2 are believed to shed the virus for at least 30 days, potentially up to 105 days. <https://cms.agr.wa.gov/getmedia/07915d2d-bfd5-4cbb-b443-ab3b42b72722/RHDFactsheet>

3) Q: How do we know that the imported Filavac vaccine will be effective against this strain of the virus?

A: The Filavac vaccine is specifically developed for use against RHD2. It has been proven safe and effective in protecting rabbits from this disease. Here is a link to a paper looking at protective nature of Filavac vaccine against a wild-type strain of RHD2 in France (the same genotype as the virus identified in WA): <https://polipapers.upv.es/index.php/wrs/article/view/11082/11767>. In this study, all but 1 of the unvaccinated rabbits died following exposure to the disease, while all of the vaccinated rabbits remained healthy.

4) Q: If the vaccine has to be administered annually, what's the point of vaccinating my rabbits when there is no guarantee that additional vaccines will be permitted to be imported next year?

A: The vaccine is licensed overseas to be effective for at LEAST 1 year for 90% of vaccinated animals (some rabbits had immunity for 18 months according to Morin et al, 2015 in Journées de la Recherche Cunicole), and it is possible that protective immunity will persist for longer than that in some individuals. While we don't know for certain if importation of the vaccine will be permitted next year, we DO have a very high level of suspicion that this disease is going to remain in WA state and continue to infect both feral rabbits and domestic rabbits. The best way to try to protect your rabbits from this deadly disease is to get them vaccinated. Even if the vaccinated rabbits contract the disease after their immunity decreases, they might have a lower risk of fatality from it, as their immune system would have a jump start on recognizing the organism.

5) Q: Since so many feral rabbits have already died from RHD2, won't the virus just eventually "die out" in WA state?

A: No. The state veterinarian's office suspects that RHD2 spread here originally from scavenging birds traveling from Canada to the San Juan Islands; there is no way to prevent spread of disease via birds. The virus is very stable in the environment, potentially surviving for more than 3 months without a host. It can also be spread by flies. This virus is unfortunately likely to remain in WA state for a long time. Here is a link to some additional information about RHD: <https://cms.agr.wa.gov/getmedia/07915d2d-bfd5-4cbb-b443-ab3b42b72722/RHDFactsheet>.