

RABBIT VIRAL HEMORRHAGIC DISEASE (RHD) IN THE US:

Rabbit Industry Council Fact Sheet

Rabbit Industry Council, 3789 Oro Bangor Hwy, Oroville, CA 95966 (530)534-7390 8AM-5PM

Current Confirmed Outbreaks: Vanderburgh County, Indiana (6-3-05) Alertness highly recommended.

Current Suspected Outbreaks (as of 6-13-05): None known; Alertness highly recommended.

Status of Current Confirmed Outbreak: Indiana, Vanderburgh Co. (~200 rabbits lost); investigation in KY and IN ongoing

Past Outbreaks (closed cases): Iowa (4/00), Utah/Illinois (8/01), Flushing, NY (12-01)

Viral Origin & Spread:

The most commonly-recognized name for this viral disease is Viral Hemorrhagic Disease (VHD); the USDA originally titled it Rabbit Calicivirus Disease (RCD) but is now leaning toward the internationally-recognized Rabbit Hemorrhagic Disease (RHD). Another international designation is Rabbit Hemorrhagic Disease Virus (RHDV). All of these names represent the same viral disease.

The virus was first recorded in 1984 as RHD--rabbit hemorrhagic disease--when a major epidemic swept through domestic rabbits in mainland China. The virus then rapidly spread through Europe as well as North Africa, killing millions of rabbits, particularly in Italy and Spain, and throughout the epidemic, the virus killed both wild and domestic rabbits. Upon entering the British Isles, particularly the United Kingdom, in 1992, this disease decimated many rabbit studs and deprived other owners of their pets.

In Britain, VHD has become endemic, as the population of wild rabbits have become active carriers of the disease. Regular vaccination routines are highly recommended for all rabbits in the UK and it is no longer a reportable disease.

In late 1988, a single focus of infection in Mexico spread rapidly to 159 rabbitries, one of which was only 400 miles from the Texas/Mexico border. The initial losses were traced to a shipment of frozen rabbit meat from China when a worker repackaging the frozen meat for sale carried the virus, unaffected by freezing, home to his rabbits.

This massive outbreak, so near to the US, was stopped by quarantine and eradication, in 1992. It is not believed at this time that the wild rabbits and hares in the US can become carriers.

In Cuba, VHD is not uncommon and despite eradication efforts, outbreaks still occur, the most recent series beginning in January of 2001 and continuing sporadically through 7 additional outbreaks in October 2001.

Chinese rabbit meat is still allowed relatively unrestricted entry into the US, as are animals and products from countries where RHD/VHD is endemic.

Symptoms and Forms of the Disease:

The disease seems to appear in three ways; the first and most common is called PERACUTE and is simply a dead rabbit in the cage from one visit to the next.

The ACUTE form is represented by a lethargic, depressed, off-feed animal that dies in the space of 1-2 days, shows incoordination and signs of pain before death, and may show clear or bloodstained nasal froth or discharge. A temperature of 105-106 degrees F may be present upon initial examination.

A small number (<5%) may survive up to two weeks with symptoms including jaundice, diarrhea and mucous in the stool, but this is

much less commonly seen.

The third form, called SUBACUTE or transient, is much milder; the rabbit may show some signs of illness, then recover and are immune.

This is the most likely source of an asymptomatic carrier animal, as infective material is shed in urine and feces for at least 30 days, and the animal itself may act as a carrier for far longer. This form is most common in animals under 4 months of age, and less common in older animals.

Prevention and Control:

The nature of the VHD organism is such that it is highly contagious, easily spread, has a varied range of morbidity (number of animals contracting the disease) and extremely high mortality (number of animals dying from the disease).

The virus is quite 'sticky'; it is easily moved about by transportation provided by animate and inanimate objects, such as clothes, shoes, show jackets, carriers, people, dogs, predators, tires, birds, etc. It is also very hardy, surviving both heat and cold handily.

Careful sanitation and disinfection are imperative to halting or limiting the spread of VHD, as is the maintenance of a closed herd. Recommended disinfectants are those with a spectrum of activity covering Hepatitis E and Norwalk virus.

The disinfectants recommended by USDA are 2% One-Stroke Environ (Steris Corp, St. Louis, MO), .5% sodium hypochlorite, or 10% household bleach. Virkon is another brand of disinfectant which has been mentioned.

In *The Biology and Medicine of Rabbits and Rodents* (Harkness & Wagner, 1995), disinfection of the affected premises, "floors, walls, and fomites is accomplished using 10% bleach or 3% formalin followed by 2% sodium hydroxide. The premises should be kept empty of animals for 2 weeks during warm weather or 2 months in colder seasons." Formalin disinfection can be very hazardous; consult an expert or use a different method.

Make sure that the disinfectants are safe to use around rabbits; usually those labeled for use with cats are safe for rabbits, but always check with your veterinarian.

Best Preventative Measures:

Closed herd (complete) -- Keeping your herd totally isolated from all humans and animals other than yourself and perhaps one other caretaker who does not have contact with any other rabbits. Show strings and sale animals, once removed from the herd, remain in a separate facility as below and never rejoin the herd. No incoming bloodstock, no tours, and no equipment that has not been appropriately quarantined, examined, disinfected, or even sterilized.

Pet owners should limit the excursions and exposure of their

rabbits to others; shelters and rescues should enforce similar techniques as those recommended for breeders to minimize chances of contamination.

Isolation and Quarantine Facility-- A completely separated housing facility where show and sale animals are kept is called Isolation; Quarantine is for those animals either entering the herd (1-6 months duration) or those with suspicious conditions which make them undesirable in the main herd. Areas for quarantine of known or suspected conditions should be separated from those of incoming animals.

Husbandry -- Regular maintenance of the barn in a sanitary and disease-free condition; using appropriate techniques to minimize inbreeding in the closed herd; culling and breeding to ensure the highest possible quality of breeding stock.

Sanitation and Disinfection -- Regular cleaning and disinfection of the entire rabbitry and all equipment, and removal and/or reduction of any possible source of infection.

Putting Theory Into Practice:

This all sounds very complex; what does it mean in the real, practical world of the rabbit breeder or owner? Look at it as common sense....

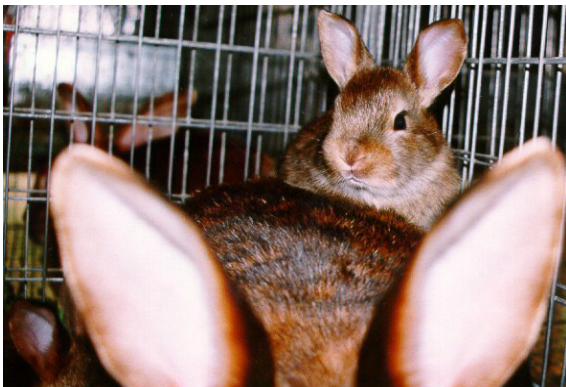
If you don't want your main herd to catch every bug that strolls by, you want to keep the herd away from the bugs as well as the bugs away from the herd.

You also want to make sure that, if the rabbits you take out and about manage to pick up a bug, it doesn't come back to the herd with them, so you keep them separated from the rest.

You take a shower, dress in clean clothes, and go to the main herd first. When you are totally done with chores there, then you take care of isolated clean stock, and finally you care for those with possible health problems. Then you dump the clothes in the wash, jump in the shower again, and off you go.

The larger the herd, the easier this routine becomes. Smaller herds can be dealt with similarly, remembering that the RHD virus is transmitted easily by inanimate objects like clothing, shoes, and equipment. Vehicle tires may (note may) also act as a carrier of the virus if they are run through infected material.

Is a completely separated facility practical? Probably not for most owners, so do the best you can. Set up quarantine areas as far away from your other animals as possible; laundry rooms, bathrooms, garages...an inventive owner can create a reasonably sound area for quarantine of incoming and/or returning animals.



At Shows or Other Barns:

Keep your hands to yourself and your own stock. If there is good reason to touch another breeders' animals, make sure that you use your handy disinfectant thoroughly before touching another animal. Encourage clubs to replace carpeting and solid bottomed coops with rubber matting and wire floors or metal show cooping with trays. Remember that every little bit of effort is a help in controlling any disease.

Any time you or your animals come in contact with animals from other barns, there is a risk of disease, not necessarily VHD, but disease as a general term. Disinfect often and use common sense in bringing in new stock and when cooping your animals outside the home barn.

IF YOU SEE AN ANIMAL THAT APPEARS ILL:

DO NOT TOUCH OR HANDLE!!

Remember that most diseases are spread by contact either directly with the affected animal or with something that comes in contact with the affected animal and then a healthy one. You could be that 'something'. So what should you do?

Contact the show superintendent first at a show; they will go to the owner and request the removal of an apparently ill animal from the showroom. At a private barn, point out the animal's condition to the owner; they may or may not be aware of it. Make VERY sure that you disinfect before returning to your own rabbits.

At a pet shop or shelter/rescue, should you see ill rabbits, contact the management immediately; the ill animals should be withdrawn from sale or adoption areas and afforded veterinary care. If you do not feel this is occurring, contact your local animal control authorities, and they will look into the matter.

What If I Suspect RHD?

Not every rabbit death is attributable to VHD. In fact, in the United States, if you have more than one rabbit and only one dies, the chances are very, very slim that it would be a VHD-related rabbit death. However, since VHD has been officially diagnosed in the United States, it is now a disease that you should consider, especially if you have multiple suspicious rabbit deaths or illnesses.

Although this virus is frighteningly contagious, there is no need to panic; rather, when analyzing a suspect death, first eliminate the most common causes of which you may be certain. Only if the profile fits should RHD/VHD be seriously considered.

Before truly considering that your herd may have the virus, PLEASE read the USDA factsheet, which is available on the Net at <http://www.aphis.usda.gov/vs/ep/RCD/index.html> or from USDA Emergency Services (call 1-800-940-6524).



Then ask yourself the following questions:

Have I lost more rabbits unexpectedly than I did this time last year? Can I explain the deaths reasonably?

Have I been to a rabbit show, shelter, or rescue in the last week? Two weeks? Month? Any visitors to my barn, or did I visit someone else's barn in that time?

Did this rabbit die of any other possible problem? (heatstroke, septicemia, wool block, pregnancy toxicity for example)

Have there been losses in herds from which your animals came, if new, or in herds shown with yours within the last month or so?

Have you followed a closed-herd protocol, isolating returning and new animals, disinfecting all incoming or returning equipment and shoes?

Are you located anywhere near any possible outbreak?

Has anyone who has been to your barn, or to whose barn you have been, lost stock for reason unknown or in the same fashion?

Examine the carcass carefully on a disposable tablecloth with disinfectant close at hand. Is there froth from the nose and/or mouth? Are there signs of bleeding anywhere? Before death, did the rabbit have an abnormally high temperature (over 103F)? Was it listless, depressed, off feed?

Are there ANY OTHER rabbits in your herd showing similar symptoms, however mild?

Have you had a full necropsy properly done by a rabbit-knowledgeable, veterinary pathology laboratory? (Ask your State Department of Agriculture about submission of livestock for necropsy.)

If the answers to most of these questions don't point clearly to RCD/VHD and you'd still like to discuss it with someone, the Rabbit Industry Council is more than happy to talk with you. Sharing a concern is often the key to eliminating or validating it.

The Rabbit Industry Council telephone # is 530-534-7390 from 8am-5pm 7 days a week, and if you feel it is something that cannot wait, on occasion the phone is answered after hours if someone happens to be available. The message machine is ALWAYS on and calls returned as soon as possible--please leave your name, telephone number, and location on the message so we can have the information we need to help you at our fingertips. Our email is RIC@cncnet.com.

Web References:

<http://www.showbunny.com/health>

<http://groups.yahoo.com/group/VHDIInfo/>

<http://www.aphis.usda.gov/vs/ep/RCD/index.html>

<http://www.arba.net/index.htm>

Text References:

Rabbit Production, Cheeke, Lukefahr, McNitt & Patton, 7th Ed.

Veterinary Epidemiology, Matin, Week, & Willeberg

Handbook of Biological Investigation, Ambrose & Ambrose

The Merck Veterinary Manual, 8th ed.

Diseases of Domestic Rabbits, Okerman, 2nd Ed

The Biology and Medicine of Rabbits & Rodents, Harkness & Wagner, 4th Ed.

...and numerous personal communications with Drs. Gregg, Grobner, Shawky, Boghossian, Crom, Lukefahr, Patton, and McNitt, all of whom are due fervent thanks.

This information sheet is brought to you courtesy of

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