



Granite Creeks Project Inc.-

Keeping the community updated with the new rabbit RHDV1 (calicivirus) K5 release with some frequently asked questions.

What is RHDV1 K5?

RHDV1K5 is a variant of rabbit haemorrhagic disease virus (RHDV1) that causes a fatal haemorrhagic disease in the European rabbit (*Oryctolagus cuniculus*). It is specific to the European rabbit, and once a rabbit shows symptoms, death is rapid. There is no treatment or cure for rabbit haemorrhagic disease (RHD); however a vaccine for domestic and production rabbits is available.

Where will RHDV1 K5 work best?

We expect RHDV1 K5 to work in all areas where rabbits are found. However, we expect to see the greatest benefits of RHDV1 K5 in the cool-wet regions of the country. An endemic benign virus is found in the cool-wet regions and temporarily protects rabbits from the Czech strain of RHDV1 (released in 1996). RHDV1 K5 can overcome this protection, so it is likely that in these cool-wet regions we will see an improvement in RHDV biocontrol.

How is RHDV1 K5 different to the current variant of RHDV1?

Both variants cause the same disease; however the RHDV1 K5 variant is better adapted to overcome the protective effects of the benign calicivirus detected several years ago in Australian rabbits.

These benign viruses can temporarily protect rabbits from infection with our current variant of RHDV. These benign viruses are predominantly found in the cool-wet regions of Australia, usually areas with higher production and biodiversity values – where typically RHDV has not worked as well as it has in more arid environments. The use of the RHDV1 K5 variant should improve the effectiveness of RHDV in these cool-wet regions and continue to suppress rabbit numbers throughout their distribution, particularly in conjunction with other forms of control.

How do rabbits with RHD die?

Rabbits that are infected with RHDV first develop symptoms anywhere from 24-72 hours after infection and usually succumb within 6-36 hours after the first symptoms appear. Many infected animals show no signs of disease and die suddenly. Some animals may exhibit lethargy or excitement before death. Animals die from the rapid onset of multiple organ

failure. Given the short disease time and the sudden death from rapid organ failure, RHDV continues to be one of the most humane control methods for rabbits.

If it takes 48 hours to kill the rabbit, doesn't the rabbit suffer during this time?

RHDV is one of the more humane methods of controlling wild rabbits. Basically the rabbits end up with 'cold-like' symptoms, become lethargic and then die quickly. Post-infection, there is a rise in body temperature lasting up to 24 hours, followed, in 70–90% of cases, by death up to 48 hours after the onset of a fever (see [Humaneness assessment: bait delivery of RHDV](#)). The overall welfare impact prior to death has been assessed as low using the [relative humaneness model](#) developed under the Australian Animal Welfare Strategy.

What type of knock-down will RHDV1 K5 achieve?

While exact knockdown figures are unknown, we do not expect to see population reductions like those seen with the release of the Czech strain of RHDV1 (calicivirus) in 1996. We are not releasing into a naïve population like that in 1996. Knockdowns are expected to be conservative, depending on location and susceptibility of the rabbit population to RHDV1 K5.

How does RHDV spread naturally?

RHDV is spread by insect vectors, such as bushflies and blowflies. Direct contact between a rabbit and a rabbit carcass with RHDV is also an avenue of spread. Animals that predate on rabbit carcasses such as foxes, dogs and cats may also excrete the virus in their faeces.

Does it affect people or other animals (pet, native wildlife and livestock)?

In Australia, no variant of RHDV1 has ever been found to cause infection in any other animal except the European rabbit (*Oryctolagus cuniculus*). Even predatory animals that eat rabbits that have died from RHDV1 do not develop an infection.

There have been a number of examinations by the CSIROs Australian Animal Health Laboratories, of the impact of RHDV1 on animals other than rabbits.

This has included a large array of production animals, native wildlife and even a selection of feral animals. These studies showed that in all cases no animals other than European rabbits develop disease from the virus. This included animals directly exposed to the virus or those that have consumed rabbit carcasses.

The stringent approval process performed by the Australian Pesticides and Veterinary Medicine Authority considered all of the information available on potential impacts to native animals before the approval for RHDV1 K5 to be used to control rabbits was given. The protection of native species is the main goal in reducing rabbit populations and their safety has been of utmost importance in the process of developing the tools to minimise the impacts of rabbits.

The release of RHDV1 K5 will be using a carrot bait. It has been found that rabbits are naturally attracted to carrots and generally prefer it over other bait types. While other animals will eat carrot, they cannot become diseased from RHDV1 K5 and the manner in which the bait is put out also reduces the risk of other animals taking the bait.

Prior to RHDV1 K5 being released, carrots will be put out in the locations where rabbits are on the properties. This will allow us to know how much carrot is required to allow only the rabbits to consume it. Carrots will only be put out late in the afternoon to reduce the risk of diurnal animals access it and any left-over carrots will be removed the following morning. RHDV1 K5 is a virus and does not have an afterlife or dormancy like a poison does. The virus can persist in rabbit carcasses for a few weeks but does not persist for as long in the environment before it degrades completely.

Will native animals or livestock become threatened if rabbit numbers are low?

To mitigate any short term impact of feral predators on native animals or livestock in conservation sensitive or high risk areas, it is recommended that an integrated pest management approach be undertaken, with plans in place for feral predator control concurrent with rabbit control

There is no direct evidence to support that prey-switching by feral or native predators (foxes, feral cats, quolls as examples) is a major conservation risk to native animals in Australia.

In fact, scientific evidence shows that reduced rabbit abundance levels can lead to reduce feral cat and fox abundance and in turn reduce predation of native fauna and recovery of threatened prey populations.

More specifically, recent research in South Australia, analysing more than 45 years' worth of data, has found that three threatened mammals in South Australia have staged dramatic recoveries in the past 20 years, predominately due to the release of the Czech strain of RHDV1 in 1996. This reduced rabbit numbers, with associated reductions in their main predators, cats and foxes, leading to native mammals having less competition for food and less predation pressure.

I have a pet rabbit, is there a vaccine available?

Yes. The current vaccine has been shown to be effective against RHDV1 K5. [Read more here at http://www.pestsmart.org.au/rhdv-k5-what-about-my-pet-rabbit/](http://www.pestsmart.org.au/rhdv-k5-what-about-my-pet-rabbit/)

What are the problems associated with rabbits?

Rabbits are estimated to cost over \$200 million in lost agricultural production every year. Rabbits compete with grazing stock for food, contribute to soil erosion and destabilise the structural integrity of the land potentially leading to injury of livestock. Rabbits are also linked to the decline of native animals and plant species throughout their range. It is suggested that rabbits impact on 304 threatened species in Australia.

Rabbits are a regional issue, why should I care?

Rabbits are not only a regional issue. Rabbits do occur in urban environments, such as sports grounds, within parklands, along railway tracks and in urban remnant bushland areas.

What is the cost of rabbits to the environment?

Currently there is no dollar value on the impact of rabbits on the environment; however, their impact is known to be significant. Rabbits continue to compete with native wildlife for food, contribute to soil erosion and subsequently desertification of the Australian environment, severely limit the regenerative ability of many plants and plant communities including

endangered species and in some cases, can support populations of introduced predators that also prey on native wildlife.

How do I get involved in a release as a release site?

The call for expressions of interest to be involved as a release site are now closed and more than 600 sites around Australia have been selected to release the virus.

Is there any advantage in community assisting the spread of RHDV1 K5?

Yes. Community assistance with the spread of RHDV1 K5 will help ensure that the virus reaches as many rabbit populations as possible and that as great a knockdown as possible is achieved. Community can then take advantage of this knockdown by following up with conventional control tools to achieve sustainable long-term control.

For more information please go to <http://www.pestsmart.org.au/boosting-rabbit-biocontrol-rhdv-k5-national-release/> or contact Neil Devanny on 0457526566