

Rabbit Calicivirus Disease (RCD)

History

Rabbit Calicivirus Disease (RCD) is a viral disease which affects only European rabbits. The virus probably originated from a less virulent form present in rabbit populations for many years. It was first reported in China in 1984 and soon after in other countries in Asia and Europe and in Mexico.

These reports alerted scientists to a potentially new biological control for wild rabbits in Australia and New Zealand. The virus was taken into quarantine at the CSIRO Australian Animal Health Laboratory in Geelong for comprehensive testing over three years from June 1991.

During field trials in 1995 it escaped from Wardang Island, South Australia. The virus swept across the Flinders Ranges through the arid zone and killed large numbers of rabbits.

Effectiveness

The virus has since spread throughout most of Australia, mainly by natural spread. To date its impact has generally been greatest in the arid and semi-arid zone. Initial results from wetter areas have been lower.



It is predicted by some people that RCD and rabbits will evolve together to a point where the virus becomes less effective. This could occur most rapidly in the arid zone of Australia where the death rate is higher now, prompting an increase in natural selection for resistant rabbits. However, whether this resistance will emerge over a 10-year period or a 100-year period is unknown.

The timing of RCD spread is important. If an outbreak occurs in early spring, it is more likely to immunise young rabbits rather than killing them, making the disease less effective. When outbreaks occur in autumn or winter when young rabbits have grown into full adults, the effectiveness of RCD is far greater.

How does it work?

RCD infects many organs including the lungs, gut and liver of the rabbit. The latter causes acute hepatitis that can kill the rabbit within 48 hours by precipitating a rapid and widespread blood clotting mechanism.

Whether RCD is effective depends on age. Rabbits less than three weeks old are not affected and only 60% of rabbits between three to six weeks old are affected. Particularly if young animals are infected and survive, they become immunised against infection when they are older. Female rabbits that are infected by the virus and survive will pass antibodies via their milk to their young, giving them protection for up to 12 weeks after birth.

Combining control methods

It appears that a virus similar to RCD was present in Australia before RCD itself was introduced. Infection with this RCD-like virus may give rabbits some resistance to RCD, particularly in cooler and wetter areas.

By combining traditional control methods such as baiting and the ripping of warrens with RCD releases, its effectiveness can be increased. The spread of RCD is slower when there are fewer rabbits. If rabbit numbers are kept low, rabbits will be older before becoming infected with RCD and therefore more susceptible to its effects.

Frequently Asked Questions

Does RCD affect humans?

This was considered in great detail by the government and health authorities from the outset. A major study was conducted in which blood from 259 people exposed to RCD-infected rabbits was tested. There was no evidence of infection. International laboratories in many different countries confirm that human infection with rabbit calicivirus is not known to occur and that no ill effects have been seen, even in people working very closely with the virus.

The virus has been present in more than 40 countries round the world, including most of Europe, since the 1980s, and there have been no scientific or medical reports of human infection from any of these countries.

Are other animals affected by RCD?

There is no scientific evidence, here or overseas, that RCD infects other animals. Australia has tested for RCD virus in at least 33 representative animal species, domesticated and wild, native and feral. They were all given large doses of the virus and there was no sign of infection. Worldwide 43 different species have been tested and the virus did not grow in any of them.

Is it safe to eat rabbits infected with RCD?

One should never eat a sick animal, as it is difficult to identify what it has suffered from, quite apart from considerations of taste. Nevertheless, if an animal infected with RCD was killed and eaten prior to there being any signs of sickness, the virus would have no effect on humans.

Rabbits that die from RCD can look fairly normal externally, but when you cut the dead rabbit open, the lungs and liver may provide some clues. Livers of RCD rabbits are often pale and mottled. Lungs may look abnormal with large numbers of small red spots or blotches. The spleen is often enlarged and kidneys are often almost black.

It should be noted that some rabbits die very quickly from the disease and may show very few visible changes to the internal organs.

Is a vaccine available for domestic rabbits?

Yes. Effective vaccines to protect rabbits from RCD have been developed in Europe and are applied through local veterinary clinics. The vaccine released in Australia is known commercially as Cylap HVD and is made in Spain by Cyanamid. Pet rabbit owners should consult their local vet about vaccination.

The RCD vaccine is safe to use on pet and farmed rabbits. As with any vaccine for animals or humans, only vaccinate your rabbit when it is healthy. Veterinarians can advise on other issues to be aware of when having your pet vaccinated.

Contacts

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