



PESTSMART

Rabbit biocontrol in Australia: key facts

A brief history of rabbits in Australia

- 1788 Domesticated rabbits arrive with convicts on the first fleet.
- 1827 Feral rabbit population first reported in Tasmania.
- 1859 Twenty-four rabbits released for hunting purposes at Thomas Austin's Victorian property Barwon Park. Escaped enclosures after a fire.
- 1886 Feral rabbit populations reach the New South Wales and Queensland borders.
- 1900s The world's largest rabbit proof fence (1700km) erected to keep rabbits out of Western Australia.
- 1910s Rabbits have spread across most of Australia.
- 1920s It is estimated that there are up to 10 billion feral rabbits in Australia.
- 1930s Australian government pushes bounty hunting and poisoning to control rabbits, to no avail.
- 1950s Myxoma virus (Myxomatosis) is released to control the feral rabbit population.
- 1970s Feral rabbit numbers increase as populations develop resistance to Myxomatosis.
- 1996 Rabbit Haemorrhagic Disease Virus (RHDV1) released to further control the feral rabbit population.
- 2007 Natural, benign strain of calicivirus (RCV-A1) found in Australia which can result in partial immunity to RHDV.
- 2016 Researchers working on new tools to manage rabbits in Australia.
- 2017 Imported Korean strain of RHDV1 (K5) set to be released.



Impacts of rabbits in Australia

- Australia's most costly pest animal, rabbits cause \$206 million in losses each year to the agricultural industry¹.
- They compete with grazing stock for food, contribute to soil erosion, damage crops and destabilise the land, potentially leading to injury of livestock.
- Rabbits threaten the survival of more than 300 Australian native flora and fauna species². This includes 24 critically endangered species such as the pygmy possum, orange-bellied parrot and ballerina orchid.
- Less than one rabbit per football field sized paddock is enough to stop the growth of some native species and negatively affect biodiversity.

Benefits of rabbit biocontrol in Australia

- Significant regeneration of native vegetation and population increases of native animal species.
- Cumulative benefit of rabbit biocontrol to Australia's pastoral industries at ~\$70 billion (over 60 years).



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Rabbit biocontrol in Australia

Myxoma virus: Trialled by the CSIRO in the late 1930's and 40s. It was released into the feral rabbit population in the 1950s and spread predominately by fleas and mosquitoes. Within months it knocked over 90% of some rabbit populations but became less effective over time due to developing genetic resistance in the rabbits. Today it affects an estimated 40-50% of the rabbit population.

RHDV: Trialled by the CSIRO in the early 1990s and released into the feral rabbit population in 1996. It initially knocked down 90% of the feral rabbit population but was less effective in cooler climates. Immunity and again resistance have become an issue.

RHDV2: Found in Australia in May 2015, RHDV2 is a variant of RHDV that was not released but has been detected in Europe and now Australia. If RHDV2 is highly virulent it could potentially benefit rabbit biocontrol efforts within Australia³.



Image: Chris Lane

About RHDV K5⁵

- K5 is not a new virus. It is a Korean strain of the existing virus already widespread in Australia.
- K5 should work better in the cool-wet regions of Australia where the current strain has not been as successful.
- K5 was selected because it can better overcome the protective effects of the benign calicivirus (RCA-A1) which naturally occurs in the feral rabbit population.
- K5, like other RHDV1 variants is not infectious to any other species except the European rabbit.
- K5 will not result in a 90% reduction of wild rabbit populations, rather it is expected to 'boost' the effects of the existing variant and help slow down the increase in rabbit numbers.
- K5 is not the silver bullet for rabbit eradication in Australia and an integrated approach is required.
- A vaccine to protect domestic rabbits against RHDV1 is available. Talk to a local vet for information.

References:

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5. Invasive Animals Cooperative Research Centre (2015). *RHDV K5: Frequently asked Questions*. Invasive Animals Cooperative Research Centre, Canberra.