# Rabbit Haemorrhagic Disease outbreak update report

14 December 2022*

agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
**REPUBLIC OF SOUTH AFRICA**

Report compiled by:
Directorate: Animal Health

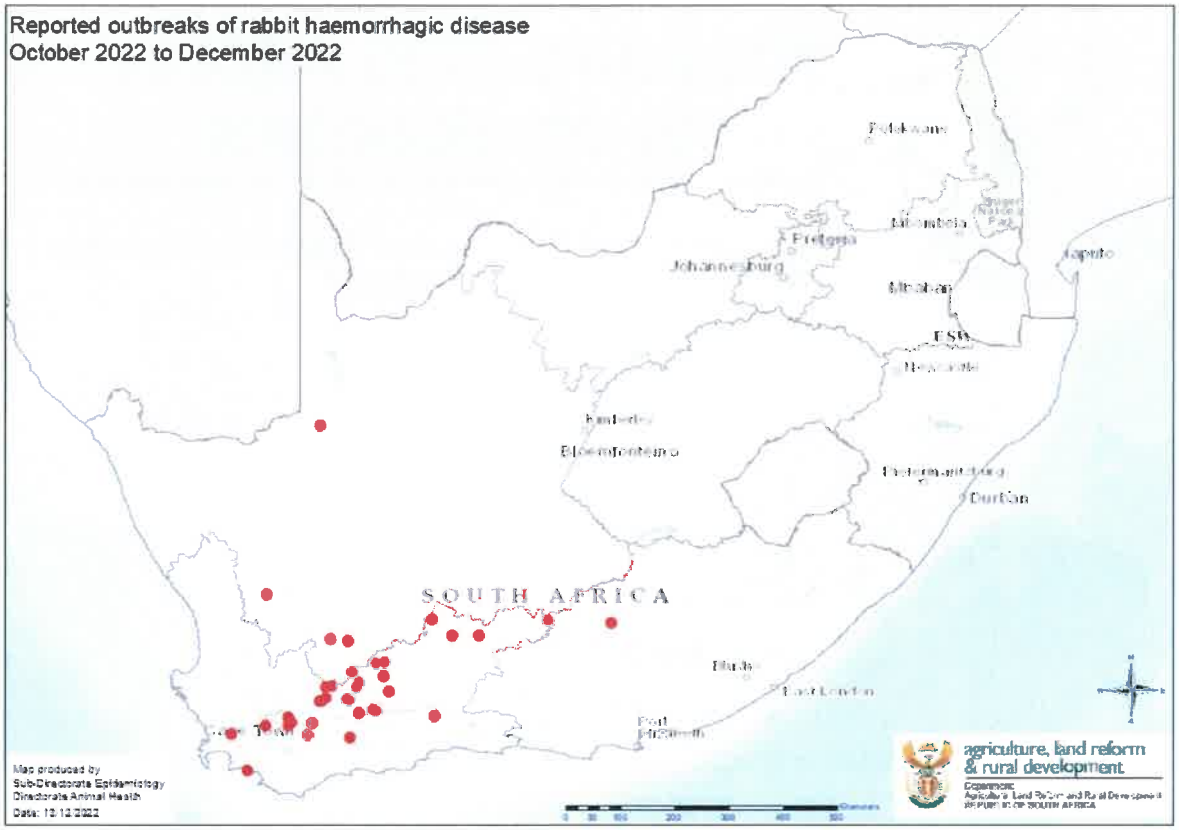
* This report includes all information as available by close of business on the indicated date. All the updates contained in this report may not currently reflect on the WOAH WAHIS system due to technical difficulties with the WOAH reporting system.

## 1. Introduction and Summary

In November 2022, an outbreak of Rabbit Haemorrhagic Disease (RHD) was confirmed in the Western Cape and in Northern Cape Provinces. Reports of die-offs of wild rabbits and hares were received from the Karoo areas in the Western and Northern Cape Provinces. Post-mortems were performed and samples collected, and the cause was confirmed as Rabbit Haemorrhagic disease virus (RHDV-2). Outbreaks were also reported in commercial and pet rabbits in Eastern Cape Province.

**Map 1: Reported outbreaks of RHD 2022**

Note: Dots on the maps that indicate locations in close proximity might appear as single dots




RHD is caused by a virus of the *Caliciviridae* family and of the Genus *Lagovirus*. There are three genetic groups, namely RHDV, RHDVa and RHDV2. RHD occurs in wild and domestic European rabbits *(Oryctolagus cuniculus)* and does not infect other animals or people. The disease groups can all have very high illness rates (almost 100%) and varying death rates (5 – 70%).

RHD occurrence is of great concern as South Africa's indigenous Red Rock Rabbit, endangered Riverine Rabbit and Hare species are susceptible to this disease and occur in the currently affected areas of the Karoo.

## 2. Identifying Signs of Disease

Rabbits of all ages can be infected. Clinical signs are grouped depending on the course of the disease. Any rabbit or hare presenting with suspect clinical signs must be isolated immediately to prevent spread of the disease. The public is advised to contact the local State Veterinarian should they observe any of these clinical signs.

- Acute infection:
  - Fever (death usually occurs 12 – 36 hours after onset of fever).
  - Anorexia (inappetence / poor appetite / reluctant to eat).
  - Lethargy (laziness) and dullness
  - Respiratory signs (difficulty breathing, bloodstained frothy nasal discharge)
  - Neurological signs (paddling, convulsions (fits) or paralysis)
  - Prostration (lying flat, extreme physical weakness)
  - Mucous membrane congestion (reddish discolouration of eyes and inside mouth)
  - Rapid death.
- Subacute infection:
  - Signs like acute infection, but milder.
- Chronic, persistent infections are usually asymptomatic, but the following signs may be seen:
  - Severe and generalised jaundice (yellowish appearance of mucous membranes in eyes and mouth)
  - Loss of weight and lethargy.
  - These animals often die 1–2 weeks later

## 3. Control Measures

### 3.1 Biosecurity

Rabbit owners are advised to practice good biosecurity, ensure that their rabbits are securely confined and must prevent any contact with other rabbits or hares. Section 11 of the Animal Diseases Act (Act No 35 of 1984) states that it is the responsibility of the owner of animals and the owner and manager of the land on which animals are kept, to prevent disease from entering the animal population and if already present, to prevent the further spread thereof.

The following biosecurity practices are recommended:

- Prevent entry of pet, feral, or wild rabbits into rabbitries or homes where rabbits are kept.
- All visitors to rabbitries or pet rabbits must wear protective clothing (including coveralls, shoe covers, hair covering, and gloves), which must be cleaned and disinfected after use. Hands must be washed with warm soapy water before entering the rabbit area, after removing protective clothing and before leaving the rabbit area.
- New introductions into rabbit collections must only be from known and trusted sources, and from sources that do not mix rabbits from multiple origins. Isolate and quarantine new rabbits for 14 days and monitor them for signs of disease.
- All equipment and cages moved on or off premises must be disinfected before they are returned to the rabbitry.
- Recommend disinfectants include:
    - 10% Sodium hydroxide, 1-2% formalin, citric acid, 1% solution potassium peroxymonosulfate and 20% household bleach. Contact time for proper disinfection is 5 minutes, but 10 minutes for potassium peroxymonosulfate. Rinse surfaces with fresh water following treatment with bleach solutions.
    - Wear nitrile, silicon, or rubber gloves, protective clothing, and eye protection when mixing and handling bleach or bleach solution and work in a well-ventilated area.
    - The RHD virus is resistant to ethers and chloroforms.

- Owners of rabbits, in consultation with a private veterinarian, are advised to review their biosecurity practices for identification of potential threats and closure of possible biosecurity gaps.
- Rabbit breeders or growers who purchase live rabbits, should review their biosecurity practices and take steps to strengthen protective measures, given the higher risk profile since RHD has been identified in South Africa.
- Fodder or food (lucerne, hay or bedding) should not be sourced from areas where RHD outbreaks have occurred recently.

## 3.2 Vaccination

South Africa has been historically considered as RHD free and vaccination against the disease has not been allowed in the country. Control of RHD in rabbitries will rely mainly on vaccination, but the vaccine is not available in South Africa yet. Vaccination will be considered based on the specifications made by the Directorate: Animal Health of the DALRRD.

There are inactivated vaccines available internationally which produces good immunity and is considered effective in protecting rabbits that have not previously been exposed. The DALRRD is actively working with the relevant bodies (SAHPRA and the Registrar of Act 36 of 1947) to make provision for the legal use of such vaccines in South Africa. Only legally imported, registered vaccines approved by SAHPRA/Act 36 may be used. For more information on the relevant import permits, interested parties should be advised to contact SAHPRA (https://www.sahpra.org.za/key-contacts/) and Agricultural Inputs Control (Act 36 - https://www.dalrrd.gov.za/Branches/Agricultural-Production-Health-Food-Safety/Agriculture-Inputs-Control).

## 4. Diagnostic tests and epidemiology

For all reported cases, confirmation of disease was done using a Real Time Polymerase Chain Reaction (RT-PCR) diagnostic tests at the ARC Onderstepoort Veterinary Research Molecular Biology (Viral PCR) laboratory. This is the only laboratory that has been approved by the Director: Animal Health for RHD testing to date. The virus strain responsible for the current outbreaks has been confirmed to be RHDV2. The source of entry of the virus into the country is still being investigated. However, due to the virus not being in South Africa previously, it is most likely that illegal movement of rabbits or hares into the country introduced the virus into South Africa.

Should a rabbit or hare show suspicious clinical signs of RHD, the sample of choice is the liver that should be submitted fresh, on ice, for PCR testing to confirm if RHD was the cause of disease/death. Samples of blood, spleen and excretions (urine or faeces) can also be submitted for PCR testing. Do not send whole dead rabbits to the ARC Laboratory.

Swab samples must be in PBS transport medium. Samples can be sent to the ARC-OVR Molecular Biology (Viral PCR) laboratory at the cost of the owner for RHD PCR testing. Should post-mortem procedures be required to indicate the possible causes of death, the whole animal should be submitted to a SAVC registered veterinarian or veterinary pathology laboratories that are approved by the SAVC.

In the event of nature conservation groups submitting samples from wild populations, with the support of the local state veterinarian official, payment for the diagnostics conducted at the ARC Laboratory can be considered by the Director: Animal Health. The sampling list and copies of the sample submission forms are to be sent to Epidemiology@Dalrrd.gov.za. All results must be notified to the local state veterinarian, whose contact details must be correctly added on the submission form.

Serological test methods are currently not available in South Africa and they may be of limited value going forward as they cannot distinguish between infected and vaccinated animals.

Based on epidemiological investigations, the main routes of virus transmission are:

- Direct contact or contact with infected rabbits' excretions (oral, nasal and conjunctival pathways) or blood.
- Indirect contact with infected carcasses, food, water, and any contaminated materials such as fodder (e.g. lucerne, hay or bedding). The virus can survive in infected material for up to 3 months. People can spread the virus indirectly by carrying it on their clothing and shoes.
- Possible transmission by passive vectors such as haematophagous insects (biting flies, fleas and mosquitos), birds, rodents and wild animals, as well as through predator and scavenger faeces.
- The infective period of an infected animal is 60 days (according to WOAH Terrestrial Animal Health Code), i.e. the longest period during which an affected animal can be a source of infection, usually in chronically infected cases.

## 5. Trade implications

As a result of not being known to occur in South Africa, RHD is automatically regarded as a controlled animal disease in terms of the Animal Diseases Act, 1984 (Act No 35 of 1984). Imports of rabbits, hares or products derived from these animals have already been subject to very strict import conditions and this will continue to assist with prevention of further introductions of RHDV or other rabbit diseases not known to occur in South Africa.

## 6. Reporting of suspect cases

Biosecurity measures are difficult to implement in wild populations. The occurrence of RHD in the Karoo is therefore of great concern, as South Africa's indigenous Red Rock rabbit, endangered Riverine rabbit and hare species are highly susceptible to this disease. Carcasses of RHD-infected rabbits may be a major source for viral spreading, since the virus seems to be highly resistant and stable, even when exposed to harsh environmental conditions. Members of the public are encouraged to report any dead or dying rabbits or hares to the nearest State Veterinarian for investigation.

Left side column: Branches > Agricultural Production, Health & Food Safety > Animal Health > contacts > provincial veterinary services

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A guidance document for RHD has been distributed to all registered veterinary officials as well as the relevant provincial departments. This document is a detailed guidance of disease control for veterinary officials.

**Director Animal Health**

Date: 14/12/2022