

Rift Valley fever virus Fact Sheet

1. Disease overview

Rift Valley Fever (Rift Valley fever) is an **infectious, non-contagious vector-borne** viral disease caused by the **Rift Valley fever virus (RVFV)**. It affects domestic ruminants, particularly sheep, goats, and cattle. It is transmitted by mosquitoes and causes significant economic losses due to abortion storms and high mortality in young animals.

Rift Valley fever is a **WOAH-notifiable disease**.

Rift Valley fever is listed in the **European Animal Health Law** under categories **A, D, E**.

2. Agent

Rift valley fever virus is an **enveloped, single stranded RNA virus** that belongs to Phlebovirus genus within the *Phenuiviridae* family. Its genome is segmented into three parts: the large (L), medium (M), and small (S) segments. The **L segment** encodes the RNA-dependent RNA polymerase, which is essential for viral replication. The **M segment** encodes two surface glycoproteins, Gn and Gc, which are involved in host cell attachment and membrane fusion. The **S segment** uses an ambisense coding strategy to produce both the nucleocapsid (N) protein and a non-structural protein (NSs). The N protein encapsidates the viral RNA, forming ribonucleoprotein complexes that are critical for genome stability and replication.

3. Geographical Distribution

According to WAHIS data, the agent was not reported in the EU in the last 2 years.

For more detailed information and dynamic maps, visit the *Geographical Distribution* section of the online **disease profile** (accessible via the button in the top right corner).

4. Animal hosts

4.1. Primary animal species affected

Sheep and goats are considered the most susceptible species, with young animals being particularly vulnerable. Cattle and camels can also be affected, often showing milder clinical signs but suffering from abortions and neonatal mortality. Occasionally, Rift Valley fever affects other species, such as buffaloes, wild ruminants (e.g., antelopes, gazelles) and camelids. However, these species typically show severe disease only during outbreaks involving highly virulent viral strains.

Experimental studies show that suidae and equids can be infected, but they typically exhibit mild or no clinical signs, and they are unlikely to play a significant role in the transmission of the virus.

4.2. Clinical Signs

Clinical signals and severity can vary according to species, age and whether the animal is pregnant. Sheep are the most affected species with clinical signs duration of 4 days, followed by goats and cattle (3.5, and 1.5 days, respectively).

Young lambs and kids are considered to be the most susceptible individuals. Adult sheep and calves are highly susceptible as well. In general, RVFV has tropism for several cells in different organs and most commonly observed lesion to a multifocal, randomly distributed necrosis leading to a wide range of unspecific symptoms.

In **sheep** and **goats**, Rift Valley fever in susceptible animals can cause several non-specific clinical signs, including fever, lethargy, anorexia, nasal discharge, and diarrhea. Young animals are particularly vulnerable and may die suddenly. Pregnant animals often experience *abortion storms*, and newborns may be stillborn or die within a few days. In severe cases, hepatic necrosis can lead to jaundice and sudden death.

In **cattle** and **camels**, most RVFV-infected individuals show mild or subclinical signs. Fever, decreased milk production, and anorexia may be observed. Pregnant animals may also abort, and neonatal mortality can occur. In rare cases, severe hepatic disease can develop, leading to jaundice, weakness, and death.

In **wild ruminants and other susceptible species**, Rift Valley fever is usually subclinical but can cause reproductive losses and occasional mortality during outbreaks involving highly virulent strains.

Other species can be infected but are resistant and do not show any clinical signs.

4.2.1. Incubation Period

The incubation period of rift valley fever, defined as the interval between infection and the onset of clinical signs, mostly varies according to the species. The following table presents data on the duration of the infectious period in experimentally infected animals from studies deemed eligible according to [EFSA's systematic literature review protocol](#):

Host	Median (days)	Minimum (days)	Maximum (days)	N of studies
Buffalo	16	16	16	2
Cattle	2	1	3	5
Goat	1.5	1	2	2
Sheep	2	1	4	19

4.2.2. Morbidity and mortality

Morbidity rates are generally high in susceptible livestock populations, often approaching 90–100%. Case fatality varies by species, age, and breed, typically ranging from 3% to 20% in adult animals but may reach as high as 100% in young lambs, kids, or calves infected with highly virulent strains. Neonatal mortality is particularly severe, with young animals frequently succumbing within a few days of infection. Pregnant females are prone to abortion storms, with abortion rates that can exceed 90% in naïve populations.

4.2.3. Zoonotic Potential

Rift Valley fever is a **zoonotic disease**

5. Transmission

Rift Valley fever is transmitted to vertebrate hosts through the bite of certain species of *Aedes* and *Culex* spp. Vertical transmission in mosquitoes and direct contact with infected tissues or fluids can also occur.

→ Vectors have been reported in the EU in the past 2 years.

→ For more information on vector distribution, visit the *Vector* section in the online disease profile.

6. Diagnostic tests

WOAH-recommended tests for the **detection of the agent**: Virus isolation, RT-PCR, ELISA for antigen detection, and histopathology with immunohistochemistry.

WOAH-recommended tests for the **detection of immune response**: ELISA, Virus neutralisation test (VNT) and Plaque reduction neutralisation test (PRNT).

The following table presents data on the sensitivity and specificity of several diagnostic tests from studies deemed eligible according to [EFSA's systematic literature review protocol](#); reported values correspond to the median sensitivity and specificity when multiple studies investigated the same test, and are only included when explicitly stated in the publications:

Target	Test	Species	Specificity	N studies	Sensitivity	N studies
Antigen	B-ELISA	Cattle	99.0%	3	92.9%	3
Antigen	I-ELISA	Buffalo	98.3%	1	94.4%	1
Antigen	I-ELISA	Cattle	98.1%	3	92.1%	3
Antigen	I-ELISA	Goat	99.2%	1	99.2%	1
Antigen	I-ELISA	Sheep	99.2%	1	98.9%	1
Nucleic acid	RT-PCR	Cattle	71.7%	1	97.4%	1
Virus	Histopathology	Cattle	92.3%	1	94.6%	1
Virus	Immunohistochemistry	Cattle	99.4%	1	97.6%	1
Virus	PRNT	Cattle	100.0%	2	100.0%	2
Virus	PRNT	Sheep	100.0%	2	100.0%	2
Antibody	C-ELISA	Cattle	100%	14	95.1%	14
Antibody	C-ELISA	Goat	99.7%	1	99.6%	1
Antibody	C-ELISA	Sheep	95.6%	2	97.6%	2
Antibody	Haemagglutination inhibition test (HIT)	Buffalo, Goat, Sheep, Cattle	100%	1	100%	1

Antibody	I-ELISA	Cattle	96.6%	10	77.0%	10
Antibody	I-ELISA	Goat	98.7%	6	99.7%	6
Antibody	I-ELISA	Sheep	98.8%	4	99.3%	4
Antibody	Sandwich ELISA	Cattle	100%	3	100%	1
Antibody	Sandwich ELISA	Goat	99.8%	4	98.2%	2
Antibody	Sandwich ELISA	Sheep	80%	17	100%	15
Antibody	VNT	Buffalo	100%	1	100%	1
Antibody	VNT	Cattle	100%	6	97.7%	6
Antibody	VNT	Goat	100%	4	100%	4
Antibody	VNT	Sheep	100%	3	100%	3

7. Prevention and control

7.1. Vaccination

Currently, there are no vaccines for RVFV authorized for veterinary use within the European Union (EU).

7.2. Treatment

There is currently **no specific treatment** for Rift Valley fever infection. In accordance with the Animal Health Law (AHL) in the EU, susceptible species kept at in the affected holdings shall be culled to prevent further spread of the pathogen.