Fact Sheet: Bovine Kobuvirus

P2f Infectious Diseases

August 2025

Bovine Kobuvirus (BKV)

Bovine Kobuvirus (BKV) mainly affects calves, especially newborns and 1–2 months old. It is detected in both healthy and scouring cattle worldwide.

There is no vaccine or antiviral. Prevention relies on biosecurity and hygiene. Treatment involves supportive care for scours (fluids, electrolytes).

Clinical signs

The main reported symptom of BKV infection is diarrhoea. Its role remains unclear due to frequent co-infections and detection in healthy animals. One study linked BKV to necrotizing enteritis in calves that tested negative for other pathogens.

Transmission

Transmission is believed to occur via the faecal-oral route which is typical of gut enteric viruses. The high prevalence suggests widespread exposure in cattle populations.

Control and prevention

There is no specific antiviral treatment for BKV. Supportive care for diarrhoea (fluids, electrolytes) is standard.

No vaccine is available for BKV. Prevention relies on strict biosecurity and good hygiene practices to minimize exposure.

Bovine Kobuvirus (BKV)

Bovine Kobuvirus (BKV) is a non-enveloped, single-stranded, positive-sense RNA virus in the Picornaviridae family, Kobuvirus genus (species Aichivirus B). The name "kobu" is derived from the Japanese word for "bump," reflecting its characteristic appearance under electron microscopy.

Key points

- Diarrhoea is the main reported symptom, but BKV is often found in healthy animals.
- Its role in disease is unclear as BKD is frequently co-detected with other gut pathogens.
- No vaccine is available. Prevention relies on biosecurity and hygiene.
- It is found globally in cattle and small ruminants, suggesting widespread exposure.

Microbial surveillance in dairy cattle

This series of fact sheets has been prepared for cattle vets. It covers a range of microbes that were identified by Dairy UP team in samples collected from cattle on NSW dairy farms in 2023 and 2024. As many of these viruses are new, and knowledge about them is still emerging, we have collated current knowledge as a handy reference.

About Dairy UP

Dairy UP is a research and development program to help NSW farmers unlock the potential of their dairy businesses. Led by the University of Sydney's Dairy Research Foundation, Dairy UP is delivered through NSW DPIRD, Scibus, Dairy Australia, and the University of Sydney.

Laboratory detection

BKV is diagnosed mainly by RT-PCR or real-time RT-PCR targeting the 3D gene. Virus isolation is possible in Vero cells, showing cytopathic effects. It can also be detected in faecal samples using metagenomic sequencing and specific PCR assays.

Epidemiology and research gaps

In some outbreaks, BKV has been detected more frequently than traditional enteric viruses. Its pathogenic role in calves remains uncertain. Only one study has linked BKV to histopathologic changes consistent with primary viral enteritis in pathogen-negative calves. In goats, experimental inoculation with a related kobuvirus (Aichivirus C) confirmed its ability to cause diarrhoea.

References

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More info

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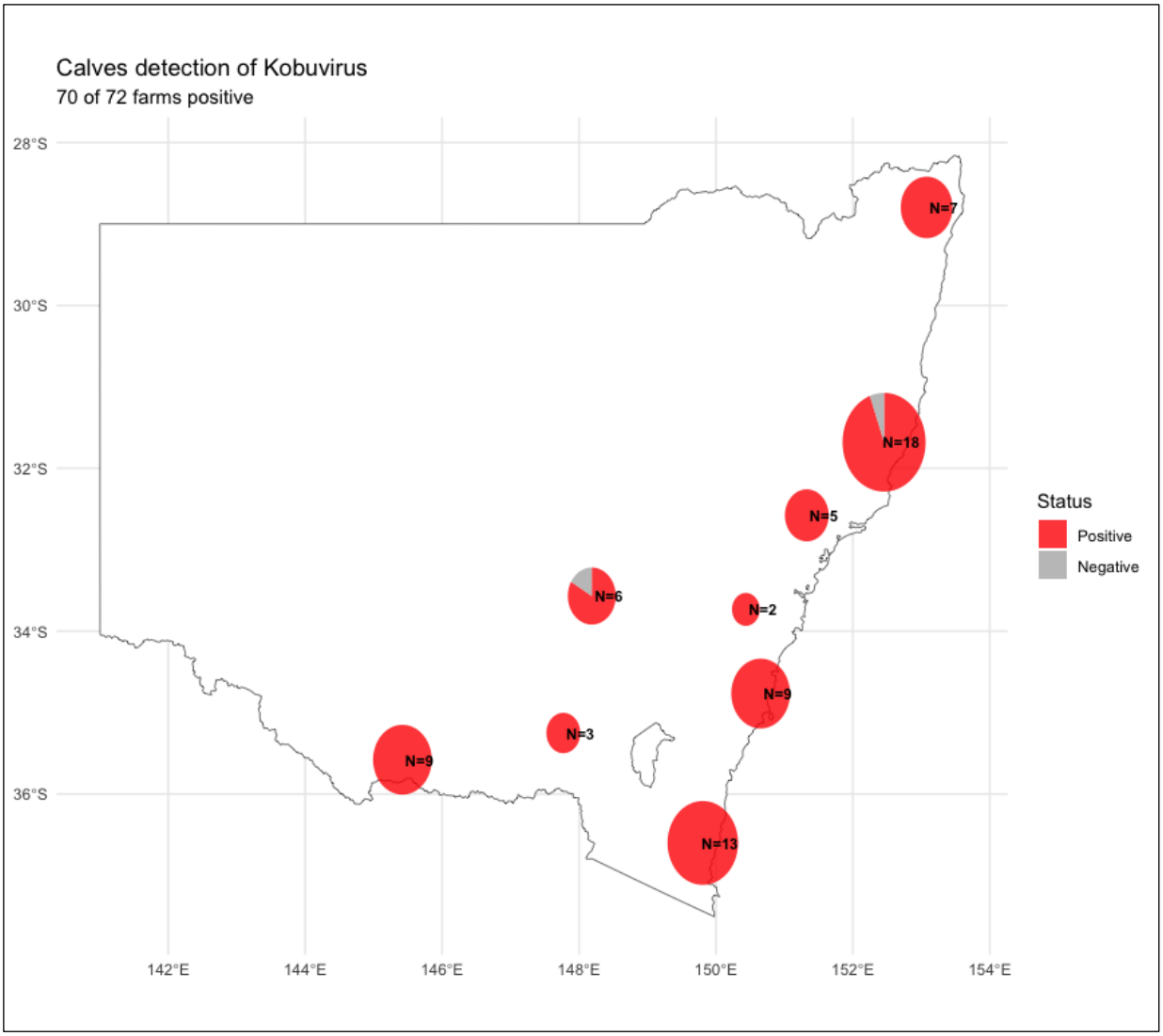

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Unlocking potential

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The University of Sydney – Dairy Research Foundation

NSW Department of Primary Industries

Scibus

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