Fact Sheet: Bovine Hunnivirus P2f Infectious Diseases

August 2025

Bovine Hunnivirus

Bovine hunnivirus (BHuV) has been detected in cattle in multiple countries, but its role in causing disease remains unclear. It was detected on all farms in our study.

There is no consistent pattern of clinical symptoms – it has been detected in calves with scours as well as in healthy animals. There are no reports of respiratory or systemic illness in cattle. It is thought to be spread via the faecal-oral route.

Other species

Laboratory studies show that a related hunnivirus in buffalo can damage kidney and intestinal cell lines after 72 hours, but no tissue damage has been observed in animals. In other species, hunniviruses have been linked to gastrointestinal disease and occasionally to heart, liver, or brain issues. The tissues targeted by BHuV in cattle remain unknown, but in buffalo, the virus may suppress immune responses by blocking interferon production.

Transmission

Transmission is likely faecal–oral, though this has not been experimentally confirmed.

Laboratory detection

Routine testing for BHuV is not widely available. Detection primarily relies on RT-PCR to identify viral RNA in faeces. Virus isolation has been achieved in Madin-Darby bovine kidney (MDBK) cells, and ELISA has been used in seroprevalence studies, revealing low antibody levels in cattle. No standardized diagnostic protocols or culture methods are currently in place.

Notes

Bovine hunnivirus (BHuV) is a non-enveloped, single-stranded RNA virus in the family Picornaviridae (genus Hunnivirus).

The causal role of BHuV in disease has not been established. Although it is frequently detected in diarrheic calves, it is also found in healthy animals, and no definitive link to illness has been proven. Further research is needed to clarify its pathogenic significance.

Key points

- Bovine hunnivirus (BHuV) is a picornavirus detected in cattle worldwide.
- Its role in causing disease is unclear. It is found in calves with and without diarrhoea.
- There is currently no evidence it causes respiratory or systemic disease in cattle.
- More research is needed to find out which tissues the virus affects and how this links to disease.

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.

References

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More info

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DairyUP
Unlocking potential

Delivery organisations

The University of Sydney – Dairy Research Foundation | NSW Department of Primary Industries | Scibus | Dairy Australia

Partner organisations

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