Fact Sheet: Bovine Parechovirus

P2f Infectious Diseases

August 2025

Bovine Parechovirus

Bovine parechovirus (BoParV) was discovered fairly recently and its role in disease is currently not clear. Knowledge about its biology and clinical relevance remains limited.

Since its discovery in 2018, BoParV has been detected in both calves and adult cattle. It's been found healthy animals and those with scours, suggesting possible subclinical infections.

The modes of transmission have not been studied but it has been detected in manure so probably spreads via the faecal oral route: infected animals shed the virus in their manure and spreads to other calves when they swallow material from contanimated manure and surfaces.

Current knowledge

Clinical signs, pathogenicity & in vitro evidence

BoParV is an unclassified virus within the genus Parechovirus (family Picornaviridae), a non-enveloped, positive-sense RNA virus. It was first identified through metagenomic sequencing.

No definitive clinical syndrome has been linked to BoParV, though it is often found in faecal samples from diarrheic cattle. Experimental infections have not been performed, and no histopathology data exist. The virus has been isolated from bovine faeces in MA104 and Marc-145 cells, producing cytopathic effects within 2–3 days after inoculation.

Its pathogenic role remains unclear, and it is frequently detected alongside other enteric pathogens.

Laboratory detection

No routine diagnostic tests or serology are available. It can be detected with real-time RT-PCR targeting parechovirus RNA and virus isolation in MA104 cells. Both of these tools are used only in research settings.

Notes

The clinical significance of BoParV is uncertain. More research is needed to clarify its pathogenicity, tissue tropism, and epidemiology.

Key points

- Bovine parechovirus (BoParV) is a picornavirus first detected in 2018.
- Its role in disease is unclear.
- BoParV is found in scouring and healthy cattle; no consistent clinical signs confirmed.
- Isolated in MA104 and Marc-145 cells; causes cytopathic effect in vitro.
- Likely faecal–oral transmission; no experimental infections or histopathology data.
- Diagnosis by RT-PCR or virus isolation (research only); no routine tests available.
- No vaccines or treatments; control relies on hygiene and biosecurity.
- Further research needed on pathogenicity, tissue tropism, and prevalence.

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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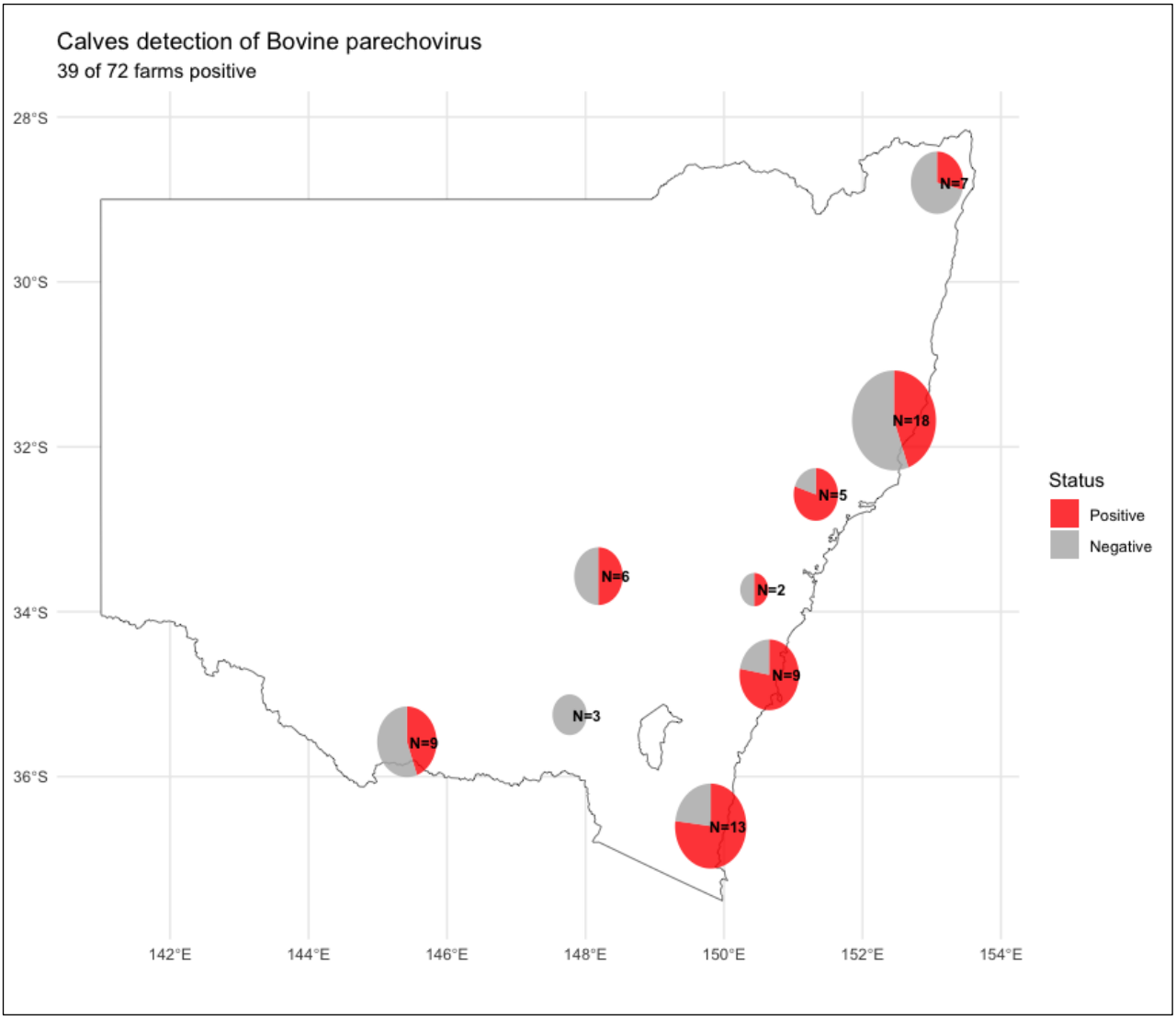
More info

Project lead
Dr Barbara Brito Rodriguez
email: barbara.britorodriguez@dpi.nsw.gov.au



DairyUP
Unlocking potential

Delivery organisations

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

Partner organisations

NSW Farmers Growing the best | eastAUSmilk | Dairy NSW / Dairy Australia | AFMH | Leppington Pastoral Company Pty Ltd | NSW Local Land Services | Norco

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