

Feeding Innovation: Standardising Equine Insulin Testing with Carbohydrate Pellets

improving field diagnosis of equine metabolic syndrome with a palatable, reliable oral glucose test

Equine Metabolic Syndrome (EMS) is a widespread and serious health condition in horses and ponies, characterised by insulin dysregulation and a high risk of laminitis.

Early diagnosis is critical—but current methods present challenges. Basal insulin and glucose levels are unreliable, and while oral glucose tests (OGTs) are preferred in the field, varying test protocols and poor repeatability have limited their clinical utility.

To address this, Associate Professor Melody de Laat and researchers at QUT's Centre for Agriculture and the Bioeconomy undertook a repeated measures, longitudinal study to evaluate a novel OGT using a high non-structural carbohydrate (NSC) dietary pellet. The research found that substituting traditional glucose solutions with a familiar, palatable feed pellet improved test compliance in horses without compromising diagnostic accuracy.

Building on these promising findings, QUT partnered with global pharmaceutical company Boehringer Ingelheim to conduct a larger, multicentre trial involving 157 horses and ponies. The trial confirmed the feasibility, palatability, and effectiveness of the pellets in real-world field settings.

This innovation offers veterinarians a standardised and animal-compliant diagnostic tool, enables earlier detection and management of EMS by horse owners, and addresses a critical equine welfare issue with a validated, commercially available product.



Impact highlights

- Demonstrated the reliability and feasibility of using carbohydrate pellets in oral glucose testing for equine insulin dysregulation.
- Partnered with Boehringer Ingelheim to conduct a large-scale multicentre trial involving 157 horses and ponies.
- Supported the development of a new veterinary feed supplement for field-based EMS diagnosis.
- Research led by Associate Professor Melody de Laat at QUT's Centre for Agriculture and the Bioeconomy.



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