

RoXsta™ System's Potential in Cattle Breeding Being Explored

- **Scoping study to commence to assess the potential use of Memphasys' innovative RoXsta™ System to determine threshold levels of oxidative stress in the bovine and potential correlations with productive performance.**
- **Preliminary pregnancy results expected late February 2025.**
- **If initial findings are promising, the study could lead to a larger-scale clinical trial in Autumn 2025, in collaboration with the University of Newcastle.**
- **The study represents a key step in exploring innovative solutions for improving livestock productivity, with potential significant benefits for the agricultural sector.**

Australian biotechnology company Memphasys Limited (ASX: MEM) (“Memphasys” or “the Company”) is pleased to announce the commencement of a scoping analysis to explore the potential of its RoXsta™ System in determining threshold levels of oxidative stress in the bovine and its impact on reproductive performance. Also acknowledging that the commercial outcomes may differ depending on the application to special breeding herds vs larger general breeding herds Memphasys will also we also review the cost vs the benefit related to the testing’s applications.

This study will commence December 2024 and take place at a commercial cattle operation in New South Wales and will collect blood and plasma samples from 50 heifers, approximately one-month post-artificial insemination. This timeframe coincides with the establishment of foetal heartbeat and the commencement of limb development—critical timepoints for assessing reproductive outcomes.

The **experimental hypothesis** posits that antioxidant deficiency in cattle is associated with reduced reproductive success, including failed conception or unsuccessful pregnancy maintenance. Data collected during this study will retrospectively correlate antioxidant levels with key physiological conditions, such as body condition score, with the **primary outcome** being conception rate as determined by ultrasound testing on Day 90 of pregnancy.

Study Objectives and Future Implications

This analysis, conducted at minimal cost, is intended to determine whether assessments of antioxidant activity in blood plasma can inform nutritional supplementation strategies for ethical herd productivity management. Should the preliminary data yield positive correlations, follow-up studies will evaluate antioxidant status at multiple stages of the artificial insemination process and explore the therapeutic potential of targeted antioxidant supplementation.

Pending favourable findings, a larger-scale clinical trial is planned for Autumn 2025 in collaboration with the University of Newcastle, leveraging their expertise to investigate the broader implications of oxidative stress on bovine reproductive health.

David Ali, Managing Director and CEO of Memphasys, commented:

“We are extremely excited about the launch of this scoping study. The findings could open new opportunities for Memphasys and applications for RoXsta™ in the agricultural sector, reinforcing our commitment to developing innovative solutions that can improve livestock productivity. If the preliminary data is promising, this will lay the groundwork for a larger-scale clinical trial with a third party through the University of Newcastle, which could ultimately have significant benefits for the farming industry and the future growth of our business.”

“The study, which represents a key milestone in Memphasys’ foray into the agricultural sector, could significantly enhance livestock productivity by addressing reproductive challenges ethically and effectively.”

This announcement has been approved for release by the Board of Memphasys Limited.

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About Memphasys

Memphasys Limited (ASX: MEM) specialises in reproductive biotechnology for high value commercial applications. Reproductive biotechnology products in development include medical devices, in vitro diagnostics, and new proprietary media. The Company’s patented bio separation technology, utilised by the Company’s most advanced product, the Felix™ System, combines electrophoresis with proprietary size exclusion membranes to separate the most viable sperm cells for human artificial reproduction.

Website: www.memphasys.com

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