

AI-Port Update: Spring Field Trial Yields Positive Results

Key Points:

- **Spring field trial of Artificial Insemination (AI)-Port conducted with four bulls across 146 cows at a partner farm in the Hunter region of NSW**
- **Using the Memphasys ambient temperature AI-Port system, pregnancies were achieved that were 60% of the rates observed with conventional cryostorage procedures. An improvement on the initial pilot study conducted in April 2023**
- **Trial results offer valuable insights for further improvement in identifiable areas including:**
 - o **optimising the media; and**
 - o **instituting operational improvements in the field**
- **Media optimisation work will commence by University of Newcastle (UoN) researchers during Q1FY24**
- **A further AI-Port field trial is planned for November 2024 once improvements incorporated**
- **AI-Port has an estimated addressable beef (non-dairy) market size of nearly A\$2.4 billion¹**

Australian-based bio-separations and reproductive biotechnology company Memphasys Limited (ASX: MEM) (Company or Memphasys) is pleased to announce findings from a field trial of Artificial Insemination (AI)-Port in November 2023 at a partner stud farm in the Hunter region, New South Wales.

The aim of the field trial was to increase pregnancy rates and introduce operational improvements over traditional AI using cryostored semen.

AI-Port stores and transports animal semen for artificial insemination for up to seven days without the harmful effects of freezing sperm used in standard AI procedures in livestock. AI-Port has an estimated addressable beef bovine (non-dairy) market size of nearly A\$2.4 billion.¹

The spring 2023 pregnancy comparison field trial was conducted with semen from four bulls achieving a pregnancy rate that was 60% of that observed with conventional cryostorage procedures. MEM will now use results from the trial to improve identifiable areas particularly optimising the media and instituting operational improvements in the field.

¹ Extracted multiple sources: Grandview Research–Veterinary AI Market Size, share and trends, analysis report by animal type–2017–2030- <https://www.grandviewresearch.com/industry-analysis/veterinary-artificial-insemination-market> ;United States Department of Agriculture–Foreign Agricultural Service 2021 (Report No: BR2021-0010);“World Statistics for Artificial Insemination in Cattle; Statista–“Capturing the Value of Artificial Insemination in Commercial Herds”;“Artificial Insemination–Current & Future Trends” As percentage of global total doses

Optimization of the AI-Port medium will involve systematic evaluation of modifications to the medium composition including, for example, supplementation with additional antioxidants, and changes to the energy substrates provided to the spermatozoa to sustain their motility. The major operational improvement will involve establishing a field laboratory at the site of semen collection, so that the ejaculate is not compromised prior to its suspension in AI-Port medium.

University of Newcastle researchers led by MEM Scientific Director Professor John Aitken will undertake further work on media optimisation for AI-Port in Q3-Q4FY24. Following improvements in these identifiable areas, a further pregnancy comparison field trial is planned for November 2024; with MEM to begin the process of engaging with multiple studs in preparation for the trial.

The field trial involved incorporating an additional step into the AI-Port process, which was introduced following an initial pilot study conducted in April 2023. This step involved removing seminal plasma through a centrifugation process. Used in conjunction with MEM's proprietary AI medium, the extra step was found to extend the longevity of the sperm up to seven days, produce a high yield of sperm and enhance the in-vitro parameters of progressive motility, morphology, and vitality.

MEM Acting CEO and Managing Director David Ali said:

"The results of the spring field trial highlight that we are heading in the right direction in terms of developing a successful product that increases cattle pregnancy rates via AI over traditional methods. While the results are a significant improvement on the initial field trial conducted in April 2023, there is still more work to be done to make it comparable to traditional AI practices in cattle.

Despite this, MEM remains strongly of the belief that we can close the gap to conventional practice with the eventual aim of successfully providing better outcomes over traditional AI methods. The results provide valuable insights for improvement; and our focus between now and the November field trials, will refine the medium and undertake studies to examine the functional capacity of the spermatozoa using IVF as a surrogate marker of pregnancy rates.

"I look forward to keeping you updated on our progress in 2024."

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

ENDS

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About Memphasys:

Memphasys Limited (**ASX: MEM**) is a reproductive biotechnology company specialising in developing and commercialising novel medical devices, diagnostics, and media for application to human and animal reproduction.

Website: www.memphasys.com

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