

DEVELOPMENT OF A STANDARD AI AREA FOR OUTDOOR PRODUCTION – THE ‘AI POD’ – EASEY PIGS AND RATTLEBOW FARMS

Project duration: 2013 – 2016

Background

Reproductive performance in the outdoor sector has remained at a suboptimal level for some time. There are a number of reasons for this, one of which, as feedback from the industry has demonstrated, is a need for a well-designed AI area.

This trial was commissioned to design a new AI area which would provide the correct environment for sows during heat detection and insemination, while conferring a high degree of labour efficiency. An additional requirement was for the new AI area to be easily dismantled and transported for when the site is moved.

Aims and objectives

To examine the use of an alternative system for artificial insemination of outdoor sows focusing on:

- More efficient use of labour
- Providing an optimised environment for the artificial insemination of sows on outdoor units
- Providing a more pleasant environment for staff to work in during extreme of weather (eg sun, rain, wind).

The above aims are linked both to more efficient production and improving staff satisfaction and, therefore, staff retention.

The AI Pods

The design of the AI pods was similar across each unit. Data, including farrowing rate and total born, has been provided.



Performance data

Initially, the farrowing rate fell considerably across all units using the AI pods, with one unit experiencing a drop of over 8% compared with their conventionally served sows. Upon investigation, it is believed that the drop was due to the fact that it is difficult in a normal, outdoor AI setting, to inseminate a sow that is not on heat and it is obvious to the stockperson that this is the case. When the animal is in the AI pod, it is placed in a stall which restricts its movement, this makes the signs that the animal is not on heat more subtle.

This is a key point that should be noted from the trial, with one unit manager suggesting that, while they would invest in pods for all their units, staff who were new to AI would be trained in a conventional system to ensure they developed proper heat detection skills, before moving into the AI pod. One of the unit managers also suggested that the AI pod would potentially be more beneficial on a unit with 1,000 sows or more on one site.

Statistical analysis was carried out on both the farrowing percentage and ‘total born’ figures, in order to identify whether using the AI pod had a significant impact on either parameter.

- No significant impact on farrowing percentage was detected ($P>0.05$)
 - The average farrowing percentage for the AI pod during the final 10 months of the trial was 1% higher than that of the conventional system (Figure 1)
- There was no statistically significant difference detected in total born numbers ($P>0.05$)
 - The average total born numbers across the course of the trial (where genotypes were the same and once the initial issues were solved with serving non-standing sows) varied by only 0.1 pigs total born per litter (Figure 2).

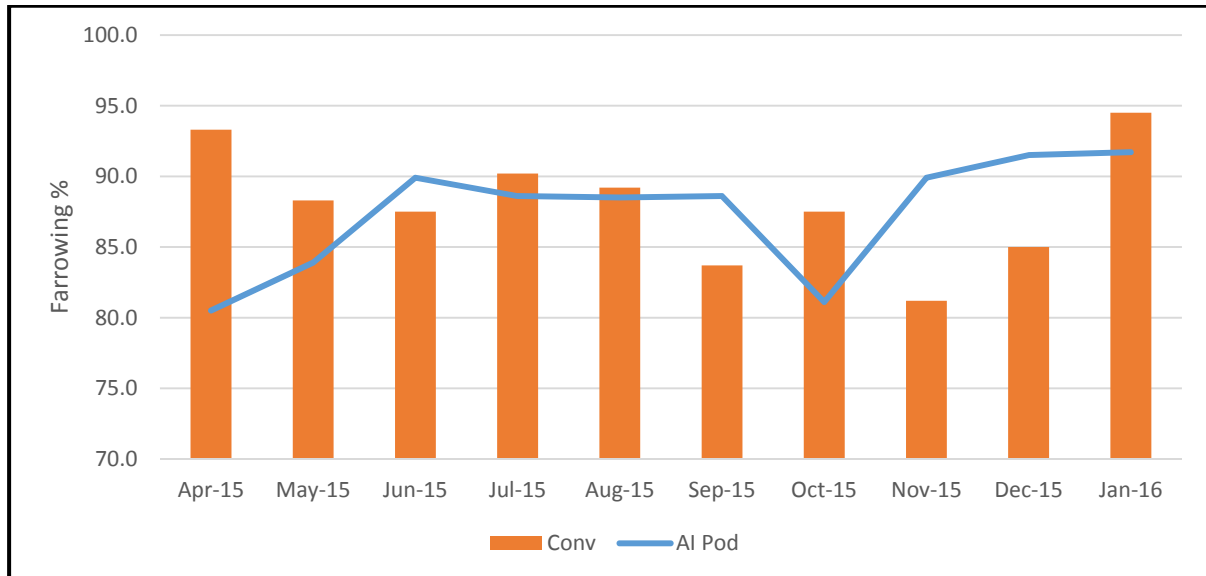


Figure 1: Farrowing percentage data from the AI pod and the conventional system

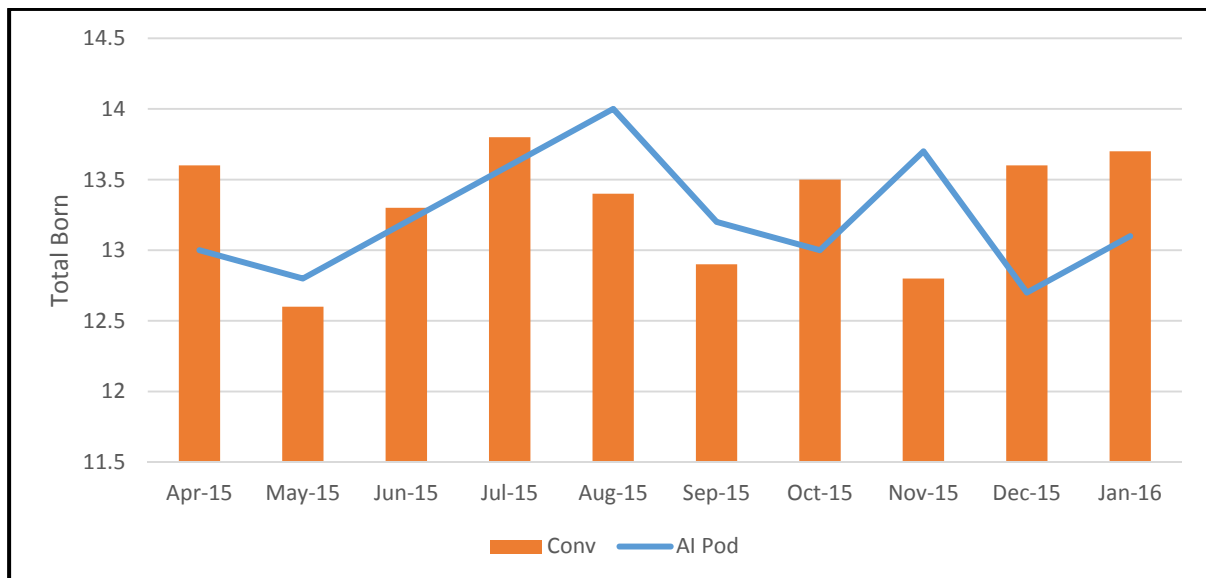


Figure 2: Total born data

Although no significant difference was noted between performance and labour use on the two units, it is important to clarify that the second unit (without the AI pod) represents a 'model' example of outdoor AI facilities. It has a properly designed, dedicated AI tent, with a well laid out penning system, along with provision of boar contact both during and after AI.

Costings

The cost of the AI pod is approximately £9,000 – 11,000, dependent on specification. One unit chose to erect a tent next to the AI pod to use as a 'holding area' for post-mating boar contact, this cost an additional £2,500.

Although difficult to carry out a full cost benefit analysis, one of the unit managers was keen to point out that staff seem very happy with the new system as it provides a much better working environment and a more orderly system of operating. There seems to be little, if any, time benefit in terms of labour use.

One of the unit managers said: "Just seeing the initial concept made a lot of people look at how they were serving pigs in a different way and, even if they haven't followed it exactly, most have adapted the way they work to be as close to the stall system as they could. It has been a real industry game changer with regard to workload and quality of service wherever it has been used."

Summary

Does the AI pod provide more efficient use of labour?

Labour use seems to be the same across both systems.

Does the AI pod provide an optimised environment for the artificial insemination of sows on outdoor units?

The process seems more efficient and calmer, but has not significantly impacted on performance figures (either negatively or positively).

Does the AI pod provide a more pleasant environment for staff to work in during extreme weather?

Yes. The AI pod provides more protection and a more orderly working environment. The staff who have worked in the AI pod are very positive about it.

Watch the AI pod in action: <https://www.youtube.com/watch?v=GDJ2zJ9KLzQ>

AI innovation could aid performance in outdoor herds (Rattlerow Farms Ltd. October 2013)

<http://rattlerow.co.uk/breeding/ai-innovation-could-aid-performance-in-outdoor-herds/>