

## FIELD EVALUATION OF THE FARROWIN® APPLICATION FOR REDUCING STILLBIRTH RATES IN PIG HERDS

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### Objectives

Stillbirth remains a major concern in pig production worldwide, with important economic, ethical and animal welfare implications. The first and main objective of this study was to **evaluate the added value of the FarroWin® application under commercial field conditions for reducing stillbirth rates**. The second objective was to assess the calibration of the predictive model by comparing predicted and observed stillbirth rates according to risk categories.

### Material and methods

A prospective field trial was conducted between December 2024 and August 2025 in three commercial farrow-to-finish herds in France. A total of **1,100 sows across 32 farrowing batches** were included.

FarroWin® predicted the individual stillbirth probability using parity rank, total born at previous farrowing, previous stillbirth rate and backfat thickness before farrowing (Teixeira et al., 2024). Sows with predicted **stillbirth probability >8%** were classified as **at-risk**. At-risk sows were divided into:

- **Supervised group:** daytime farrowing with reinforced monitoring
- **Non-supervised controls:** nighttime farrowing with standard management

Reinforced monitoring included regular surveillance of piglet-to-piglet interval, hyperthermia control and standardized obstetrical interventions when required.

Statistical analysis was performed using a generalized linear mixed model (GLMM) including herd and batch as random effects.

### Results

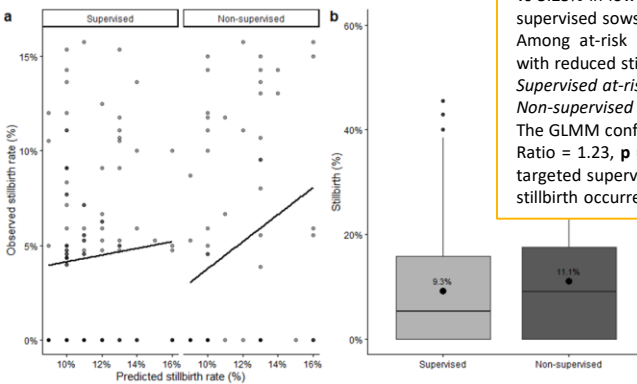
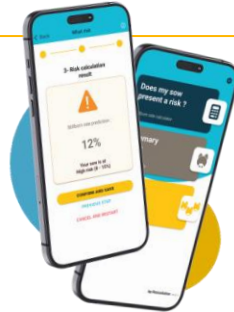


Fig 1. Predictive performance of FarroWin® (a) and impact of reinforced farrowing supervision on stillbirth rates (b) according to supervision status

Farrowing supervision has been shown to reduce stillbirth occurrence, but intensive monitoring of all sows is difficult in practice due to labor constraints. Therefore, identifying sows at high risk of stillbirth may allow farmers to prioritize supervision and optimize resource allocation. FarroWin® is a decision-support application based on a Bayesian predictive model using routinely collected sow data to identify sows at high risk of stillbirth.



Predicted and observed stillbirth rates were consistent: 6.04% vs 5.25% in low-risk sows and 11.9% vs 11.12% in at-risk non-supervised sows, indicating a good model calibration (Fig. 1a). Among at-risk sows, reinforced supervision was associated with reduced stillbirth rate:

Supervised at-risk sows: 9.25%

Non-supervised controls: 11.12%

The GLMM confirmed a **significant effect of supervision** (Odds Ratio = 1.23,  $p = 0.044$ ) (Fig. 1b). These findings indicate that targeted supervision guided by FarroWin® effectively reduced stillbirth occurrence in high-risk sows.

### Conclusion

The FarroWin® application successfully identified sows at high risk of stillbirth and enabled targeted farrowing supervision under commercial conditions. Reinforced supervision of predicted high-risk sows significantly reduced stillbirth occurrence. These results highlight the potential of predictive decision-support tools to improve reproductive performance, animal welfare, and labor efficiency in pig production. Further research is necessary to assess economic benefits and performance across diverse herd types and management systems.

FarroWin®,  
the APP for pig farmers designed  
to organize farrowing assistance.



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