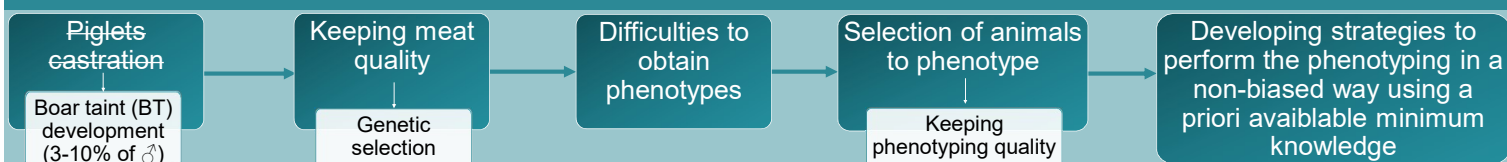


41741 – Innovative strategy using phenotypes and genetics to optimize partial sampling applied to boar taint

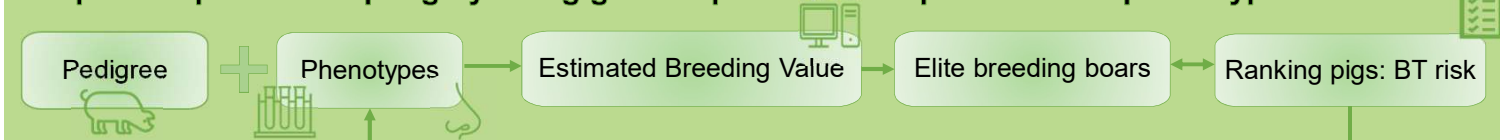


INTRODUCTION



OBJECTIVE

To optimize partial sampling by using genetic prediction as prediction of phenotypes.



METHODS

Samples: 997 animals Pi×LR (11 batches – 2 farms)

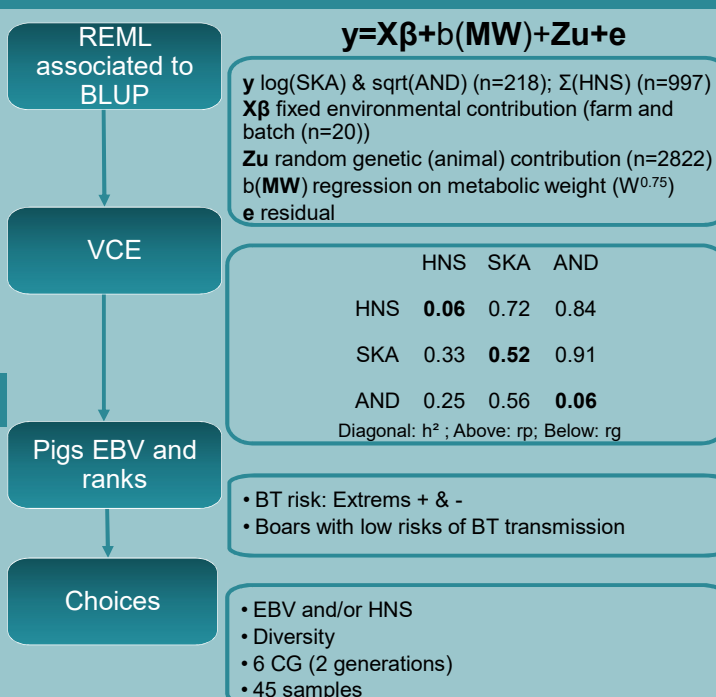
Phenotypes:

- Skatole (SKA)
- Androstenone (AND)
- Human nose scores (HNS) at slaughterhouse & lab (0-1)
- Weight (W) (~3 days before slaughtering)

Pedigree: 2822 animals (5 generations)

Variance components and breeding values were estimated using BLUPF90 family of programs.

GENETIC STRATEGY

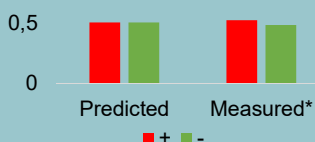


RESULTS

Actual	Predicted	
	Tainted	Untainted
Tainted	18	8
Untainted	4	15

Accuracy=0.73 $\left(\frac{TP+TN}{TP+TN+FP+FN} \right)$

Predicted vs measured by chemistry



* The corresponding sensory thresholds for SKA (200 ppm) and AND (2000 ppm)

CONCLUSION

Reducing BT risk ⇔ Reducing (eliminating) need for castration ⇔ Increasing animal welfare

In the case of boar taint studies, incomplete and insufficiently large data set is frequent. Targeted collection of more phenotypes is necessary for

- Reflecting correctly variability of the population
- Including genetic diversity (sampling of ≠ sires)

Results: Proposed strategy based on using a genetic model allowed adequate sampling in a disequibrated and for BT related compounds highly variable population → improve accuracy of animal rankings for boar taint risk.

Ongoing:

