

ANIMAL SCIENCE

Title: Identification of biomarkers of fertility in commercial boars –#18-195 InPPA

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Scientific Abstract:

There is a need to identify subfertile boars before they enter into the breeding herd. Seminal plasma proteins are essential for normal sperm function and transport and play an important role in fertilization. The objective of this study was to use liquid chromatography tandem mass spectrometry for shotgun proteome analysis to investigate whether differences in boar fertility phenotype can be differentiated by seminal plasma protein expression. Following 50 breedings, boars were categorized into one of four phenotypes: high farrowing rate and total born (HFHB; n=9), high farrowing rate with low total born (HFLB; n=10), low farrowing rate and total born (LFLB; n=9), and low farrowing rate with high total born (LFHB; n=4). There were 436 proteins measured in at least one sample across all animals. There were 245 high confidence proteins and 56 were differentially abundant between the high fertility phenotype (HFHB) and at least one of the three subfertile groups. Findings support that seminal plasma protein profiles are distinct between boars with different fertility phenotypes.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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