

**Title:** Evaluation of a Physiological Test for Sow Longevity – NPB #11-103

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### Scientific Abstract

The objective of this study was to examine relationships between changes in the external genitalia of gilts at 140 days of age in response to 200 IU of PG600 or boar exposure and their subsequent reproductive performance as adults. Replacement gilts raised in either litters of  $\leq 7$  piglets ( $n=129$ ) or litters of  $\geq 10$  piglets ( $n=126$ ) in order to create sows with different longevity potentials. Females within each of these groups were randomly assigned to receive 200 IU of PG600 or daily boar exposure at 140 days of age. Changes in the external genitalia were recorded for 20 days post treatment in all gilts. For the gilts receiving PG600, daily boar exposure began at 160 days of age. All gilts were bred between 190 and 210 days of age with pooled semen from the same boars and managed under the same standard operating procedures through gestation, farrowing, lactation and rebreeding. The proportion of females that were rebred after weaning their third litter was determined for each treatment combination and used as a measure of sow longevity. Gilts that had red and swollen vulvas within 10 days after PG600 treatment (62%) were retained in the herd at a similar rate as their counterparts that exhibited estrus in response to daily boar exposure (60%,  $p = 0.76$ ). Gilts that did not show changes in their external genitalia in response to PG600 or estrus in response boar exposure at 140 days of age had considerably lower retention rates (10% and 12%, respectively;  $p = 0.03$ ) compared with their counterparts that responded. There were no differences in farrowing rates or numbers of pigs born alive or dead between gilts treated with low levels of gonadotropins and those receiving daily boar exposure at 140 days of age ( $p \geq 0.23$ ). These results indicate that administration of low levels of gonadotropins and the subsequent monitoring of the vulva appears to be an alternative strategy for the prospective identification of gilts that have high longevity potential and is similar in effectiveness as identification of gilts that exhibit estrus in response to early boar exposure

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