RESEARCH ABSTRACT

ANIMAL WELFARE

Title: Characterization of Sow Longevity and the Developmental Factors that Influence It – **NBP# 02-174**

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Abstract: The length of the adult life of a sow is now recognized as both an economical and a welfare concern. There have been both genetic and non-genetic factors reported to influence the time that a sow is productive. In U.S. pork production, most sows are not uniquely identified until they have been selected and allotted to the breeding herd. Therefore, all factors associated with their rearing cannot be related to their subsequent records as an adult. However, nucleus and multiplier farms offer a unique opportunity to study both genetic and non-genetic influences on sow longevity. Females are uniquely identified at birth and their developmental records are maintained throughout their lifetime. In addition parentage information is also available to estimate the familial influence on longevity. A unique data set was assembled from 21 farms which contained both female developmental records along with subsequent sow productivity records to evaluate differing definitions of sow longevity and how developmental factors may associate with these differing definitions.

Few early life factors consistently influenced longevity across the four definitions of stayability, probability to produce 40 pigs, lifespan and herdlife. For the most part, females that grew slower as a developing gilt and had lower number born alive in their first parity had a lower culling risk. However, this was not the case for the longevity definition of lifespan. Within lifespan, females which had higher first parity number born alive had a greater culling risk. Birth litter traits had minimal impact on longevity. For herdlife, females born into litters which had higher number alive had a lower culling risk. However, this was the only definition in which birth litter factors were significant. Heritability was estimated for the definition of herdlife. The heritability estimate for functional herdlife was 0.18 which suggests that when longevity is defined as time within the herd, it can be improved through genetic selection.