

## **On the genetics of farrowing duration in pigs**

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In the last decades, genetic progress for litter size in pigs has substantially evolved, and consequently, farrowing duration (FRD) has increased. Prolonged FRD is associated with a higher number of stillbirths and impacts the required labour per sow during farrowing and colostrum intake of the newborn piglets. FRD is a difficult-to-measure trait due to the high labour demand and, therefore, it is not commonly available. To our knowledge, most of the previous studies on FRD evaluated data on a few hundred sows and the genetic parameters for this trait have not yet been reported. The goal of this study was to investigate the genetic background of FRD using a large commercial dataset. The genetic parameters for FRD are reported here and a genome-wide association study is currently being carried out. The evaluated data consisted of 14902 litters of 4581 purebred Large White sows from one farm located in Brazil. The data was collected between 2020 and 2023 as part of the routine data collection of the farm that counts with employees in the farrowing room at all times. The time of birth of each piglet was individually recorded and the FRD was defined as the time between the birth of the first and the last piglet. The genetic parameters were estimated with an additive linear model using ASReml v3. The fixed effects were population mean, type of litter (purebred/crossbred), farrowing room, year-week, parity number of the sow, average birth weight of the piglets and litter size. The random permanent, additive and residual effects were also fitted in the model. The average FRD and litter size in this dataset were  $216 \pm 110$  minutes and  $15.0 \pm 2.7$  piglets, respectively. Population mean, year-week, parity number of the sow and litter size were the only significant fixed effects ( $P < 0.001$ ). A heritability of  $0.07 \pm 0.01$  was estimated and the permanent effect accounted for  $0.03 \pm 0.01$  of the total phenotypic variance. A clear linear relationship between litter size and FRD was also observed. Although the heritability of FRD was low, this study brings new insights that may contribute to the genetic improvement of this trait.