

AGC Refresher

-Pursuing the “Best” Animal-

We’ve all heard the terms before: genotype, phenotype, heritability, repeatability, and now genomics. It’s easy to get lost in all this genetic lingo, and thus it can be helpful to get a refresher on the basics and build from there. The application of animal breeding and genetics has been ongoing for thousands of years starting with domestication. We’re now entering a new era of genetics that is exciting for many of us, but troubling for many others. The more we understand, the more we can build trust within and outside the swine industry. We’ll explore this fascinating field of study using the book *Understanding Animal Breeding* by R.M. Bourdon as a guide.

Breeding and genetics is largely about pursuing and developing the “best” animal. But what defines the “best” animal depends on who you ask. A farrow-to-wean producer may say the best is a sow with large litters, a grow-to-finish producer may say the best is a hog with a low feed conversion ratio, while a producer with environmental challenges may say the best is a robust pig. A meat processor in Italy would have an entirely different opinion as would a consumer in Japan. Whatever defines the “best” animal is largely dependent on economics and environment, thus the entire system needs to be understood.

AGC collaborates with the Canadian Centre for Swine Improvement (CCSI) to develop economic values for all traits of interest. For example, a 1cm² increase in loin eye area is worth \$0.41/pig and one additional functional teat is worth \$16/litter. Input is provided from experts across Canada and the international InterPig network. Once all the economically important traits are calculated, they can be included in a mathematical model that will provide direction in developing the best animal for a given system or market. AGC is able to work closely with producers to gather feedback and adjust the direction if necessary. There is danger in pursuing the best performance of only one or two traits to make the “best” animal, for the performance of other traits may suffer. This is one type of interaction in the system, another type involves the environment. Ever heard of the Tibetan swine breed? Keep posted for the next AGC Refresher.

-Brent DeVries, MSc.



Trusted genetics. Count on us.