

## Improved pig genetics and management for better feed efficiency

Farm management and nutrition programs come together with improved genetic selection methods to allow swine producers to experience more rapid increases in performance.

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Genomic selection is increasing the rate of progress that primary breeders are making in significant production traits for pigs.

The traits that have seen the biggest improvements are ones that were more difficult to evaluate and hence had lower reliability breeding values using traditional statistical measurements of breeding values.

Hans Olijslagers, chief technical officer, TOPIGS Norsvin, said that breeding values for traits such as feed intake and daily gain were fairly well estimated using the old techniques and have been improved by introduction of genomic selection, but only marginally. He told the audience of the recent TOPIGS Norsvin webinar that for traits such as number of piglets, survivability, and birth weight, the reliability of the breeding values has essentially been doubled by the introduction of genomic selection.

Olijslagers said that TOPIGS Norsvin pigs in the field have averaged two points of total feed efficiency (TFE) improvement each year for the past 10 years. TFE is defined as the total feed entering an operation divided by the total live weight sold. This measurement includes all of the feed for breeding males and females as well as for the weanling and finisher pigs and all of the live animals sold out of the operations. TFE allows for efficiencies anywhere in the live production operation to be recognized. He said TOPIGS Norsvin's goal is to increase the rate of improvement by 50 percent, from two points of improvement per year to three for the next 10 years.

### Management impact on TFE

Phillip van den Brink, nutritionist and principal, SwiNco, said that the five most influential traits that producers should focus on to improve TFE are back fat on finishers, daily gain for finishers, litter size, pre-weaning mortality and sow weight. He said it takes four times as much energy to make a pound of fat as it does a pound of meat, so promoting muscle growth and not fat deposition improves TFE. He said that diet can influence fat deposition. Similarly, he said that diet also plays a factor in sow weight and daily gain for finisher pigs.

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