ENERGY RESTRICTION DURING DEVELOPMENT IN BREEDING GILTS: AN ECONOMIC ANALYSIS

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Swine production has become a low-margin business. As costs of production have increased, producers are continuing to increase efficiency in market pig production and gilt development. Restricting energy intake during gilt development could have a positive impact on a producer's bottom line, but few studies have economically analyzed production differences caused by energy restriction.

This study utilized gilt development and market pig production data from biological studies that included a 2x2 factorial arrangement of half-sibling maternal lines (LWxLR and L45X) entering two gilt development programs. In one program, gilts were fed on an ad libitum basis. In the other, gilts were restricted to 75% of ad libitum energy intake from approximately 123 days of age until breeding (approximately 226 days of age).

The gilt development data were analyzed in an enterprise budget in both a deterministic analysis where 2004 through 2006 average prices were used and in a stochastic experiment where a simulation engine was used to generate price data with the same correlations and means as historical prices.

In both genetic lines, energy-restricted gilts had a greater probability of reproductive success than ad libitum gilts. Results from the budget showed both LWxLR

and L45X energy-restricted progeny generated greater profits than ad libitum offspring. Restricted LWxLR market pigs had a lower breakeven selling price than ad libitum LWxLR progeny ($38.12/cwt restricted vs. $38.60/cwt ad libitum) while ad libitum L45X progeny had a lower breakeven selling price than restricted L45X offspring ($38.07/cwt ad libitum vs. $38.21/cwt restricted).

In the stochastic simulation, both LWxLR and L45X restricted progeny generated greater profits than their ad libitum counterparts in 93.7% and 79.2% of the iterations, respectively. Restricted LWxLR market pigs had lower breakeven selling prices than ad libitum LWxLR market pigs at all iterations while ad libitum L45X progeny had lower breakeven selling prices than restricted L45X progeny in 89.7% of the iterations of the simulation experiment.