RESEARCH ABSTRACT

Title: Economic Analysis of the UNL Gilt Development Project – **NPB #08-256**

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Scientific Abstract: Because swine production is a low-margin business, producers have increasingly sought ways to increase efficiency in market pig production and gilt development. Restricting energy intake during gilt development has the potential to lower costs associated with gilt development, but the extent to which the lower costs offset production responses has not been previously analyzed.

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 used along with historical average prices to develop deterministic enterprise budgets to evaluate the relative profitability of both the ad libitum and restricted energy gilt development programs for both genetic lines. Additionally, stochastic budgets were simulated using distributions of input and output prices to evaluate how the relative advantage of the two development programs changed under different market price scenarios.

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 progeny from restricted energy gilts 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.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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