

## SELECTION FOR GROWTH RATE IN SWINE UNDER FULL VS LIMIT FEEDING

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A goal for the swine industry should be to maximize the efficiency of converting feed into edible lean tissue. Advances have been made over the past few decades in meeting this goal. More efficient means of accomplishing this goal would be desirable. Selection for increased average daily gain results in fairly rapid improvement in growth rate but is usually accompanied by a substantial increase in feed intake. This increased intake may, in some situations, be more than the pig can convert into lean tissue effectively so that increased fat deposition occurs. It is, therefore, of interest to develop selection criteria and selection environments that maximize efficient lean growth.

Selection for improved feed efficiency has not been consistently successful in experiments where examination of response to selection for improved feed efficiency was an objective. One possible alternative is to select for increased growth rate while restricting intake. This experiment was designed to investigate the effectiveness of this approach.

Pigs from a composite line (Duroc, Hampshire, Yorkshire, Landrace and Spot) that had already undergone four generations of selection for increased average daily gain were divided into three lines. Each line is maintained with 25 first parity gilts mated to 7 boars. Selection criteria in the lines are: Control (C), boars selected are those with average daily gain closest to mean of line; Full (F), boars selected for high average daily gain with ad libitum feeding; Limit (L), boars selected for average daily gain with intake limited to 82% of predicted ad libitum intake. Gilts will be selected in all lines for average daily gain nearest the average of the line. All three lines will be replicated in fall and spring farrowing. Selection will continue for five generations.

Barrows and gilts will be evaluated for average daily gain, probed backfat thickness and feed efficiency. Reproductive performance will be monitored with litter size and pig weights at birth, 21 days and 42 days. A sample of the barrows will be slaughtered each of the last three generations so that carcass merit can be evaluated.

At this writing, the first offspring of selected parents are on test. Results of selection will be presented in future reports.

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