

## PORK QUALITY

**Title:** Improving carcass fat quality by manipulating the amount and timing of feeding dietary fats with different iodine values – NPB #12-062

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**Date submitted:** 20 February 2014

**Scientific abstract:** The inclusion of unsaturated fats in pig diets has raised issues related to pork carcass fat quality. The objective of this experiment was to understand how withdrawal from the diet of unsaturated dietary fat prior to slaughter impacts the composition of jowl fat during the growth cycle and at market. Fifty individually housed pigs (PIC 337 × C22/29; initial BW = 59.3 ± 0.55 kg), were allotted based on sex and initial BW to 10 treatments for an 82 d experiment as follows: 3 dietary fat withdrawal times prior to slaughter (21, 42 or 63d) by 3 dietary fat sources (5% animal-vegetable blend (AV; iodine value (IV) = 90.7), 2.5% corn oil (2.5% CO; IV = 122.7) or 5% corn oil (5% CO), plus a control diet with no added fat (CNTR) fed throughout the duration of trial. Pigs were weighed and jowl adipose samples were collected on days 0, 21, 42, 63 and at harvest on d82. Data were analyzed using PROC MIXED with treatment and sex as fixed effects. At market (d82) increasing the withdrawal of dietary fat further away from market increased 18:1 ( $P < 0.01$ ) and tended to increase 14:0 concentrations ( $P = 0.054$ ). It also significantly decreased 18:2 ( $P < 0.01$ ), and tended to decrease 18:3 concentrations ( $P = 0.08$ ). Dietary 5% CO resulted in the greatest 18:2 concentrations in jowl fat, followed by 2.5% CO; 5% AV resulted in the lowest 18:2 levels ( $P < 0.01$ ). Dietary fat withdrawal before market significantly reduced carcass IV measured at d82 ( $P < 0.01$ ). In conclusion, elevated 18:2 intake, such as adding feeding 5% CO makes lowering carcass IV in the depot fat very difficult and may take as long as 61d. The withdrawal of unsaturated dietary fat apparently encouraged de novo lipogenesis, resulting in a more saturated depot fat. Importantly, this alteration of deposited fat composition did not translate into improved belly firmness, depth, weight, or fat color.

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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 This report has not been peer-reviewed.

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