CRC for High Integrity Australian Pork

3A-101: ***Body composition and physiological changes associated with immunization of pigs against gonadotrophin releasing factor (GnRF) at two different live weights***

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Aims and Objectives

The aim of this experiment was to identify and compare the physiological, nutritional and pork quality changes that occur over 28 days following the second injection of the immunocastration vaccine, Improvac®, in light and heavy weight pigs.

Key Findings

- When pigs are immunised at a light weight (50 kg) and/or on a restricted diet they have a reduced propensity to deposit fat, however the restriction in feed intake adversely affects growth rate and carcass weight.
- The majority of fat deposition for males immunised at heavy live weights (80 kg) occurs from Day 14 to 28 after the second vaccination and is associated with reduced lean deposition and increased feed intake.
- The increased fat deposition associated with immunisation against GnRF at heavy LWs results in an increase in back fat but has no impact on IM fat.
- Gender did not influence objective or eating quality in this study. However, fail rate for quality grade (20.7% IM vs 29.8% EM) and re-purchase intention (26.7% IM vs 38.7% EM) was significantly lower for pork from immunised males compared to entire males across all treatment combinations.
- Androstenone and skatole levels measured in belly fat were significantly higher for entire males than immunised males. Androstenone was also higher in entire males slaughtered at heavy weights than at lighter weights.
- For skatole 18.7% of light entire males and 31% of heavy entire males exceeded the sensory threshold. One heavy immunised male also exceeded the sensory threshold for skatole.
- For androstenone 13.4% of heavy entire males exceeded the sensory threshold (>1.0 ug/g). No immunised males exceeded the threshold.
- The results show that boar taint remains a threat to eating quality even in entire males slaughtered at very light weights.

Application to Industry

- Immunisation against GnRF can successfully reduce the boar taint compounds androstenone and skatole and the fail rates of pork for eating quality and re-purchase intention compared to entire males. However, the problem of increased back fat and therefore carcass payment penalties remain.
- Strategies need to be developed to limit the increase in back fat and decrease in lean deposition of immunised males at heavier live weights. Potential strategies include feeding the appropriate lysine level, using pST for 2 weeks only and suppressing voluntary feed intake.