

# Puberty Induction and the Effect on Gilt Growth Characteristics

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Over 80 percent of replacement gilts are purchased and arrive on-farm at 95-105 kg, 145 to 150 d of age and with 10 to 13 mm of backfat. Increased growth rate, decreased backfat and reduced appetite have been implicated in an increase in culling rate due to locomotor problems and reproductive failure, and consequent decrease in sow longevity in the herd. There is reason to believe that early onset of puberty may decrease postpubertal growth rate and ultimate body size, which may decrease maintenance feed costs and reduce culling rate due to locomotor problems. The purpose of the study was to determine whether inducing early puberty in gilts results in a reduced rate of growth and a smaller mature body size, without compromising reproductive function.

At 70 d of age, littermate gilts were balanced across treatments based on growth rate and weight and placed in pens of 5. Gilts were randomly assigned to either 1) receive twice daily boar exposure to induce puberty, beginning at 130 d of age (STIM), or 2) receive no boar exposure for the duration of the experiment (CON). Starting at d 80, individual daily feed intakes were recorded and weekly weight, backfat depth (P2) and loin muscle depth measurements were recorded until d 210. Pubertal and subsequent heats were recorded in both groups of animals.

There was a significant ( $P < 0.05$ ) difference between age at puberty (149.84 vs 164.93 d), exposure to puberty interval (19.84 vs 34.93 d) and weight at puberty (100.01 vs 111.11 kg) between STIM versus CON gilts, respectively. There was no difference between P2 and loin depth at puberty between treatments.

**Implications:** The ultimate benefits of this trial to the industry could be 1) increased production efficiency, 2) improved animal welfare and 3) reduced culling rates of sows.