



25 Years of Swine Research





Original Facilities

- 250 sow farrow-to-wean unit was built in 1980 by the University of Saskatchewan.
 - It consists of two 100-sow and one 50-sow units, each with its own gestation, farrowing and weanling areas.
- Small feeder barn
 - 24 pens capable of holding 10 pigs each.



Grower-Finisher Facility

- May 1992, pigs were introduced into the new Grower-Finisher Research Unit
- The cost of the new unit
 - \$35/ft² – moderately higher than the \$20-\$25/ft² experienced by commercial units.
- 5 functional areas
 - basic, intensive, semi-intensive, commercial and proprietary
 - Surgery, metabolic rooms, additional office



Sow Facility

- June 2008
- 330 sow walk-in lock-in facility
 - Provides ability to compare group and stall systems
- 4 week weaning
- Consolidation of gestation facilities


Advisory Board





EVALUATION OF FEEDERS FOR GROWING AND FINISHING PIGS

- Twelve commercial feeders were evaluated
 - 12-week growing/finishing period
 - Feeders were classified according to:
 - feed form (dry vs. wet/dry)
 - space (single vs. multiple space)



EVALUATION OF FEEDERS

- RESULTS -

- ADG and feed disappearance were greater with wet/dry feeders.
 - use of wet/dry feeders will enable pigs to be marketed 5 - 7 days earlier
 - diet offered in this study was mash
 - difference between feeder types be less with pelleted diets
- Single and multiple space feeders did not differ in ADG or feed disappearance



Wet-Dry Feeders

- How much was performance (ADG) increased?

1. 2 %
2. 5%
3. 10%
4. >10%

5%

**or \$1.85/hog
at today's prices**



PRE-SORTING PIGS BY WEIGHT

- Should pigs be sorted by weight at the start of growing/finishing phase?

—Yes or No

- Pigs were classified as Heavy, Medium, or Light prior to allocation to pens.
- Compared a in/all out (AI/AO) or continuous pig flow management



PRE-SORTING PIGS BY WEIGHT - RESULTS -

- ADG and behaviour did not differ between pigs in uniform and variable weight pens

Save time and money
DON'T sort pigs

weight pens emptied at the same rate

- AI/AO - variable weight pens emptied **6 days** (104 vs. 110) faster than uniform pens



EFFECT OF ERGOT ON PERFORMANCE

- Measure the impact of ergot-contaminated wheat on performance of weaned pigs
 - Determine the level that can safely be included in nursery diets
 - .05%, .10%, .25%, .50%, and 1%
- Ergot contamination
 - Poor growth, decreased feed consumption, and poor feed efficiency
 - Bigger issues in the sow herd



EFFECT OF ERGOT

- RESULTS -

- Feeding high levels of ergot caused severe reductions in growth performance
 - ADG was similar with diets up to .10% ergot
 - Impact most pronounced in week 1 and 2
 - 1.0% ergot resulted in a drop in performance of 82% and 38% respectively and 40% overall

How Much Ergot Can We Feed?

- If wheat contains 1.0% ergot. What is the safe inclusion rate of wheat in a nursery diet?
 1. 0%
 2. 5%
 3. 10%
 4. 20%

10%

**0.1% ergot = 1 kernel,
per 1,000 kernels**



IMPACT OF REDUCED NOCTURNAL TEMPERATURE ON PERFORMANCE

- Reduced temperature setpoint during the summer
 - Sustain pig performance by modifying pig eating behavior and stimulating the ADFI.
- Setpoint temperature reduced 6⁰C (18 to 12)



RNT

- RESULTS -

- Two trials showed increases in ADG in the RNT rooms increased from 2.1 to 5.2%
- Healthy affected fluctuat
– as long as this fluctuation is progressively achieved through the day-night outside temperature fluctuation.

Cost savings
\$1.05/hog



Nipple Drinker Height and Flow Rate on Water Wastage


- Previous work on water wastage indicates grower/finisher pigs wasted 25%
 - nipple drinker, standard flow rate (700 ml/min) and height (5 cm higher than the shoulder height of the smallest pig)
- Commercial farms, water wastage from a nipple drinker is reported as high as ??????

On-farm Water Wastage

- What is the range of on-farm water wastage?

1. 20 – 30%
2. 30 – 40%
3. 40 – 50%
4. 50 – 60%

60%
or \$1.25/hog
at today's prices



WATER WASTAGE

- RESULTS -

- Nipple height did not affect feed and water intake
- Water intake
- Low nipple height in grower
- Wastage was increased by 7% at higher flow rates (500 vs. 1,000ml/min)

Preliminary audit
60% of nipple drinkers
provide too much water

Guidelines

- Feeder Gap Adjustment
 - Performance allowed for 4% with feed.
 - Proper adjustment spent eating
 - Preliminary
 - 50% of feed



Guidelines

- Workers may be exposed to H₂S concentrations that exceed acceptable limits when **pulling pit plugs** and **power-washing rooms**.
- Locations of peak H₂S concentrations vary





Take Home Messages

- On average, PSC research projects return \$4.10/hog back to producers
- Approximately 33% of all projects with economic return are considered easy to adopt
- PSC projects generate \$4.00 for every \$1.00 of industry contribution

Acknowledgements



ONTARIO PORK



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SASKATCHEWAN