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Key Indicators of Breeding Herd Productivity

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Ron Ketchum from Swine Management Services presented a seminar on the key indicators of breeding herd productivity at the Banff Pork Seminar in January 2016. Swine Management Services (SMS) farm benchmarking program uses data from 850+ farms ranging in size from 125 to 10,000 sow herds from Canada, China and the USA. To date, data collected represents over 1.5 million bred sows.

Benchmarking is defined as a standard or reference by which others can be measured or judged. SMS production data has been put into an index allowing for benchmarking and areas of production that can be improved. SMS production index features 11 key indicators of sow herd production improvement.

Table 1: SMS Farm Benchmarking

KEY INDICATOR	TOP 10%	Bottom 30%	Total Average
Pigs Weaned/ Mated female/year	30.76	21.56	25.56
Total Born/ Mated female/ year	36.95	29.25	33.15
Piglet Survival %	85.3	75.9	79.4
Litters/ Mated female/ year	2.48	2.21	2.37
Wean to First Service Interval	5.18	8.07	6.78
Farrowing Rate %	90.2	81.7	85.6
Female Death Loss %	5.6	9.2	8.2
Gilt Farrowing Rate %	89.5	80.2	84.1
Total Pigs Born / female (P1+P2+P3)	44.03	39.63	41.44
Total Pigs Born/ female (P1)	13.95	12.72	13.19
Female Retention %	65.4	63.5	65.4

The Top 10 % of farms do things differently to achieve higher number of piglets weaned per sow

per year. Some of their top management procedures are shared below.

Pigs weaned/mated female/year

Pigs weaned/sow/year is influenced by total pigs born and piglet survival. Farms achieving more pigs weaned/mated female/year will have better potential for increased profitability. Top 10% farms achieve an average of 30.76 pigs weaned/sow/year whereas the bottom 30% average 21.56.

Total born/mated female/year

The total born/sow/year is influenced by management and genetics. Top 10% farms achieve an average of 2.48 litters per year whereas the bottom 30% average 2.21.

- ✓ *Using F1 females will increase potential total born.*
- ✓ *Promoting optimum ovulation and heat expression increases potential litter size.*
- ✓ *Boar exposure should take place on day of weaning.*
- ✓ *Ad Lib feeding achieving 6.8kg average daily feed intake during lactation will lower wean to service interval.*
- ✓ *Increasing feed intake from weaning to breeding with a goal of at least 18.14kg over 5 days will increase total born.*

Top 10% farms achieve an average of 36.95 pigs born/sow/year whereas the bottom 30% average 29.25. Increasing number of litters a sow has per year will also increase total pigs born/sow/year. A lower wean to first service interval will increase number of litters.

Farrowing Rate%

Variations in farrowing rate are influenced by semen quality, sow potential and breeding personnel. Semen quality depends on extender dilution, storage and handling. Semen quality will also influence total born/mated female/year. Top 10% farms achieve an average farrowing rate of 90.2 whereas the bottom 30% average 81.7.

- ✓ *Monitor and record semen batch and storage conditions on farm.*

- ✓ *Refrigerator temperatures should not fluctuate more than 3 °F (1.6 °C) over 24 hours. Using a water bottle with a temperature recording device will give liquid storage temperatures over air temperature fluctuations. A temperature gun can achieve this as well.*
- ✓ *Semen refrigerator should be in a temperature controlled room to avoid a high of 70 °F (21 °C) and a low of 50 °F (10 °C).*
- ✓ *Semen should be rotated and flipped over daily on a tray in the refrigerator and used only on the day the bag is opened.*
- ✓ *Transferring semen to breeding area should be in a temperature controlled cooler.*
- ✓ *Breeding personnel need to be trained and have access to written SOP's. It has been shown that breeding personnel fatigue can set in after 20 breedings so planned number of breedings and breaks can help optimize farrowing rate.*
- ✓ *Each AI technician should have performance recorded and reviewed.*

Wean to First Service Interval

Top 10% farms achieve an average wean to first service interval of 5.18 days whereas the bottom 30% average 8.07 days.

- ✓ *Boar exposure should take place on day of weaning.*
- ✓ *Breed a weaned sow as soon as she is in heat. Start checking on day of weaning. Early heats can be missed. Do not skip a heat.*

Female Death Loss

Highest levels of death loss occur at P0 and P1. Death loss decreases as parity increases up to P6 with a sharp increase at P7. A decrease of 4% in a farms' sow mortality will increase the production by 1 pig weaned/sow/year. Top 10% farms achieve a sow death loss of 5.6% whereas bottom producers achieve a 9.2% loss.

Piglet Survival

SMS calculates % piglet survivability as 100% - (Stillborn % + Pre-weaning mortality %).

This indicates that a stillborn had a potential to be a viable piglet. Top 10% farms achieve an average

piglet survival of 85.3% whereas the bottom 30% average of 75.9%.

- ✓ *Increasing piglet survivability can be achieved by monitoring farrowings 18 hours a day with SOP's in place. A farrowing room attendant present from 5am to 10pm will allow for 88% monitored farrowings.*
- ✓ *A chilled farrowed piglet will not eat, therefore a warm dry environment is essential. This can be achieved by towel drying, supplementary heat or using drying agent.*
- ✓ *A SOP must be developed with veterinary input to address fall back pigs for days 2-8 post farrowing.*
- ✓ *Farms should target less than 0.5 stillborn piglets and less than 10% pre-weaning death loss.*
- ✓ *Increased colostrum intake directly influences piglet survival. Piglets ingesting 200g or more of colostrum have greatest chance of survival. Those ingesting 100g to 200g have a 33% higher mortality and those ingesting less 100g have a 67% higher mortality.*

In conclusion, SMS benchmarking has taken years of data from hundreds of farms to develop key indicators of breeding herd productivity. The top 10% producing farms have developed management programs to wean more pigs per sow on a regular basis.

Reviewing your own herd's performance and adopting some of these top management programs can increase your herd's productivity and profitability.

HOG UPDATE is published in the interest of helping hog producers become more profitable. We welcome your comments. Our newsletters are available on-line at www.bsccanimalnutrition.com

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