Mandate

The mission of Prairie Swine Centre Inc. is "*to provide a centre of excellence in research, education and technology transfer, all directed at efficient sustainable pork production in Canada.*" The research program, with a decidedly near market emphasis, seeks to improve the financial position of pork producers by defining feeding and management systems that maximize net income. In addition, the Centre carries out research to address issues and opportunities in environment and animal well-being.

Value of Research

The preceding list covers only the surface of research conducted at PSCI, including those items that generate an easily defined economic return to western Canadian pork producers. A producer operating a 600 sow operation would have invested approximately $27,000 into research at PSCI over the past eight years (13,500 pigs/yr x 8 yrs x $0.25/pig = $27,000). The direct, and very conservative return was shown to represent $18.45/pig, or $249,075 over this eight year period. For a producer based in Saskatchewan, incorporating 70 percent of the fore mentioned research results in more than a six-fold increase on their research check-off dollars.

Group housing system at PSC Elstow Research Farm

PSCI has and continues to conduct research that generates a direct benefit to the producer. These benefits are not limited to economic benefits only; rather they also occur in areas like human health, environmental sustainability and animal welfare. These types research benefits are very difficult to place a direct economic return on. Their benefits demonstrate the commitment to the long term sustainability of pork production in Canada.

Prairie Swine Centre's mission statement: "*To be a Centre of Excellence in Research, Technology Transfer and Education all directed at efficient, sustainable pork production in Canada*" demonstrates that PSCI is more than a research facility. It's an investment in the future of the pork industry in Western Canada.

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Research Profits Everyone

PRAIRIE SWINE CENTRE INC.

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Did you Know?

- There is more than 1 million dollars in research being conducted at any one time at PSCI
- Prairie Swine Centre operates the largest publicly funded facility in North America
- Sale of stock accounts for approximately 25% of the revenue generated at PSCI
- Industry provides approximately 40% of total *Research Revenues*, or 28% of total revenues
- Federal and Provincial sources account for approximately 44% of total *Research Revenues*

Introduction

Side view of the PSCI's research facilities located at Floral, SK

Over the years Prairie Swine Centre's near-market Research Program has focused on increasing the competitive advantage of Western Canadian pork producers, assisting them in becoming some of the most efficient producers in North America and indeed around the world. Research conducted at PSCI results in many direct benefits to pork producers through lower costs, higher productivity, and improved end product. Direct economic return, improved work environment (health), environmental sustainability and improved equipment design and function are just a few of the benefits that producers receive for their check off dollar. The following list provides a brief description and net benefit to those research projects that have increased the competitive efficiency of the western Canadian Pork Industry.

Management

Determine the ideal selling weight for your packer grid This requires monitoring feed intake and growth rate as pigs approach market weight and comparing changes in yield and index as market weights increase. Computer-based monitoring programs make monitoring easier. GrowthMaster Pig Performance Monitoring System and Grid Analysis Spreadsheet are two tools developed at PSCI to improve monitoring ease and accuracy.
Net Benefit: $3.00/pig.

Nutrition

Phase Feeding Phase feeding recognizes the fact that the nutrient requirements of pigs change as they mature; linking diet to pig nutrient needs is the best way to reduce the cost of feeding, while optimizing performance. The number of diets depends on the size of the farm. Selecting the nutrient content of these diets is critical to success, since underfeeding results in poor performance, while over feeding will increase feed costs unnecessarily.
Net Benefit: $1.50/pig


Metabolism crates designed by PSCI staff

Split-Sex Feeding Typically a gilt diet will contain about 7-10% higher levels of amino acids than a barrow diet. If you are not split-sex feeding means, barrows will be overfed, or gilts underfed, or a combination of the two. Research has shown that split-sexed feeding and phase feeding combined increases net income.
Net Benefit: $3.00/pig

Calcium/Phosphorus Levels Originally examined in Europe as a way to reduce the impact of pork production on the environment. This reduction in Ca and P levels was also observed to have no negative impact on performance. Research indicates overfeeding Ca and P increases the cost of production.
Net Benefit $1.50/pig

Use of Canola Meal Canola meal can be effectively incorporated into diets when they are formulated on available nutrients, and can be utilized at very high levels when incorporated into the diet gradually. Researchers have replaced all the soymeal with canola meal and achieved equal performance in the growout phase. Even a 50:50 blend of canola meal:soymeal can result in significant savings.
Net Benefit: $1.00/pig

Use of Field Peas The use of field peas in Canadian pig diets is rising rapidly. Experience has shown that pigs like peas, and depending on market conditions, substantial savings can be achieved. They are a local ingredient; they fit well into a crop rotation, and acreage is rising rapidly. Researchers at the Prairie Swine Centre have included field peas at up to 40% of the diet, and achieved performance equal to that on a conventional soybean meal-base diet.
Net Benefit: $2.50/pig

Evaluating Grain Quality Research has shown that bushel weight is a poor indicator of the feeding value of grain. Studies have shown that only 5-10% of the variation in energy can be explained by bushel weight. Studies have also shown that a 1% rise or fall in ADF results in a 93 Kcal fall or rise in DE of barley.
Net Benefit: $1.20/pig

Prairie Swine Centre's Nutrition Programs have generated approximately $10.70 / pig to Western Canadian pork producers.

Ethology

Wet/Dry Feeders Studies at PSCI found, on average, wet / dry feeders increased growth rate by 5% compared to dry feeders, resulting in 5 days earlier to market.
Net Benefit: $1.00/pig


Incorporating wet/dry feeders is one way to reduce the number of days to market

Set feeders to reduce feed wastage Feed wastage at 5% assuming average feed prices, costs the pork producer approximately $2.00 / pig sold. While eliminating feed wastage is impossible, Research at PSCI demonstrated that reducing feed wastage to under 3% or less is not an unreasonable expectation.
Net Benefit: $1.00/pig

Pre-sorting pigs by weight Research at PSCI demonstrated under all-in-all-out management, rooms of variable weight pens emptied faster than rooms of uniform weight pens. Sorting pigs by weight into pens at the beginning of growing-finishing is not advantageous, and can take up to 7 days longer to empty rooms in a all-in-all-out system
Net Benefit: $1.50/pig

7 out of 11 feeder manufacturers participating in a feeder evaluation study have incorporated changes in feeder design, because of the research conducted at PSCI.

Engineering

Do not keep the pigs too warm Elevated barn temperatures reduce feed intake and thus growth rate. For every 1^0C increase above the pig's thermonuetral zone, feed intake drops 1-2%, and growth rate drops about 3%. Thus, for every degree above the pig's thermonuetral zone net income is reduced.
Net Benefit: $0.50/pig

Reduced Nocturnal Temperatures During the summer months, air temperature within the barns should be no more than 3^0C above the outside temperature. Research at PSCI has found that by reducing the setpoint temperature 6^0C during hot weather, the barn becomes cooler at night, stimulating feed intake. The net result was an increased growth rate of 2-5%.
Net Benefit: $0.75/pig


Reducing temperature set-point can increase growth rate 2-5% during summer months

Note:
The above calculations are based on $.15/ per day cost a very conservative estimate that includes only feed cost of delayed marketing and no housing cost.