# Research Benefits the Pork Industry

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## Introduction

Perceived financial risks and rewards may limit technological action. In order to provide more detail on the economic impact of research, Prairie Swine Centre in conjunction with the George Morris Centre developed an analytical tool to help provide a more detailed analysis of the economic benefit of research conducted at Prairie Swine Centre.

This financial model has the ability to simulate the economic impact and change in cost and revenue structures, by applying Prairie Swine Centre research results to commercial farms of various sizes. To value the economic impact of research, a number of Prairie Swine Centre experiments between 1999-2004 were analyzed. In total 22 projects were selected for a detailed financial analysis, with the final result being the net benefit of specific research projects. Research projects were then prioritized in terms of net benefit per hog marketed and ease of adoption.

## Summary

Throughout the 1999-2004 time period, specific research projects generated a range of net financial benefit to pork producers from $0.11 - $8.84 per hog marketed. In addition, approximately 25% of the projects analyzed generated a net benefit of at least $2.00 per hog marketed, while an additional 25% of research projects generated a return in excess of $1.00 per hog marketed. The overall objective of such a analytical tool is quite simply to assist pork producers in identifying ways to minimize costs and maximize revenues through: 1) Identifying those technologies that can be applied on their operation, and 2) Prioritize their implementation in terms of ease of adoption.

*"If 10% of the benefit was to be adopted it would improve net return over $3.00 per hog marketed."*

## Research Results

In order to estimate the impact of research on different types of operations, 'default' farms of various size were developed based on industry data. It is very important to note there tends to be greater variability, in per hog costs and revenues, between similar sized operations than across different operation size. This is a function of different cost structures (example, related to age of facility), ability to adopt new technologies, and management styles. Table 1 provides a detailed economic evaluation for selected research projects. Average net returns for all projects varied from $0.14 to $6.23 per hog marketed, depending on specific research criteria. Net benefit of each project was calculated independently; there was no attempt to look at the additive or competing effect of multiple projects implemented simultaneously.

## Ease of Adoption

Pork producers in Canada are recognized as innovative, many could be classified as early adopters of new information. With this in mind, the 22 research projects were evaluated for their ease of adoption. Ease of adoption is defined in terms of the time, labour and capital required to implement

**Table 1.** Economic Return and Ease of Adoption for Selected Prairie Swine Centre Research Projects 2002-2004

| Research Project | $/Hog Marketed |
|---|---|
| Water Usage by Grower-Finisher Pigs Using Dry and Wet/Dry Feeders | $0.70 |
| Reducing Water Waste from Nipple Drinkers by Grower-Finisher Pigs | $0.14 |
| Nutritional Quality Among Wheat Classes Fed to Weaned Pigs | $1.08 |
| Impact of Feeder Adjustment and Group Size Pig Performance | $0.69 |
| The Effect of Ergot on the Performance of Weanlings | $6.23 |
| Effects of Nipple Drinker Height and Flow Rate on Water Wastage | $0.21 |
| Effect of Feed Presentation on the Feeding Behaviour of Finisher Pigs | $2.55 |
| Performance and Carcass Quality of Pigs Submitted to Reduced Nocturnal Temperatures | $1.03 |

the new research information on the commercial farm. Three classifications were created: Easy, Moderate and Difficult. We further describe "Easy" projects as those which can be implemented within 1-3 months, require little labour and little or no capital; "Moderate" can be implemented within 3-12 months, but still require little labour or capital; and "Difficult" projects require greater than 12 months to implement, and is either labour and/or capital intensive.

## Impact on the Industry

Using this three-level description we estimated the extent to which the industry would adopt the research results. Easy projects were estimated to be adopted by 80% of the industry. Moderate adoption projects were estimated to be adopted by 40% of the industry. Difficult projects were estimated to be adopted by 10% of the industry.

Table 1 summarizes the net returns of project that were considered easy to adopt. This provides an estimate of the value of Prairie Swine Centre research to the western Canadian pork industry. For example, "Nutritional Quality Among Wheat Classes", is easily adopted (by 80% of the industry), and provides a net return benefit of $1.08 per pig marketed, assuming the annual marketings of 10 million hogs in western Canada, the benefit annually to the industry for this one project is $8.64 million.

## Conclusion

Research pays big dividends. Applied near market research conducted at Prairie Swine Centre for the pork industry has and continues to provide significant benefit to pork producers and the entire pork industry. All pork producers will not be able to adopt all research results, in addition not all research projects are completely additive. Pork producers would still realize a significant improvement to their bottom line through the incorporation of any number of research results.

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