

by KEES DE LANGE

**P**ork research is aimed at generating new knowledge and improving understanding of key aspects of pork meat production and swine reproduction. This inevitably leads to improvements in commercial pork production practices in terms of profitability, pork meat quality and safety, environmental impacts and well-being of both pigs and people. In addition, through research and education, young people are trained to contribute directly or indirectly to the pork industry, and a critical mass of researchers is maintained to draw upon as problems arise.

Setting these general benefits aside, it is not easy to assess exactly the financial return on investment in pork research. There is always the risk that research findings within a specific project will be unfavourable and differ from anticipated outcomes. In the case of more fundamental research, the implications of research into commercial pork production practices are not directly apparent.

this is applied to carcass value and based on a bid price of \$1.30 per kilogram. This value is considerably higher if the in-store pork meat price is applied.

Research into genetic improvements in growth rates and back fat thickness translates every year into a 0.5 per cent rate of genetic improvement in feed efficiency in growing finishing pigs. Because these improvements are compounded annually, this means that research has improved feed efficiency by more than five per cent over the last 10 years, reducing feed costs per market pig by more than \$3.50.

Through extensive research on the utilization of energy, amino acid and phosphorus by growing pigs and assessment of the availability of these nutrients, we can more closely meet the nutrient requirements of starter and growing-finishing pigs. This means reduced feed costs, reduced nutrient losses into the environment and the ability to use a wider range of feed ingredients from a variety of sources.

# Investment in swine is mon

However, we must remember that fundamental research provides the basis for more applied research. For example, without the discovery of DNA by Watson and Crick in the 1960s, researchers at the University of Guelph and the University of Toronto would not have been able to identify the single gene that is responsible for porcine stress syndrome (PSS) and contributes to the development of pale, soft exudative pork.

Similarly, without the development of advanced mathematical procedures developed under the leadership of the late Dr. Brian Kennedy from the University of Guelph, rates of genetic progress in key pork production and reproductive traits would not be as large as they are today.

Moreover, some research is required simply to provide a scientific basis for current management practices or new rules and regulations. If this regulatory type of research is not conducted, our pork industry would be more vulnerable to societal issues and trade barriers that are often based more on emotion than solid science, or to external threats such as highly contagious diseases.

Based on experiences in the United Kingdom with foot-and-mouth disease and here in Canada with BSE in beef cattle, we have all become aware of the need to be well prepared to handle the severe consequences of disease outbreaks and international trade barriers.

There are many other specific and practical examples of the benefits of research. For example, a very modest one per cent reduction in drip loss from pig carcasses and meat due to elimination of the aforementioned PSS gene from the Canadian pig population represents \$1.30 per market pig, if

A very modest estimate of a two per cent reduction in feed costs of growing pigs from weaning to market weight represents a savings of \$1.50 per market pig.

In addition, research into better health management has reduced the need for anti-microbial agents, reduced pig mortality and boosted pig productivity. A very modest reduction in total production costs of one per cent due to these factors represents a savings of more than \$1.50 per pig.

Together, all of these savings provide astounding value for the investment of approximately \$0.20 per market pig that Ontario pork producers provide for research.

We can also turn to economists for an overall cost-benefit analysis of financial investment in pig and pork research. For example, in 2001 Dr. Glenn Fox from the University of Guelph, with his colleagues at Guelph and Agriculture and Agri-Food Canada, estimated the cost-benefit ratio of both public and private research that supports Canadian pork production to be very high: 22.4 to 1. This estimate is based on careful assessment of research support from various levels of government and the private sector, and the impact of research on production costs, consumer demand and prices.

These examinations of the financial benefits of research clearly provide strong incentives to pork producers and other funding agencies to continue to invest in pork and swine research – now and in the future.

Research has improved feed efficiency by more than five per cent over the last 10 years, reducing feed costs per market pig by more than \$3.50 – just one example of the dividends that flow from investment in applied research

research  
they well spent

*Kees de Lange*