Improving production efficiency and product differentiation: Critical parts of a Pork Re-vitalization Strategy

Respectively submitted by George Foxcroft, who takes personal responsibility for the views expressed.

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Two underlying messages were part of the discussion of the Pork Revitalization Strategy at the Alberta Pork AGM:

- A need to continually improve and benchmark production efficiency.
- The value of being able to produce and market a "differentiated" product.

If these are to become meaningful parts of the Alberta (Western Canada) Pork Revitalization Strategy, then the key questions become:

- Are these ideas technically possible?
- At what scale of integration in the pork value chain can these ideas be applied?
- Can these "values" be clearly benchmarked as part an expanded QC program?

Production efficiency: Improvements in production efficiency were "taken as a given" by all speakers who discussed the Pork Revitalization Strategy at the Alberta Pork AGM. Indeed, in a North American context greater production efficiency is nearly always conceded as being on of Canada's competitive advantages, even if we don't clearly benchmark this advantage for our customers. Larry Martin talked about efficiency being "more for less", which is certainly more achievable than trying to compete on a "least cost of production" basis. It is even arguable that "least cost" production will not be sustainable as welfare and environmental legislation spreads across the North America pork industry. Present trends suggest *that progressive steps to implement a "more for less" strategy are technically possible, are desirable, and can be clearly benchmarked*, even at a "meta" farm or production system level.

Efficiency benchmarks like ……

- total feed inputs (tonnes) per tonne of nursery pigs weaned from farrow-to-wean systems,
- and total sow feed inputs (tonnes) per tonne of pork product at nursery/grow-finish level,
- and total product produced per dose of semen used for breeding or AI

……. should increasingly replace metrics like herd replacement rate, farrowing rate, pigs weaned/sow/year and measures of pig mortality, as benchmarks of production efficiency.

What will allow us to achieve and benchmark a "more for less" strategy? The recent review commissioned from the George Morris Centre testified to the commitment in Alberta and Western Canada to support competitive R&D programs that have translated into measurable improvements in pork production efficiency. Aggressive adoption of the benefits of these R&D programs, and the benchmarking of the improvements achieved as part of an overall Pork Revitalization Strategy, is achievable and could already include:

- Optimized gestation and lactation sow nutrition.
- Optimized use of local and alternative feedstuffs.
- Adoption of segregated management systems (parity, litter, sex, etc).
- Adoption of advanced breeding technologies to optimize use of the highest indexed boars.
- Adoption of production technologies (internal genetic multiplication, off-site GDUs, parity segregated barns, batch farrowing, etc) that allow smaller producers, and existing large-scale production systems, to match genetic potential to production outcomes.

The challenge is to take our "perceived" advantages in production efficiency and turn these into measurable parts of an overall pork QC program.

Differentiating product and process: All of the strategies discussed above produce improvements in both *production efficiency* and *product quality*, and both these attributes can be used to differentiate the pork production systems in Alberta and Western Canada from those of our global competitors. Other systems are already adopting "made in Alberta" solutions to improve pork production efficiency. However, few have the advantages of relatively stable and high health status in their production herds, the chance to implement regional biosecurity in an effective manner, and the opportunity put some of the best genetics into a differentiated, high quality, production environment.

Integration of many of these technical components into a production value chain has been applied at different levels of the industry and inevitably aims to create a close link between "integration" and "differentiation". If the integrated system involves processing and marketing capabilities, then the value of differentiated production chain is already contributing to the success of the overall operation. In other instances, the ability to contract with a premium possessor is dependent on the ability to deliver a high percentage of animals for processing that meet the differentiated market requirements. More flexible contractual and cooperative ventures then become possible. However, *many of these production strategies provide direct benefit to the primary producer* in terms of improved production efficiency, and would already make a valuable contribution to an overall Pork Revitalization Strategy.

What opportunities exist in the future? As the food-animal industry moves rapidly into the "genomic era", an immediate goal is to use this new technology to understand and control multi-gene traits and the complex interactions between genes and the environment (the GxE interaction). The Alberta R&D community is at the forefront of the discussion about how to apply "functional genomics" to immediate improvements in beef and pork production. Alberta is also poised to become a major Canadian centre for developing functional genomic tools directly targeted at improved livestock production. The leading genetics companies in the pork industry are supporting these initiatives and will aim to refine their seed-stock production to meet the needs of the evolving industry. If the Pork Revitalization Strategy is able to set clear objectives for what is needed, this next phase of

genomic R&D will clearly respond to this vision. If the vision for Alberta and Western Canada were to achieve a unique position by targeting a GxE outcome that insures…….

- High and stable health status, and a system of regional biosecurity,
- a regional focus on production of high quality grain-fed pork,
- "World-best" benchmarks of production efficiency,

…….. it is reasonable to think that the goals of genetic companies and technology providers to the pork industry will align with this vision. If our competition seeks to optimize production from animals whose major merits are resistance to disease, and the ability to withstand more challenging production environments, then that vision may also become a key focus for seed-stock producers.

In summary: We have the technology and the opportunity to move ahead of most of our competition in evolving a highly technical, differentiated, system of pork production. The key components of these systems can be adequately benchmarked. These benchmarks can then be used to support a competitive position in the global pork marketplace. Although many of these advantages can be achieved today in production systems, a regional vision for high quality pork production could drive adoption of new technologies, and direct future R&D to support an Alberta and Western Canadian production advantage.