High Hopes for Hi-Tech Pork Research

By Geoff Geddes, for Swine Innovation Porc

A century ago, “hi-tech” in the pork industry meant sending your feed order by telegraph. Today, cutting edge ideas are more than just food for thought; they’re essential to keeping the industry profitable at home and competitive on the world stage. As a prime example, certain economically important traits, such as growth, feed efficiency, welfare and carcass quality, are difficult or expensive to measure in pig farms and slaughter plants. Fortunately, recent technological developments have provided new opportunities to collect information on live pigs and carcasses.

Through nine different sub-projects under the umbrella of “novel technologies,” researchers sought to validate some of the new scientific applications available to provide objective indicators of performance, welfare and carcass value.

Ready or not?

“To choose the nine projects, we looked for a combination of the readiness of the technology and its potential application for the industry,” said Brian Sullivan, Chief Executive Officer at the Canadian Centre for Swine Improvement (CCSI) in Ottawa.

The studies included everything from identifying sick pigs with infrared cameras to using 3-D vision systems for assessing carcass quality. It was a huge undertaking, but those behind it are pleased with the results.

“This project was very successful at bringing researchers and industry together and deciding how best to apply technology in addressing industry needs and opportunities,” said Sullivan.

While some of the innovations are ready for commercial testing, others require more research. In all cases, though, the research has told industry more about what’s out there and what could be applied in the near future. Even where the results fell short of expectations, there were some valuable takeaways.

Knowledge is powerful

“Knowing that something isn’t going to work is important as it gets you one step closer to what WILL work. That way, people aren’t wasting time, money and effort chasing a tool that was shown to have limitations.”

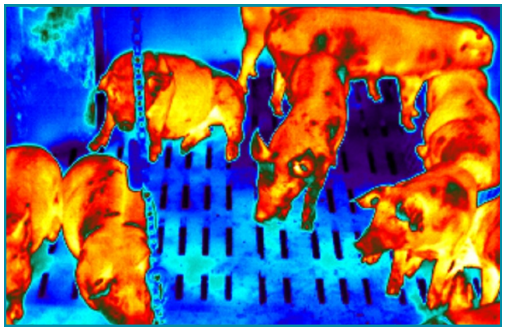


Image captured by infrared camera. Photo: CCSI

Portable 3D scanner. Photo: AAFC

As Sullivan pointed out, a lot of the project's success is due to Swine Innovation Porc. In addition to providing funding under the science cluster, they organized regular meetings where researchers and industry came together to share knowledge and ideas.

Given the planning that went into the project, it's little wonder that so much came out of it.

"The response from industry has been very positive. There's great interest in trying these technologies, whether with live animals or in the plant. In fact, commercial testing is underway at Prairie Swine Centre on two of the technologies that could offer numerous benefits for producers."

One of those new tools is the individual water recording system, which may have implications for feed intake, growth performance, carcass quality and health status. Then there's infrared thermography to estimate pig body temperature and measure feed efficiency.

"Both of these developments can impact pig health and welfare. Changes in water intake and body temperature can be early indicators of a health issue or stress in the barn, so by detecting problems before symptoms even appear, we can react faster and deal with these concerns more effectively."

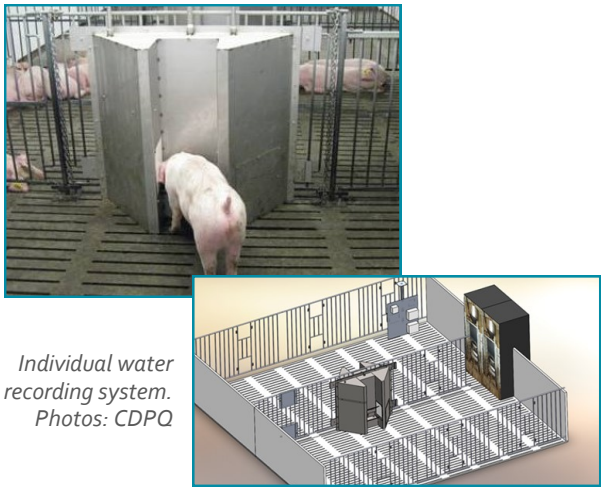
Quality counts

Once those pigs are sent to slaughter, the subprojects dealing with evaluation of carcass and meat quality come into play, helping packers get more value out of carcasses and letting them better process and market the hogs.

One of the most interesting aspects of this research is the linking of information on carcasses to the condition of live pigs.

"By examining bruising activity on the carcass, we can determine where in the life cycle of the pig that bruising occurred. Was it in the barn, during loading or transport, or while waiting at the plant? Knowing when injuries happened can help us prevent them in the future through proper management."

So no disrespect to the telegraph, but by applying novel technologies to benefit producers, pigs and processors, research is taking "hi-tech" to a whole new level.



Individual water recording system. Photos: CDPQ

For more information….

Contact Brian Sullivan at brian@ccsi.ca for more details about the project *Use of novel technologies to optimize pig performance, welfare and carcass value*.

You may find additional resources related to the project by consulting our website:

http://www.swineinnovationporc.ca/research-technology.php

Publication of this article has been made possible by Swine Innovation Porc within the Swine Cluster 2: Driving Results Through Innovation research program. Funding is provided by Agriculture and Agri-Food Canada's AgriInnovation Program and by provincial producer organizations.