

Better pork



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Welcomes New Tech

SMART TECHNOLOGY MAY LEAVE YOU DUMBSTRUCK

Chris Youck Photography



The swine industry continues to innovate and adopt new tech, which helps to streamline production, at an almost dizzying speed.

by GEOFF GEDDES

As night descends on the barn, a high-pitched squeal pierces the silence. Panic-stricken, a worker makes a frantic dash to the farrowing room. The noise is one he knows only too well: the sound of a life draining away from another crushed piglet. Barging through the door, the worker grits his teeth, sucks up his courage and peers into the pen to find the poor, defenceless animal ... fast asleep.

In the time it took a staff member to hear that plaintive cry and respond, a sensor has detected the problem, sent a warning signal to the sow and saved a life. While the story might sound like science fiction, this technology is real and getting better. It's making history at every turn and helping the pork industry boldly go where no pig has gone before.

In the age of smartphones and smart homes, we are surrounded by computer wizardry. The pork industry stands out as an embodiment of this brave new world.

A rewarding experience

"Pork producers have always been early adopters of innovation, so it's only fitting that their industry is reaping the rewards of these (technological) advances," says Tom Stein, senior strategic adviser at Maximus Systems in Quebec.

As technology evolved, Stein has had a front row seat. In the 1980s, his team developed PigCHAMP software, a swine production management program. (PigCHAMP is now a Farms.com company, as is *Better Pork*.) In 2000, Stein co-founded MetaFarms Inc., which aimed to develop a web-based software platform for animal production that met the needs of all species.

"At the time of MetaFarms, people were concerned that producers wouldn't buy into the new technology, but that wasn't the case. For example, in the early days, we just had mechanical control for things like temperature and humidity," he says.

"That has since evolved to modular computerized

control of ventilation, biosecurity and workflow. We can track standby generator fuel levels and load cells on feed bins and have real-time measurement of feed inventory and consumption."

With the advent of the iPhone and cloud technology, new avenues of mobile applications and communication have emerged, and pork producers continue to lead the way. The costs – like the costs of other technologies – are coming down, enabling smaller producers to adopt the same technology that their larger counterparts have.

The brains of the operation

"Now that we're carrying around these brains with the smartphone in our hand, the next big advancement is a brain in the barn. It pulls together all this information on environment, health, mortality, processing and feed. And the list goes on," Stein says.

Apart from the "cool" factor, smart technology also brings significant benefits to producers and their animals. As a consultant, Stein has advised inventors about a device that hangs on farrowing crates and detects the unique sound a piglet makes when it's being crushed by the sow. The device transmits vibrations to a patch on the sow, causing it to stand and spare its baby.

"Early installations in pork production systems show large reductions in crushing deaths and pre-wean mortality, in the neighborhood of 0.5 to 1.0 piglet saved per litter," he says.

SoundTalks NV, a Belgian company, is also making wise use of smart technology. The company's cough monitor, which will soon be introduced in North America, can detect an increase in coughing levels in a barn. Sometimes, the device can even identify the type of cough, giving pork producers a heads-up about disease, and a head start on treatment and prevention.

When looking at what is, or could be, affected by smart technology, we should also consider the



Producers can monitor their operations from the farm office. In this set-up, the farmer has the Maximus barn view on the left screen and the dashboard on the right.

question of what is not affected. The answer appears to be simple: not much.

"Our company has controls that can optimize the operation of heat lamps and fans, saving money and reducing our carbon footprint," Stein says.

"Then there is the area of labour, one of the biggest bottlenecks in pork production. Industry is under great pressure to devise ways of using people more efficiently, and we can employ the new technology to increase the number of pigs one person can manage."

Smart tech fan club

As more producers are discovering, the benefits are not just theoretical. They are making noticeable differences in day-to-day operations. The Lakeside Colony near Lethbridge, Alta., installed the Maximus controller system last year, and staff already see it as a game changer for their hog business.

"The system uses humidity and

pressure sensors to maximize fan efficiency," says Phillip Wipf, who works the pig barns with his brother Mark.

"When the animals go to sleep, they do it as a group, which brings the humidity down to zero. The problem

is that we don't know when that will happen, but the sensor system detects the change and only moves air when it's required."

If fans or heaters malfunction, the technology recognizes that issue too. The system sends a text message to



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Phillip or Mark so they can fix the problem immediately.

Of course, for smart technology to really be relevant, it must also address the biggest line item on any producer's budget: feed costs.

"One way to lower feed expenses is to improve nutrient efficiency, or the amount of protein you must feed pigs to give them 1 kilogram (2.2 pounds) of body protein," says Dr. Candido Pomar, a research scientist at Agriculture and Agri-Food Canada.

"One of our projects is looking at formulating different feed ratios for pigs with different nutrient requirements," he explains.

When a pig enters the feeder, a computer determines how much that animal has been eating and growing. Each day, the system calculates the optimal protein concentration for the animal to maintain its growth rate and dispenses the feed accordingly.

The feeder "works automatically, so a farmer just has to be sure it is stocked, and the computer does the rest," says Pomar.

Incentive to succeed

Though smart systems offer ease of use, some producers may find the prices steep. Fortunately, programs are available to help mitigate the expense.

"We have a pair of programs geared toward industrial and commercial customers to help them optimize energy use," says Joel Cherry, spokesperson for SaskPower. "For large-scale producers, the

Industrial Energy Optimization Program provides customized technical assistance to identify and implement energy management and capital projects. It can also include incentives to reduce the investment payback period on projects."

Smaller Saskatchewan producers may qualify for the Commercial Energy Optimization Program. It helps them create plans to improve efficiencies and save money, and

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