

How do you decide whether to adopt new technology? Incorporating health and safety in the decision-making process

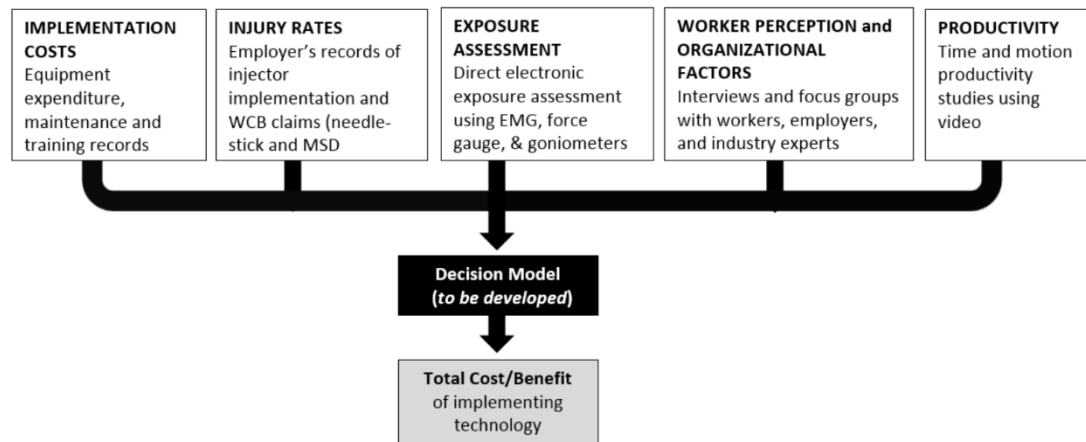


Canadian pork production has made a tremendous transition from smaller family farms into large-scale high-production barns. This transition has spurred several process changes and technological advancements throughout the Pork Value Chain. So let's say you are presented with a new technology, tool, or method to help production. How do you decide if it is going to have a net benefit to your business?

There are a lot of things to consider: implementation and maintenance costs, productivity impacts, worker and manager preferences, food safety and animal handling regulations. Worker health and safety is another consideration that can impact the bottom line. For example, if a new tool increases risk factors for injury, injury and work loss may require overtime or recruiting and training replacement workers to make up for absenteeism. Although technological innovations may have an impact on worker health and safety, these impacts (whether positive or negative) can be difficult to quantify and integrate with business decisions.

To address this, the Prairie Swine Centre is collaborating with the Canadian Centre for Health and Safety in Agriculture at the University of Saskatchewan to evaluate the health and safety effects of new technologies. This will help producers decide if they want to adopt a new technology. The goal of this project is to develop a suite of performance measures (a 'toolkit') which can be applied to decision-making about to new technologies. The specific technology we are investigating in this study is needle-less injectors, and we are comparing them with conventional needle injectors in a comprehensive evaluation that attempts to incorporate all the decision-making factors.

This last summer we conducted ergonomic evaluations at the Prairie Swine Centre during nursery pig injections and piglet processing. More than 650 injections were assessed using electromyography (EMG) to measure muscle activation and forces in the hand and wrist, as well as a posture sensor glove which records finger, hand, and wrist position during injection tasks. Processing is currently underway to determine muscle force and hand/wrist posture for each injection method. The study is still ongoing. This year we will conduct interviews on worker preferences, compare injury rates before and after the adoption of the needle-less injector, and evaluate the cost of each method.



For more information on this and other ergonomics studies, check out the Ergonomics Lab website of the Canadian Centre for Health and Safety in Agriculture : <http://research-groups.usask.ca/ergolab/index.php>