



NEEDLE FREE INJECTIONS SHOW PROMISE

Manitoba research gives fresh look at intriguing technology

When researchers study emerging technology they want to know how well it meets industry needs and whether producers will get value from it.

Manitoba researchers studying needle free injections for beef cattle got a clear look at the potential benefits of the technology. But they also raised questions that may require further investigation.

Needle free injections are both old and new. The technology has been around for years and was used in humans in the 40s, says Kim Ominski, the University of Manitoba researcher who headed up the study team. Today, it is used quite widely in the swine industry.

In livestock a needle free injection device (NFID) uses pressure to drive vaccine through the hide into subcutaneous or muscle tissue. Pressure on the nozzle triggers the injection as it reaches the hide. There are several brands on the market around the world.

INJECTION COMPARISONS

Ominski's research studies focused on two areas. Could needle free technology generate an immune response in beef calves? Was the technology easy to handle and cold tolerant?

Studies showed no significant difference in immune response between the NFID administered product and the conventional needle delivery. And the delivery system worked in cold weather.

"Needle free vaccination techniques offer a number of potential advantages," says Ominski. "Many of the concerns of needle vaccination techniques are eliminated. That includes the risk of broken needles in meat and the risk of needle-stick injuries.

"Needle free injections may also reduce risk of transferring disease through blood on needles. There is some conflicting research on that issue, so more study may be needed."

One question raised in her research was a reaction in some animals at the injection site, she says. "On one hand, that's a good thing in that we are trying to generate an immune response. But we would want to do further studies to ensure that they do not persist until slaughter."

INDUSTRY ACCEPTANCE

Whenever Ominski demonstrated this equipment at meetings, beef producers seemed intrigued with the technology. "They were eager to try it out and had many questions and comments," she says.



Needle-less injection equipment may be viable for low-dose vaccine delivery.

Cold weather handling. Researchers used a backpack and fed the injection line down through the sleeve of the handler's winter coat. There were no issues, says Ominski.

Cost. These products are just emerging in the marketplace and costs are significant, ranging from \$2,500 to \$5,000.

Formulation, dosage and application. The needle free system does not require different product formulation. However, the unit tested administered only one product at a time. And limited dosage means the technology is not suitable for higher dose products such as antibiotics.

A PRODUCER'S RESPONSE

Mitch Rey, a beef producer and masters student who was involved as part of the research team, says the technology is more complex so does require maintenance and some training to use.

He suspects it could be a challenge for cow-calf producers who may only use it four times a year at a maximum. But he believes feedlots, which handle larger volumes, often indoors, would likely consider the equipment easy to use and maintain.

DEVELOPED BY PRODUCERS. DEVELOPED FOR CONSUMERS

One implant. That's it. You're done!

Avoid the inconvenience and stress of re-implanting.

Do it right. Do it once.

For more information, talk to your veterinarian or call our technical service at 1-866-683-7838.