



Will needles soon be a thing of the past?

By Natalie Knudsen (7/1/2006)

Many pork producers today argue that there is no incentive for them to make the economic and management commitment necessary to implement needle-free injection into their production systems.

Maybe they're right -- but how much negative fallout will result from one customer at one fast food outlet finding one broken needle in a pork product?

"The financial incentive for many pork producers to switch to needle-free injection is not clear today," says Scanlon Daniels, DVM, MBA, Circle H Animal Health, LLC, located in Dalhart, Texas. "But rapidly increasing traceability will bring accountability to the producer sooner rather than later," emphasizes Daniels.

Looking to the future, one major pork production company, Seaboard Foods, has made the business decision to eliminate all conventional injections throughout their production system. "We are committed to moving our system completely needle-free by the end of 2006," states Luc Dufresne, DVM, Dipl. ABVP, director of health assurance for Seaboard Foods.

Challenges

Two of the biggest challenges to switching systems right now are cost and employee training. "It takes some training for employees to operate the units correctly, and there are maintenance needs to consider," points out Daniels.

Dedicating one person to properly train employees on the proper use, cleaning and basic maintenance of the needle-free machine has been proven successful initially at Seaboard Foods. "A vaccination crew is the easiest way to implement large-scale usage of the needle-free technology," explains Dufresne. "This way, training is limited to a few individuals and those individuals gain experience quickly by giving a lot of injections."

Sow farms are one of the easiest places to implement needle-free systems due to the number of sows and piglets injected daily by a limited number of employees. Finishing systems, on the other hand, create a unique challenge on three levels: One, there are more employees to be trained; two, they represent the greatest risk for broken needles; and three, they tend to be more geographically dispersed.

Benefits

Studies to date have shown that needle-free injection provides 'comparable efficacy' with traditional injection programs," notes Daniels. "However, because of the nature of the injection, needle-free vaccination may stimulate a better immune response in the pig."

A stronger immune response is attributed to the delivery system. Needle-free injection places some vaccine product in the skin where it is picked up by the dendritic cells -- specialized and efficient at presenting antigens to other cells of the immune system.

Dufresne points out several additional benefits. "It does offer better distribution of the vaccine through the tissues, but just as importantly there is less flow back of vaccine from the injection site meaning the pig is receiving the full vaccine dose. Needle-free injection also reduces the possibility of transmitting disease from one animal to another by eliminating blood transfer on a needle."

While pigs can't yet talk, Daniels believes that the reduced vocalization during the injection process translates into less pain and a more welfare friendly process for the pig.



Needles might become a thing of the past in the pork industry as a result of increasing identification and traceability requirements.

Which system?

Needle-free systems have come a long way since the early prototypes of five years ago. Depending on the model, they now handle all types of vaccines, injectable iron and even suspensions such as procaine penicillin.

“Being an early adapter of the technology, it has been essential that we share the constructive criticism and feedback from our employees with our supplier to improve the machine and make it more effective and user-friendly,” stresses Dufresne.

There are two types of systems currently available -- compressed gas powered and electric. “From a handling standpoint, the battery-powered units seem more intuitive to operate and may offer logistical advantages in low throughput applications,” explains Daniels. “However, the models powered with compressed gas have seen wider adoption in vaccination crew settings.”

When evaluating a needle-free product it all comes down to what works best in each individual production system based on costs and logistics.

With the high cost of needle-free injection units, approximately \$2,000 to \$3,000, leasing programs may be available. Farms with similar health status may look at sharing needle-free units much the same way they handle other big-ticket items, such as ultrasound machines, suggests Daniels.

Another management issue can be a CO2 distribution plan. “A well-organized production system should not have a problem getting CO2 from a central location to its farms,” notes Daniels. “It’s just another supply to consider.”

Switching to a needle-free injection system also requires a management commitment of both time and money. Not only that, it takes a little research to find the best device for each production system. “It’s certainly not a case of one size fits all,” stresses Daniels.

Editor’s note: The author is a Minnesota freelance writer who has been a frequent contributor to Swine Practitioner.



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Implementing a needle-free injection program

Let’s face it change is always stressful whether it’s a new job, a move or a new operating protocol such as a needle-free injection system. Keeping yourself and employees informed and trained on a new system goes a long way toward ensuring its success.

For those hesitant about implementing a needle-free injection protocol, Luc Dufresne, DVM, Dipl. ABVP, director of health assurance for Seaboard Foods, emphasizes that such a system can offer advantages for employees, pigs and the company.

“In our company, using a dedicated trainer allows us to keep the training process fairly short while still being comprehensive,” explains Dufresne. “In about a week, employees are very comfortable with the machine, its operation and maintenance.”

As swine veterinarian Scanlon Dainels, DVM, MBA, Circle H Animal Health, LLC, Dalhart, Texas, points out, “Operators should be less prone to repetitive motion injuries when needle-free systems are compared to conventional syringe/needle systems.”

Dufresne agrees. “We see major benefits in improved employee safety both in terms of repetitive motion injuries and needle-stick injuries.”