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# Swine influenza: Where do we go from here?

Lisa Becton

Premium Standard Farms

Swine influenza has created a challenge for many in the swine industry. Problems arise when the strains of influenza present on the farm do not react to products available on the market. Equally frustrating is lack of rapid diagnostic tests able to 'cross-match' different influenza strains.

Outlined below is a summary of our experience with swine influenza in our herds over the last 2 years and the steps we have taken to overcome this problem. I would love to be able to say that we have influenza 'licked,' but unfortunately this seems to be an ongoing surveillance project—and where it will end is anyone's guess.

- Past history prior to 2002: limited sow herds and replacement gilts were vaccinated with a commercially available monovalent influenza vaccine at 3 and 6 weeks pre-farrow.
- June 2002: Started to see an increase in GF death loss over and above current levels. Initiated diagnostic plan and identified as H3N2. At the same time, diagnosed influenza in nurseries that serviced the problem grow/finish sites.
- June 24, 2002: Initiated a more aggressive sow vaccination protocol that included all sow units and was a bivalent vaccine (H3N2 and H1N1).
- July 2002: Continued to collect and submit samples for influenza identification when vaccination seemed to have no effect. Traditional serology showed that influenza was *not* a factor at this target site. Tissue samples from acutely infected animals were submitted for virus isolation and subsequent diagnosis of influenza.
- Fall 2002: Worked with UMN in a cooperative effort to cross-match our 'flu.' Sequenced the influenza for further analysis and evaluation. Result: the "new" strain of H3N2 did not cross-match with known vaccine.
- November 2002: Partnered with a company to create an autogenous vaccine for H3N2 that contained our strain.
- December 2002: Vaccinations of grow/finish animals and sows commenced late December 2002 with the H3N2 autogenous product.

- April 2003: Identified and isolated an atypical H1N1 virus from commercial grow/finish hogs exhibiting classical signs of flu (cough; fever; lethargy; dyspnea)
- May 2003: Initiated a new batch of autogenous vaccine to include the H1 and H3 influenza strains
- May 2003: Discontinued the use of influenza vaccine within the adult sow herd. Continued to give replacement boars and gilts vaccine as well as nursery and grow/finish pigs
- June 26, 2003: Vaccination of nursery and grow/finish hogs started in the end of June and beginning of July 2003

No new isolates have been identified to date

## Future plans for influenza control?

- aggressive surveillance and tissue submissions for coughing or lethargic animals;
- aggressive in changing the make-up of the autogenous vaccine to accommodate the changes on-farm;
- continuously test vaccine as it is given to avoid maternal antibody interference; and,
- target animals for vaccination:
  - grow/finish,
  - nursery,
  - replacement gilts/boars.

Swine influenza presents a unique challenge to today's swine veterinarians and producers. Unfortunately there is no "one size fits all" approach for the prevention of influenza in a herd. Efforts must be made to match the on-farm strain with the best available vaccine or to create an autogenous vaccine in order to maximize the effectiveness of the control program. Where will this lead? The future is uncertain, but we must use our skills as diagnosticians to determine the best course of action in each individual situation.

