



**Technical Bulletin # 003**  
**Pulse 200 Effective Application Method for Sow Vaccines**  
**September 17, 2002; by; David L. Cook, Ph.D.**

**Objective:** The Pulse 200 is the first needle- free method for administering swine vaccines. In these studies Maxivac Flu and Swine Influenza Vaccine (Schering Plough) was injected in gestating sows using the Pulse 200 and the immunologic response was compared to sows given the same vaccine with convention needle and syringe. In a second study Farrowsure (Pfizer) was injected into early post partum sows using the Pulse 200 and the immunologic response was compared to early post partum sows given the same vaccine with conventional needle and syringe.

**Materials and Methods:**

**Study 1**

Evaluation using SIV (Maxivac Flu and Swine Influenza Vaccine – Schering Plough)

1. 2 treatment groups – ½ Needleless and ½ Syringe & Needle (N= approximately 320)
2. Treatment assignments random and balanced for parity
3. 2 sera collection points – day 0 and day 21 (3 weeks post vac) (N=30)
4. Sera tested using H<sub>3</sub>N<sub>2</sub> HI test @ ISU submitted as a group
5. Estimated variance = 0.74; 1.0 difference; P = 0.1; N = 30

**Study 2**

Evaluation using Farrowsure (Pfizer)

1. 2 treatment groups – ½ Needleless and ½ Syringe & Needle (N= approximately 60)
2. Treatment assignments random and balanced for parity
3. 2 sera collection points – day 0 and day 21 (3 weeks post vac) (N=30)
4. Sera tested using Parvo HI test @ ISU submitted as a group
5. Estimated variance = 0.74; 1.0 difference; P = 0.1; N = 30

**Results and Discussion:**

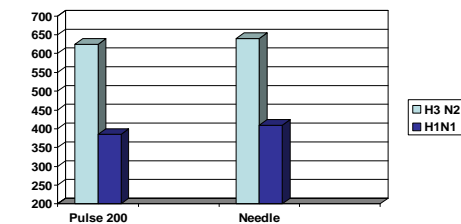
## Study 1

Day 21 post-vaccination H1N1 mean titers for sows injected with Maxivac Flu and Swine Influenza Vaccine were 385 and 408 (Figure1) for sows injected with the Pulse 200 and needle and syringe respectively and did not differ statistically between treatment groups. Day 21 post-vaccination H3N2 mean titers for sows injected with Maxivac Flu and Swine Influenza Vaccine were 625 and 640 (Figure1) for sows injected with the Pulse 200 and needle and syringe respectively and did not differ statistically between treatment groups.

## Study 2

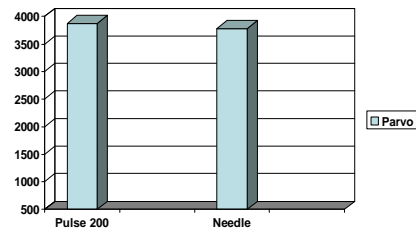
Day 21 post-vaccination parvo mean titers for sows injected with Farrowsure were 969 and 942 (Figure2) for sows injected with the Pulse 200 and needle and syringe respectively and did not differ statistically between treatment groups.

**Figure 1; H1N1 and H3N2 titers for sows injected with Maxivac flu and Swine influenza through the Pulse 200 and needle and syringe**



Maxiflu Swine Influenza  
Post Vaccination Titers

**Figure 2; Parvo titers for sows injected with Farrowsure through the Pulse 200 or needle and syringe**



Parvo Post Vaccination Titers

## Summary:

1. When a combination vaccine of Maxivac Flu and Swine Influenza vaccine was administered to gestating sows, the sows injected with the Pulse 200 demonstrated a comparable immunologic response to both vaccines to those given the same vaccines through needle and syringe.
2. When Farrowsure was administered to early post partum sows, the sows injected with the Pulse 200 demonstrated comparable immunologic response to those given the same vaccine with needle and syringe.
3. There were no visible injection site lesions in either study at the 21 day post-vaccination bleeding time.
4. The Pulse 200 is clearly an effective administration tool for sow gestating and early postpartum vaccination programs.