Preliminary Control Study Evaluating Efficacy of EpiCare **SwineAid™** in the Wound Healing of Shoulder Sores on Sows

By Dr. Roy A. Schultz, DVM, MS

February 6, 2006

- Collaborating Professor - Swine Health Management at Iowa State University
- Researcher - Veterinary Medical Research Institute at Iowa State University
- Past President - American Assoc. of Swine Practitioners
- Former Professor - University of Illinois in the IFAMS (Integrated Food Animal Management Systems)

Awards and Commendations:
- "Swine Practitioner of the Year"
- "The Howard Dunne Award"
- The Al Leman "Science in Practice" Award
- The SOLVEC "Swine Practitioner of the Year"
- Recognized as "One of the 50 People Who Shaped the Swine Industry" by National Hog Farmer

Introduction

Shoulder sores, a pressure necrosis of the muscles supporting the scapula or shoulder, are a common occurrence in lactating sows, and are accentuated by hot weather and lower feed intakes. While the focus should be on preventing these sores by improving lactation feed intake, sow condition and environmental conditions, we nonetheless often find ourselves confronted with the problem. The shoulder sores most often appear in the 2nd and 3rd week of lactation in good milking sows where hot weather has limited their feed intake. The pressure sores become a "welfare issue" and the sows must be treated to prevent further damage. Treatment routinely has been focused on traditional astringents and healing agents such as scarlet oil (a mineral oil-isopropyl alcohol topical product), Blu-Kote (a gentian violet-based antiseptic, Naylor Co., Inc. Morris, NY), or Koppertox (copper napthenate 37.5%, Ft. Dodge Animal Health, Ft. Dodge, IA) which often "treat the caretaker" by making him feel he has done something to address the pressure necrosis. Another option is now available with the introduction of a new product, SwineAid (Epicare Ltd, New York City, NY). SwineAid contains arginine aminobenzoate in a neutral cream emulsion of several natural oils, used effectively in human medicine for pressure sores as well as in burn patients. This study was conducted to compare the healing effect of the arginine aminobenzoate product with traditional products used for the treatment of shoulder sores.

Materials and Methods

The study was conducted in the fall of 2005 with 3 swine operations located in 3 different midwest U.S. states. To minimize room and animal effect, 2 sows with developing shoulder sores were randomly selected per farrowing room. The arginine aminobenzoate product was applied daily to the right shoulder of the first sow and the left shoulder of the second sow. The traditional treatment (Blu-Kote at 2 of the sites, and scarlet oil at the 3rd site) was used daily on the left shoulder of the first sow, and right shoulder of the second sow. To facilitate treatment, the arginine aminobenzoate treatment area was circled with orange chalk, and the traditional treatment area circled with green chalk. Digital photos were taken at the initiation of treatment, and at weaning when treatment ended. This process was continued until 30 sows had been treated and evaluated per location. The sow shoulder sores were scored at treatment termination (weaning) on a scale of 1 to 4 (l=no change in lesion, 2=slight healing of lesion, 3=moderate healing of lesion, 4=nearly complete or complete healing of lesion) by comparing the lesion at the beginning and end of the treatment period. The sow was the experimental unit and the treatments were statistically compared.

Results

The experimental product, SwineAid, appeared to be superior to traditional products in aiding in the healing process. Most of the lesions to which SwineAid was applied healed within 1 week. When compared to the traditional products, the SwineAid had an advantage of greater than 1 unit on our lesion scoring system ($P<.05$)

Discussion

Researchers at the University of Nebraska conducted a literature search to determine the risk factors involved in sow shoulder sores (1). These risk factors included:

- Prolonged recumbence during parturition
- Reduced activity in late gestation and early lactation
- Post-farrowing illness
- Sows that are too thin
- Sows that are too heavy
- Increased parity
- Moist skin
- Duration of farrowing
- Source of replacement gilts
- Confinement sow housing
- Two vs. one caretaker in the farrowing area

It would be advantageous to address the above risk factors to prevent the problem or to use other preventive methods such as one described by Danish and University of Minnesota scientists which involves taping a foam pad to the shoulder (1,2).

Once the problem has started, prompt treatment must be initiated to relieve pain and suffering, as well as to prevent the sore from becoming a "welfare issue". When applied to developing shoulder sores in sows, SwineAid was more effective than traditional treatments in promoting the healing process. The current study was conducted during the cooler months in the United States, when sow shoulder sores are less prevalent. Further trials are planned for the hotter summer months when sow shoulder sores are more frequent.

References

1. Reese, D.E. et al. (2005). Nebraska Swine Report, 6-9.
2. Schafer, N.R. et al. (2005). Leman Swine Conference poster presentation.