

Barrier wound spray with pain relief for the health and welfare of baby pigs

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Introduction

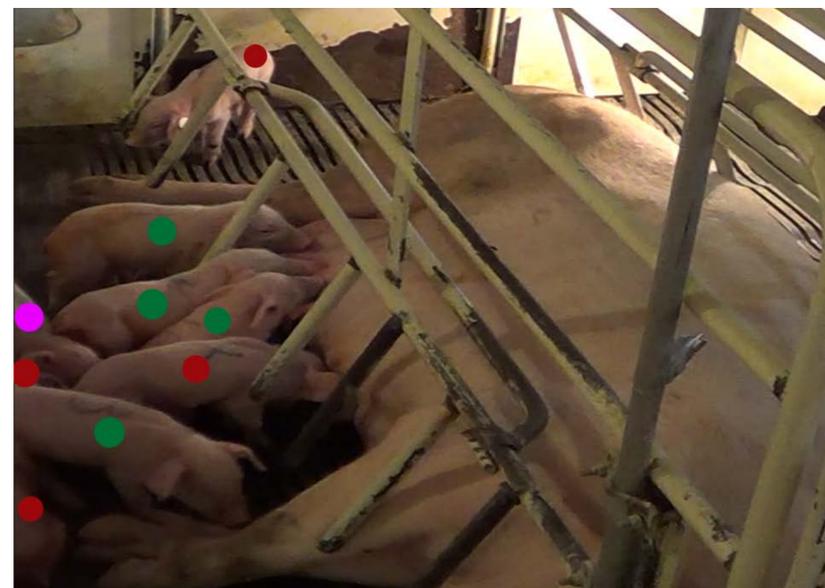
Barrier® wound spray with pain relief is the right choice when the health and welfare of the piglet is at stake. As a stringent broad spectrum antiseptic, it improves the health of the pig. As an analgesic providing a local anesthetic effect, it improves the welfare of the pig. The wound spray feature lowers the skin bacterial count in and around the surgical site for an extended period of time post application. Immediate reduction in bacteria is due to the alcohol carrier. The prolonged antiseptic effect is due to 20% povidone iodine which results in 2% available iodine. The alcohol evaporates leaving behind an iodine barrier effective against bacteria, yeast and molds.¹ The pain relief feature utilizes the analgesic properties of lidocaine to reduce pain in 15 to 30 seconds. Lidocaine is absorbed by nerve endings resulting in the local anesthetic effect lasting 60 to 120 minutes post application.² The lidocaine breaks down slowly allowing the animal acclimate to the pain. The objective of this study was to evaluate wound healing and pain relief in pigs sprayed with Barrier wound spray with pain relief (Barrier) as compared to non-treated controls.

Materials and methods

Four hundred piglets (290 males, 110 females) from 56 litters were enrolled in this study. First the welfare component, pain control, and then the health component, infection/inflammation control were evaluated. Piglets were weighed and uniquely identified by ear tag on day -1. Female piglets were automatically assigned to the positive control treatment group 3. Male piglets were evenly distributed by weight and randomly assigned to treatment group 1 or group 2. The first objective of the study was to evaluate the pain relief (welfare) effect of Barrier by observing the behavior of piglets at 5, 30 and 60 minutes post processing (castration and tail dock). On day 0 all males were castrated and tail docked. Group 1 received two sprays of Barrier, one spray on the castration incisions and one spray on the tail dock site. Group 2 served as negative controls and received nothing. The females, group 3, were used as positive controls. They were picked up and turned over like the males but were not processed including not tail docked.

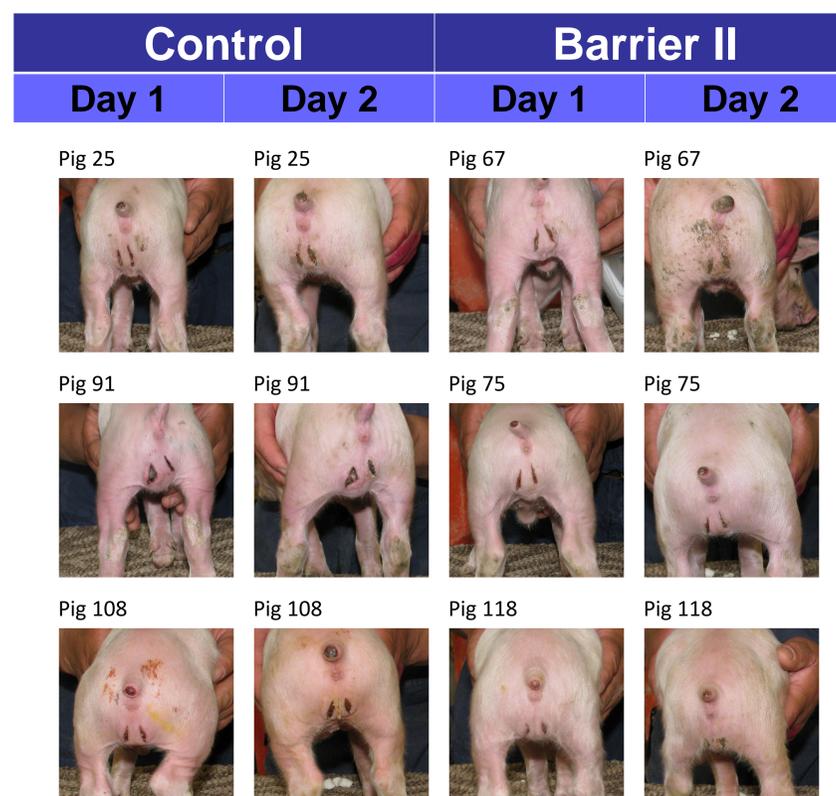


Students from the University of Minnesota, College of Veterinary Medicine observed the pigs. The students recorded a subjective score based on behaviors associated with pain or indifference to pain.^{3,4} Behaviors such as huddled posture, trembling or scooting were considered expressions of pain. Physical activity such as walking, fighting, standing, sitting, laying and nursing of each pig was noted. Also noted was touching or not touching another pig or the sow. The second objective of the study was to evaluate the antiseptic (health) effect of Barrier by scoring the healing of the castration and tail dock sites.⁵ Inflammation and abscesses were also scored. Healing scores were recorded on day 1, 2, 3 and 14. Piglets were weighed on day 14. Analysis of variance was used to analyze the data. *P* values < 0.05 were considered significant.



The pink dot is the female pig. Four red dots are control pigs. Four green dots are Barrier treated pigs. The control pig with the X is the largest pig and never shows painful behavior. The rest of the control pigs are huddled at the edges of the crate while the Barrier pigs engage in suckling and interacting with each other.

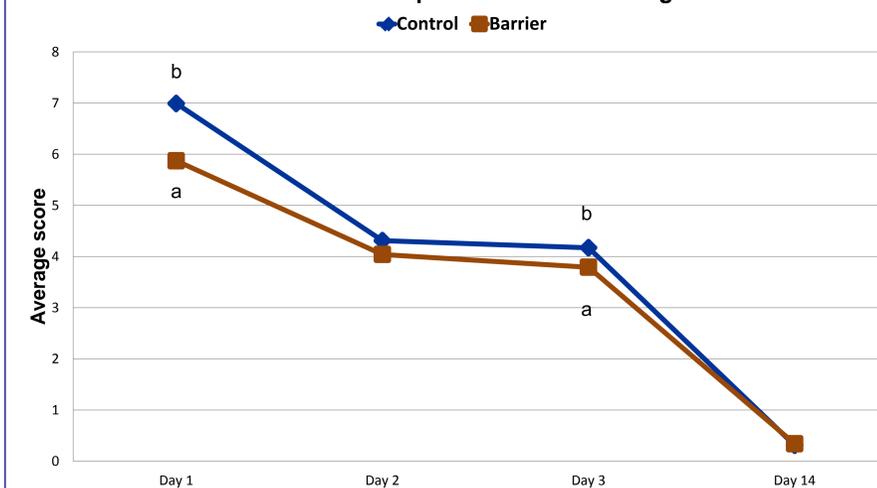
Come to the Aurora Technical Table to view the video.



Results and discussion

Fifteen group 1 pigs and ten group 2 pigs died during the study and five group 1 and two group 2 pigs were lost. There was no difference in weight gain among the treatment groups. Painful behavior in piglets is very subtle. There were no differences in behavior scores among the three treatment groups. Very few pigs exhibited signs of pain. The females exhibited pain as often as males from either treatment group. Our study did not support the observation that castrated pigs stand alone as an indication of pain.⁶ There was no difference between males and females in standing versus moving or in touching and not touching other pigs or the sow. By the 60 minute observation over 90% of all pigs were nursing or sleeping next to the sow. For analysis, castration site and tail dock healing scores were summed to create an overall healing score. A higher score indicates the wound is fresh, inflamed or abscessed. Overall healing scores of the Barrier sprayed piglets were significantly lower than the control group on day 1 and day 3 post treatment (Figure 1). Early wound healing provided by Barrier reduces the risk of subclinical infection at the wound site that develops during later production phases. This study confirms the health and welfare benefits of Barrier wound spray with pain relief.

Figure 1: Overall healing score by treatment
Lower score represents better healing



^a ^b Values with letters on a given day differ (*P* ≤ 0.05)

References

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