

Proposal # 11/217

Ontario Pork Research Proposal Final Report

Project Leader: Robert Friendship

Project Title: Pain control for castration and tail docking

Objectives of the Research:

- To evaluate the effectiveness of analgesia in reducing the post-operative pain associated with castration and tail-docking
- To evaluate the effectiveness of local anesthesia to reduce the pain associated with castration
- To evaluate the combination of local anesthesia and analgesia in reducing pain associated with castration and tail-docking

Brief Summary of Research Results:

A study was performed to determine if the pain killer, meloxicam (Metacam[®], Boehringer Ingelheim) could be used to minimize the pain associated with processing piglets (castration and tail-docking). Both male and female piglets were alternately allocated to receive a single IM injection of 0.4 mg/kg of bodyweight of meloxicam (n=1427) or a placebo (n=1461) at least 30 minutes prior to processing. Mortality and growth rate were monitored and treatment was found to have no effect on these parameters. Castrated piglets receiving meloxicam displayed significantly less tail-jamming behaviour and tended to exhibit less isolating behaviour compared to piglets receiving the placebo. These behaviour results suggest meloxicam did reduce pain. Likewise plasma cortisol which rises when animals are stressed or suffer pain was higher in the piglets receiving the placebo compared to the meloxicam treated piglets for the first few hours after castration.

A second piglet study was performed to evaluate a different pain killer, ketoprofen (Anafen[®], Merial Canada Inc.). This study involved 1491 male piglets alternatively receiving either ketoprofen (3 mg/kg of bodyweight) (n=755) or similar volume of a placebo (n=736) at least 30 min prior to processing. Results were similar to the meloxicam study, with no difference in growth rate and mortality between pigs receiving a pain killer and those pigs receiving the placebo, but behaviour and cortisol levels suggested a positive reduction in pain during the first few hours after castration.

Another study evaluated the use of a local anesthetic (lidocaine) injected into the testicle to reduce the pain associated with castration. The combination of “freezing” the testicle and spermatic cord with lidocaine, and using a pain killer, meloxicam was evaluated. The local anesthetic helped block the acute pain caused by severing the spermatic cord and removing the

testicle, and the combination lidocaine and meloxicam helped reduce behavioural changes up to 24 hours after castration. This combination, (in general but not always) was better overall in reducing evidence of pain associated with castration. The negative aspects of this approach were that the animals had to be handled twice because the freezing needed about 3 minutes to take effect and lasted for about an hour, and testicular injections did cause some discomfort.

Our conclusion from this work is that an analgesic given at the time of handling for processing is practical and not a significant economic burden, but the combination of local and analgesic is questionable both from a welfare and a labour standpoint.