Reduction of testis size in postnatal pigs using a depot progestin
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Surgical castration is a practice chosen by most swine producers because it is relatively easy to perform, inexpensive and effective in reducing boar odor in pork. It can also alleviate potential behavioral problems associated with raising intact males. The practice has come under scrutiny in the past 20 years as animal welfare concerns are being raised regarding the pain associated with surgical removal of the testes. The objective of the study was to investigate chemical castration of pigs as an alternative to the regular surgical castration procedure that has historically been used to prevent boar taint in the resultant pork products. The primary goal was to determine if a single exposure of a subcutaneous administration of a depot progestin (medroxyprogesterone acetate; Depo Provera®, Pfizer Inc., New York, NY) in postnatal pigs will eliminate Leydig cell proliferation and production of high testosterone levels that can result in boar taint.

Crossbred boars (n=15) were administered a single injection of depot progestin at ten weeks of age and monitored weekly and biweekly for serum testosterone and androstenedione levels as well as testis size measured by calipers. Control boars were treated with a saline injection at 10 weeks of age. Animals were sacrificed at 180 days of age and fat samples obtained for further analysis. Data were analyzed using a repeated measures MANOVA using SAS (SAS 9.1, SAS Inc., Cary, NC). The results of this project reveal that testis size of postnatal boars treated with depot progestin is significantly decreased (P < 0.001) over time compared to control boars. The body weights of the treated and control groups were similar (P > 0.05) throughout the entire study. The reduction in testis size was not such that personnel could not tell that it was an intact male. Steroid hormone assays (testosterone and androstenedione) indicated that levels of both hormones were decreased significantly (P < 0.05) for 4-6 weeks post-treatment, but then returned to pre-treatment levels and were comparable to control boars. These results confirm that synthetic progesterone can suppress testosterone production and decrease testis size of treated animals, but this effect is not sustained until the normal time of 22-26 weeks of age for slaughter of these animals in the U.S. Further studies need to be performed in order to evaluate the correct timing and dosage for treatment of postnatal pigs with depot progestin as it was believed that there was a dilution effect of the drug as the animals grew.

Keywords: Swine, depot, progestin, castration, medroxyprogesterone acetate.

Acknowledgement
This project was supported by a grant funded by USDA/CRIS ILLU-888-312.