

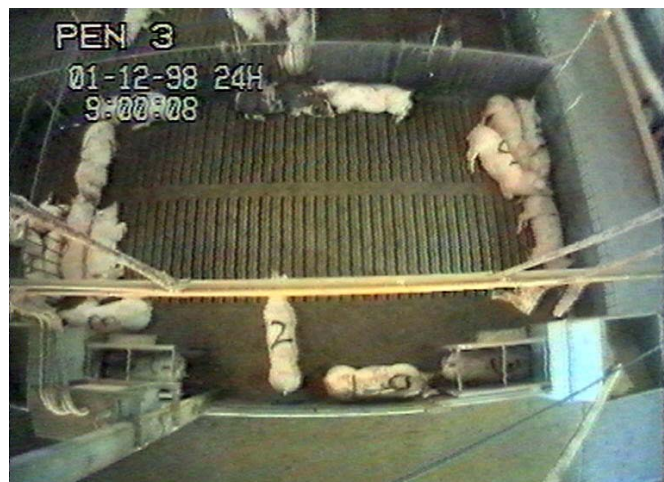
Finisher pigs, i.e. pigs from about 50 kg to slaughter weight, are housed in single-sex groups because the dietary requirements for optimal growth are different between the sexes. In addition, in many countries male pigs not required for breeding are surgically castrated; typically this occurs early in life. Research in the 1970s showed that surgical castration reduced growth efficiency. Specifically, conversion of feed to lean meat was less efficient and body fat content increased. Consequently, the Australian pig industry ceased castration of pigs about 25 years ago. However pig nutritionists have recently found that growth efficiency of group-housed entire male pigs declined during the last weeks of growth for older/heavier pigs. It was suspected that increased sexual behavior and aggression was reducing feed intake and thus impairing growth in entire males.

Recently, a new technology, immuno-castration, was developed which involves using a vaccine (Improvac®, CSL Ltd., Parkville, Victoria, Australia) to chemically “castrate” male pigs in the latter stage of the finisher phase of production, thereby eliminating the need for surgical removal of the testes. The vaccine involves an initial injection at 14 weeks of age followed by a booster 2 weeks later. This effectively castrates the pigs by 18 weeks of age, after they have had the benefit of growing as entire males to that point. The experiment aimed to record the behavior of group-housed, male pigs over 24-h periods towards the end of the finisher phase of production to examine whether castration per se affected (1) the animal’s time budget in relation to feeding behavior and activity and (2) aggression. Two alternative methods of castration were compared: traditional surgical castration and the new technology of immuno-castration.

METHODS

The experiment was conducted on a commercial farm with 180 male pigs housed 15 per group. There were 3 treatments: (1) surgically-castrated at 14 days old, (2) immuno-castrated by injection of Improvac and (3) entire males. For identification on the video record, pigs were numbered on the back with paint. Feed was available ad libitum from 2 computerized feeding stations per pen and each pig wore a transponder ear tag enabling individual identification by the computer for individual measurement of feed provided daily. The pigs were weighed weekly and slaughtered at 23 weeks of age.

Low-light color video cameras with auto-iris lenses were fixed above each pen. Night-time recording was assisted by 20 W fluorescent lights at roof level above each feeder. Continuous time-lapse video was recorded for each group at 17 and 21 weeks of age to supplement the feed intake information provided by the feeding station computer.



The Observer Video-Pro 4.0 was used to quantify the activity of each pig from the 24 h time-lapse record at each age. A continuous record of each pig’s location in the pen and behavior was obtained according to a catalogue of 15 behaviours. Using The Observer, the data were then collated to provide duration and frequency information for key

behavior classes relevant to the investigation, viz. total activity, feeding, aggression and sexual behavior. Some situational factors associated with entry to and exit from the feeders were also recorded as modifiers in The Observer.

RESULTS AND DISCUSSION

On both observation occasions, the “sexually-active” treatments (i.e. entire males and immuno-castrates at 17 weeks and entire males at 21 weeks) on average allocated about one-third of active time to feeding, whereas castrated males spent almost one-half of active time feeding ($P < 0.05$). Thus, while castration appeared to eliminate the incidence of aggression and sexual behavior, the time budget of male pigs was also altered.

At 21 weeks, entire males were less likely to queue for access to a feeder and appeared more motivated to perform aggressive/sexual behavior to the detriment of feeding. Daily feed intake was lower for entire males (2.69 kg) compared to immuno-castrates (3.32 kg), with surgical-castrates in between (2.90 kg). At 23 weeks entire males tended to be lighter than immuno-castrates, with surgical-castrates in between (102.3, 108.9 and 103.9 kg).

CONCLUSIONS

Castration reduced aggression and increased feeding behavior in group-housed male finisher pigs. The results also indicate that the levels of aggression and feeding behavior of immuno-castrates at 21 weeks were similar to surgical-castrates.

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