



Australian Government
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Attendance of the 45th Congress of the International Society of Applied Ethology

Final Report
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Project Summary

The abstract “Changes in aggression over time in pregnant sows post-mixing” based on research funded by APL (2009/2303) was presented in a seminar at Ohio State University and in a Poster presentation at the 45th congress of the International Society of Applied Ethology (Indianapolis, USA). A series of meetings during and around this conference, discussed previous and current research (funded by APL) and prospects of collaboration and additional funding to compliment this research into minimizing aggression in group housed sows.

Background

Group housing of females often leads to high levels of aggression following mixing which indicates that anticipated improvements in sow welfare are not being realized. Aggression has production and welfare implications. Despite research to date on minimizing aggression when grouping unfamiliar pigs, there are few rigorous recommendations and this subject needs further research to allow successful management of group housed females. Two abstracts arising from APL funded research will be presented in the 45th Congress of the Society for Applied Ethology (Indianapolis, USA). This highly respected international forum provides an excellent opportunity to discuss and receive feedback on our research as well as a potential to develop collaborative opportunities.

Objectives

1. To attend/present a poster at the 45th Congress of the International Society for Applied Ethology
2. Meet, discuss and receive feedback on current research and explore collaborative research opportunities (e.g. with Ohio State University)
3. Discuss collaborative funding opportunities with National Pork Board (NPB)

Activities Undertaken

During this trip the following activities are planned:

- Attendance at the 45th congress of the International Society of Applied Ethology (Indianapolis, USA)
- Student seminar at Ohio State University, followed by facility tours and farm visits.
- Collaborative meeting with Dr S. Moeller and Dr H. Zerby to discuss opportunities for collaborative research (within the APL and Pork CRC funding strategies) and discuss funding opportunities from the National Pork Board.

Results

A presentation on “Changes in aggression over time in pregnant sows post-mixing” based on research funded by APL (2009/2303) was delivered in a collaborative seminar involving students and staff from Ohio State University (Animal Science Department), Monash University, Department of Primary Industries and The University of Melbourne. This presentation was based around the abstract submitted to the International Society of Applied Ethology (attached in the Appendix).

A tour of the animal facilities of the Animal science department (Ohio State University) was provided by Dr Steven Moeller and Sara Crawford (PhD candidate). The tour included a dairy facility, piggery, sheep feedlot, and horse stable.

Funding opportunities through the National Pork Board, Pork CRC, and Ohio Pork Producers Council (OPPC) were discussed in a meeting with Prof. Paul Hemsworth, Dr Steven Moeller, Dr Naomi Botheras, Dr Ellen Jongman, Jeremy Skuse and Sara Crawford. Dr Steven Moeller expressed interest in the current research on sow aggression funded by APL, and is now involved in the current application for funding to the Pork CRC “Effects of floor space and mixing pens on aggression and stress in group-housed sows”. Dr Moeller will also investigate funding opportunities from OPPC and Ohio State University to compliment the proposed Pork CRC project.

The 45th congress of the International Society of Applied Ethology was attended. During this conference an abstract (see appendix) was presented as a poster (“Changes in aggression over time in pregnant sows post-mixing”) and was well received. A meeting with Prof. Paul Hemsworth, Dr Harold Gonyou, Dr Jennifer Brown, Dr Fiona Lang and Megan Verdon (PhD candidate) during the conference discussed the recently completed study (The effects of group housing during gestation on sow welfare and reproduction) and future collaborative opportunities between the Prairie Swine Centre and the Animal Welfare Science Centre.

Table 1: Break-down of costs associated with travel

Description	Costs (AUD)
Flights	\$2396.79
Accommodation	\$1263.53
Incidentals	\$60.84
Total	\$3721.16

Implications and Recommendations

The 45th congress of the International Society of Applied Ethology provided an ideal opportunity to meet with prominent research scientists in Animal Welfare. Through the series of meetings during and around this conference, discussions on previous and current research (funded by APL) have enhanced future research opportunities through prospects of collaboration and funding to compliment the research undertaken in Australia.

Appendix - Changes in Aggression over Time in Pregnant Sows Post-Mixing

Maxine Rice, Jennifer Chow & Paul H. Hemsworth

Increasing community concern about confinement housing has led to legislation, consumer and retailer pressure to increase the use of group housing for gestating sows. However, international industry experience indicates that the opportunity for group housing to improve sow welfare is presently limited by the high levels of aggression commonly observed in newly formed groups of sows after mixing. The present observations on sow aggression were conducted as part of a large project studying group-housing design for gestating sows. One hundred and twenty sows (parity 3-5) were randomly mixed into groups of 10 at 40 days post-insemination. Sows were housed in indoor pens with a floor space allowance of 1.6 m² per animal and fed 2.8 kg of a commercial diet delivered once a day (including at the time of mixing) via 2 drop feeders per pen. Using digital video records, observations on aggression (slashes, butts/pushes and bites) delivered and received were conducted for 60 min post mixing (Day 1) and 60 min post feed delivery on Days 2, 3, and 4. Kruskal-Wallis one-way ANOVA by ranks was used to examine the effects of time. There were significant effects of time on the number of aggressive behaviours delivered in the 1-h period following feed delivery (means (and standard error of the means) of 12.8, 11.5, 11.1 and 13.9 (SEM=1.36) aggressive behaviours per sow on Days 1, 2, 3 and 4 post-mixing, $P=0.001$). Conversely, there were also significant effects of time on the number of aggressive behaviours received in the 1-h period following feed delivery (means (and standard error of the means) of 12.6, 11.2, 10.7 and 13.5 (SEM=0.82) aggressive behaviours per sow on Days 1, 2, 3 and 4 post-mixing, $P=0.017$). Feeding and pen design features, such as feeding system, floor space and group size, are likely to affect aggression. The literature indicates that aggression should subside over time to low long-term levels by the 2nd or 3rd day post-mixing (Barnett et al., *Appl. Anim. Behav. Sci.* 34:207-220, 1992), however the relatively high levels of aggression around feeding over the first 4 days of grouping found in the present observations are surprising and highlight the need to identify practical strategies to reduce sow aggression.