

## **1C-112: Effects of group housing on sow productivity and welfare: Review**

**Project Leader:** Paul Hemsworth

**Project Participants:** Paul Hemsworth (The University of Melbourne) and Christian Hansen (University of Copenhagen) with the support of Ms. Megan Verdon, Dr Jean-Loup Rault and Ellen Jongman (The University of Melbourne), Ms. Lisbeth Hansen (Danish Pig Research Centre) and Ms. Kate Plush (University of Adelaide).

### **Aims and Objectives:**

To review the scientific literature on the effects of group housing from both post-weaning and post-insemination on sow productivity and welfare.

To identify key research areas that could form a 'road map' for a 3 to 5-year R&D investment and potential collaboration between Pork CRC, the Danish Pig Research Centre and the University of Copenhagen.

### **Key Findings**

The literature review examined factors affecting the welfare of sows in groups with the aim of identifying key research priorities to address risks to sow welfare. This review also provides the Australian pork industry with information on how to successfully mix sows and manage them under group housing systems.

Floor space allowance markedly affects sow welfare, although sows in groups appear to quickly adapt to reduced space soon after mixing and during gestation. In addition to quantity of floor space, the quality of space is also important: spatial separation between sows can also be provided with visual or physical barriers and stalls. Thus optimizing factors such as floor space and other design features, such as barriers as well as providing access to resources such as feed, water and a lying area, appear to be important in reducing aggression and stress at mixing and beyond.

Feeding levels, dietary ingredients and feeding systems can also affect aggression and stress. Increased feeding levels, particularly around mixing, together with additional/alternative fibre sources may improve sow welfare by reducing stereotypies and aggression at these critical times. The move towards group housing of sows, above all, requires increased stockperson skills and knowledge in observing and managing individual animals, as well as the group as a whole, in group housing systems.

### **Application to Industry**

The extensive literature review on the principles of grouping sows post-weaning and post-insemination to minimize welfare risks and maximise reproductive performance culminated with the joint Pork CRC/APL publication, *Mixing Sows-How to maximise welfare*. This industry document was published in April 2014 and launched at the Sow Housing Workshops at Toowoomba on 2 April and Melbourne on 4 April, 2014 and is now available to all Australian pork producers.

The literature review also identified a number of areas for future R&D investment and collaboration between Pork CRC, the Danish Pig Research Centre and the University of Copenhagen. The R&D areas included mixing pens, socialization of juvenile gilts and increased satiety and enrichment for dry sows.