



## The use of pigs for research with examples of research on housing and handling

The number of pigs used for research in Victoria in the four years prior to 1994 is shown in Table 1. The definition of research is broad and encompasses animal experimentation, demonstration and teaching. In comparison, the approximate annual usage of mice and rats is 200,000 and 45,000, respectively. This information is published annually by the Bureau of Animal Welfare, Agriculture Victoria. In the 1993/94 report, 48% of pigs were used 'to study or demonstrate normal or abnormal body structure or function' or 'to study behaviour in animals' and 9% were used to 'study infection and/or immunity' or 'develop or improve surgical techniques'.

**Table 1 Numbers of Pigs Used for Research in Victoria**

1990/91	4011
1991/92	3443
1992/93	2303
1993/94	4366

As ANZCCART newsletters have a focus on animal welfare I thought it appropriate to review some of the research undertaken at the Victorian Institute of Animal Science (VIAS) that is particularly relevant to welfare, namely housing and handling of pigs, both of which have been extensively researched over the last 16 years. However, pigs are used for a variety of other research purposes, on pig production and diseases and for basic research in nutrition, reproduction, cardiovascular and other systems, immunology and genetic engineering. Useful source references that encompass worldwide research on pigs are the Index of Current Research on Pigs and Pig News and Information, both published by CAB International.

### Housing

To provide some background, an issue

of concern to industry is what will happen if sow stalls are phased out, as is due to happen in the UK by 1998. In responding to this type of issue it is important to state at the outset that there are no definitive answers. All systems of housing, whether individual or group, have different inherent problems and these have to be weighed against factors such as producer capabilities and time commitments. A role for researchers is to provide producers with the best options for their particular enterprise.

The most common types of housing for pregnant pigs in Australia are individual housing in stalls, which are basically open-topped and open-sided crates in which pigs can move backwards/forwards but are unable to turn around; and group housing in which pigs are housed in pens of various dimensions and varying group sizes (commonly between 6 and 40). Less common types of housing include tether stalls in which the housing is a partial stall and the pig is prevented from moving out of the stall by a neck collar attached by a chain to the stall. Pigs can be kept in group housing outdoors or in various modifications of indoor group pens, in which individual feeding places can be provided by incorporating stalls into the pens or in which individual feeding can be guaranteed by an electronic feeding system in which pigs with electronic implants or tags are individually given a prescribed amount of feed on entry to a feeding station.

The simple response to any possible phasing out of stalls is that about half of the Australian herd is housed in groups, with no period of individual housing except during farrowing (the period around parturition) and lactation. Group housing, by default, will be the option of choice for the entire herd. However, a decision of this nature is not straightforward, as both systems have advantages and disadvan-

tages. For example, advantages of stalls are that the most costly item in pig production, the feed, can be individually provided and feeding behaviour (as an indicator of "health") can be more easily monitored while disadvantages are that movement and social behaviours are restricted. In group housing, perceived advantages are that pigs have more space and can socially interact with other pigs while disadvantages are the aggression that occurs when grouping (unfamiliar) pigs, the reduced control of feed intake and the perception of increased skills/time required to monitor health/welfare.

Housing is a contentious issue for the pig industry. There are some sectors of the community opposed to animal production, particularly intensive animal production, and there are other sectors that are concerned about the constraints that modern production systems impose on animals. In relation to pigs, the issue was thoroughly aired during the Senate process inquiring into intensive animal production and readers are referred to the report (Anon., 1990) for further information and recommendations. In part, because of concerns for welfare by the pig industry and also because of the advent of the Senate inquiry process, the Pig Research and Development Corporation has funded research at VIAS for a number of years to evaluate the welfare-related responses of pigs to

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