

## Dr. Malcolm MITCHELL

Roslin Institute

## Peter KETTLEWELL

Silsoe Research Institute (*alternate speaker*)

### **“Road Transportation of Pigs: Specification of Acceptable Condition for Animals**



Discussions within the EC seeking to define acceptable ranges and limits for the thermal conditions during transport of livestock are based on available scientific data, much of which is dated and in many cases relates to individual animals. There are NO scientific data that relate specifically to acceptable transport conditions for livestock on journeys exceeding 8 hours. Since long journeys involve major geographical and climatic changes, the animals are not exposed to constant ambient conditions. Conducting sound scientific research to address this scenario is thus challenging. It is NOT impossible, but it will be expensive!

The data to be presented suggests that it is possible to conduct research to define acceptable thermal limits, under transport conditions, for pigs. These data can initially be derived under controlled conditions within climate chambers, then further validated under actual transport conditions using the unique research vehicle available to this research group. Further, the data can also be used to optimise mechanical ventilation systems that will be viable for commercial operation. Further experimental work is scheduled for summer 2004 in Spain to provide additional scientific data.

These results demonstrate the need to consider adaptation of animals to their prevailing (home) environment. This is an important factor that may preclude meaningful “all-encompassing legislation” to cover countries as different climatically as Sweden and Greece. The question remains “Should a single market mean a single standard?”

Perhaps a more pertinent issue would be to determine acceptable conditions for pigs travelling from colder to warmer climates, where thermal changes will arise as the vehicle travels to its ultimate destination. In this case, the pigs will have been reared in cooler climates (e.g. UK) and then transported to hotter climates (e.g. Spain).

The scientific collaborators, research facilities, expertise and commercial collaborators (in many cases) are now well established to address these issues. All that is required is funding!

The impossible doesn't take longer - it just costs more!

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### Mr. Peter Kettlewell

Peter graduated Manchester University (UK) with an Honours Degree in Physiology in 1977. He then had a “year out” pursuing various past-times including driving Heavy Goods Vehicles. He then returned to the academic environment undertaking a second degree in Agricultural Engineering. He graduated from the National College of Agricultural Engineering with an Honours Degree in 1981.

Later in 1981, Peter joined Silsoe Research Institute (then the National Institute of Agricultural Engineering) in Silsoe working on new project areas, funded by the UK MAFF, including the mechanical collection of live broiler chickens. In 1984 he started research on the transport of broiler chickens. This was a complementary study to that of Malcolm at Roslin. This research has culminated in the design and development of novel mechanically ventilated broiler transport vehicles that are now being built commercially in the UK.

### Dr. Malcolm Mitchell

Malcolm graduated from the University of Sheffield (UK) with a First Class Honours degree in Physiology in 1973. He then pursued his graduate studies in “Mechanisms of Absorption of Nutrients from the Small Intestine of the Domestic Fowl” in the Department of Physiology in the University of Sheffield (UK). Following the award of his Ph. D. undertook post-doctoral research on “Mechanisms of Amino Acid Absorption from the Intestine of the Domestic Fowl”. In 1980 he moved in to human physiology and held a post doctoral fellowship in the University Department of Obstetrics and Gynaecology, University of Sheffield examining the “Endocrine Abnormalities of Patients with Chronic Renal Failure”.

In 1981 he joined the (then) AFRC Poultry Research Centre in Roslin to head the project studying “Heat Exchange between Birds and their Environment”. In 1984 he began his studies in “Physiological Stress and Poultry Transport” and has developed this area beyond poultry into other livestock including pigs, calves and sheep.

He now heads a research group at the Roslin Institute (Principal Scientist) studying the “Stress Physiology of Livestock”.

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#### Dr. Peter KETTLEWELL

Silsoe Research Institute

Environment Group  
Wrest Park, Silsoe

Bedford, MK45 4HS England, UK

Office: + 44 01525 86 40 27

Fax: + 44 01525 86 17 35

peter.kettlewell@bbsrc.ac.uk

www.sri.bbsrc.ac.uk

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#### Dr. Malcolm MITCHELL

Roslin Institute

Division of Integrative Biology  
Roslin

Midlothian, EH25 9PS England, UK

Office: + 44 131 527 4214

Fax: + 44 131 440 034

malcolm.mitchell@bbsrc.ac.uk