AUTHOR INFORMATION PACK

MEAT SCIENCE

DESCRIPTION

This year Meat Science celebrates 40 years as the leading journal in its field.

The qualities of meat – its composition, nutritional value, wholesomeness and consumer acceptability – are largely determined by the events and conditions encountered by the embryo, the live animal and the postmortem musculature. The control of these qualities, and their further enhancement, are thus dependent on a fuller understanding of the commodity at all stages of its existence – from the initial conception, growth and development of the organism to the time of slaughter and to the ultimate processing, preparation, distribution, cooking and consumption of its meat.

It is the purpose of Meat Science to provide an appropriate medium for the dissemination of interdisciplinary and international knowledge on all the factors which influence the properties of meat. The journal is predominantly concerned with the flesh of mammals; however, contributions on poultry will only be considered, if they demonstrate that they would increase the overall understanding of the relationship between the nature of muscle and the quality of the meat which muscles become post mortem. Papers on large birds (e.g. emus, ostriches) and wild capture mammals and crocodiles will be considered.

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Meat scientists, food technologists, food manufacturers, agricultural chemists and research workers.

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INTRODUCTION

The qualities of meat - its composition, nutritional value, wholesomeness and consumer acceptability - are largely determined by the events and conditions encountered by the embryo, the live animal and the postmortem musculature. The control of these qualities, and their further enhancement, are thus dependent on a fuller understanding of the commodity at all stages of its existence – from the initial conception, growth and development of the organism to the time of slaughter and to the ultimate processing, preparation, distribution, cooking and consumption of its meat.

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Another common problem in meat and food science is the lack of replication and also confounding. This is illustrated with two examples below taken from submitted papers:

**Example 1**
A total of thirty crossbred male lambs, single born in June were used in an experiment to compare three production systems (12 lambs allocated per system) and the subsequent effects not only on growth and carcase traits, but also meat quality traits. Lambs of the three production systems were weighed fortnightly. When a 35kg live weight target was achieved the lambs weighing >35kg were transported to an abattoir. Lambs were slaughtered after an overnight lairage without feed, but free access to water.

There are a number of issues with the design.

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**Example 2**
Hams were produced with five decreasing levels of phosphate in combination with 5 increasing levels of thyme. All formulations were applied to a single batch of pig meat. Each formulation produced one mixture which was vacuum stuffed into plastic casings to produce four ham 'replicates'. These were cooked in a water bath.

This method produced pseudo replicates (Hurlbert 1984, 2009; Maindonald 1992). The cooked hams are subsamples of the pig mixtures of each formulation. The ham to ham (sub-sample) variability does not represent the mixture to mixture (treatment) variability. To get the correct measure of variability to compare treatments the mixing process for each formulation would need to be replicated. The hams produced from each mixing of the formulation would give true replication of that formulation.

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