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A STUDY OF SEASONAL VARIATION IN FARROWING RATE
ON PIG UNITS IN NEW ZEALAND

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ABSTRACT

A study was undertaken to determine the extent of seasonal variation in farrowing rate on commercial pig breeding farms in New Zealand and the influence of some environmental factors on reproductive efficiency.

The data comprised monthly farrowing rates covering a two year period and involving five breeding units located in each of four climatic regions ('hot and stable'; 'hot and variable'; 'warm'; and 'cool'). The latter were identified on the basis of mean monthly maximum temperature and mean monthly diurnal temperature fluctuation prevailing during the summer months.

Examination of 11,379 observations revealed an overall farrowing rate of 77.1% with the presence of some seasonal variation.

Only within the 'hot and stable' region did month of mating significantly influence the farrowing rate. However, in all regions some farms exhibited a considerable decrease in farrowing rate from late spring and summer matings compared with other times of the year.

Any possible effect of the regional differences in climate on farrowing rate was overshadowed by marked within-region variation in farrowing rate associated with farms.

In support of a farm influence on farrowing rate a subjective classification of housing standards for breeding stock generally placed those with the highest farrowing rate, irrespective of season or location, in the top category, and 'vice versa'.

In the temperate climate of New Zealand present findings would suggest that 'summer'infertility can probably be avoided in the healthy breeding herd where attention is given to detail in respect of housing and husbandry standards, thereby avoiding the development of stressful conditions particularly during the critical warmer months of the year.

PREFACE

The pig industry has been considered to be free from seasonal constraints on productivity, such as those which affect other farm species. However with the advent of intensive, more efficient farming systems the relationship between season and reproductive performance has recently received an increased amount of study. A depression in reproductive efficiency at certain times of the year, in a number of countries, is now well documented, although the nature of the problem has not been defined and as a consequence the issue is surrounded by much confusion and conflicting reports as to etiology.

In New Zealand, an analysis of records collected at the Pig Research Centre, Massey University, over a seven year period, revealed lowered reproductive performance over the summer months (December to February inclusive). (Hermann, 1980.) That seasonal porcine reproductive inefficiency, reported in a number of countries, was also evident in New Zealand stimulated interest in pursuing this topic in more detail. The present study is in the form of a farm survey. It has two main objectives; firstly to determine the extent of seasonal reproductive inefficiency on commercial pig breeding units, in this country, and secondly to examine the influence of some environmental factors on the incidence of the condition.

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