British Society of Animal Production OCCASIONAL PUBLICATIONS

The British Society of Animal Production's Occasional Publication Series contains the full papers presented at certain symposia organized by the Society.

Copies may be obtained from the British Society of Animal Production, c/o Farms Division Office, Bush Estate, Penicuik, Midlothian EH26 0PH, Scotland.

- No. 1. THE USE OF BLOOD METABOLITES IN ANIMAL PRODUCTION (1976). Published 1978. 166 pp. Price £5.00 (\$8.00) + £2.00 (\$3.20) airmail supplement.
- No. 2. THE MECHANIZATION AND AUTOMATION OF CATTLE PRODUCTION (1977). Published 1980. 206 pp. Price £5.00 (\$8.00) + £2.00 (\$3.20) airmail supplement.
- No. 3. BY-PRODUCTS AND WASTES IN ANIMAL FEEDING (1978). Published 1980. 118 pp. Price £5·00 (\$8·00) + £2·00 (\$3·20) airmail supplement.
- No. 4. INTENSIVE ANIMAL PRODUCTION IN DEVELOPING COUNTRIES (1979). Published 1981. 481 pp. Price £15.00 (\$24.00) + £5.00 (\$8.00) airmail supplement.
- No. 5. COMPUTERS IN ANIMAL PRODUCTION (1980). Published 1981. 155 pp. Price £8.00 (\$12.80) + £3.00 (\$4.80) airmail supplement.
- No. 6. FORAGE PROTEIN IN RUMINANT ANIMAL PRODUCTION (1981). Published 1982. 193 pp. Price £10.00 (\$16.00) + £3.50 (\$5.60) airmail supplement.
- No. 7. TRACE ELEMENTS IN ANIMAL PRODUCTION AND VETERINARY PRACTICE (1982). Published 1983. 155 pp. Price £12.00 (\$19.20) + £3.50 (\$5.60) airmail supplement.
- No. 8. MATCHING PRODUCTION TO THE MARKETS FOR MEAT (1983). To be published in 1984. Price not yet fixed.

Illustrations. The same material should not normally be presented in tables and figures. Legends should be typed on a separate sheet.

- (a) Diagrams should be drawn in Indian ink, about twice the size of the finished block, on Bristol board, stout tracing paper or plastic film. Photographed diagrams are also accepted. Lettering inside the framework of the diagram should be avoided as far as possible but if unavoidable it should be included on a fly-leaf. Marginal lettering should be inserted lightly in pencil on the original diagram or on a fly-leaf.
- (b) Photographs intended for half-tone reproduction should be on glossy paper. They will be accepted only if found necessary by the Editors.
- (c) Colour plates are unlikely to be accepted unless authors bear the cost.

Tables should be as simple and as few as possible. Each table should be typed on a separate sheet.

Abstract. Every article should have a short abstract (not more than 250 words) complete in itself and understandable without reference to the paper. The abstract will be printed at the beginning of the paper.

References. Only papers closely related to the author's work should be referred to; exhaustive lists should be avoided. The arrangement of references should be as in recent papers in *Animal Production*; details are given in the notes for guidance.

Proofs are supplied once and must be returned corrected to the Editors within 3 days. Only essential corrections should be made.

Reprints. Twenty-five reprints of each paper will be supplied free to authors on request. Further copies may be purchased if the order is sent at the proof-stage.

Animal Production is published six times a year in two volumes. Annual subscription is £61.00 (or \$130.00 in the USA and Canada) and the price for a single part is £11.00 (or \$24.00) net.

Proceedings of the British Society of Animal Production (New Series) ceased publication in 1975 and the material is now published as a separate section in the June issue of Animal Production.

Correspondence regarding subscriptions and sales (current and back numbers of the Journal and the Proceedings), should be addressed to: Scottish Academic Press Ltd, 33 Montgomery Street, Edinburgh, Scotland EH7 5JX.

Other enquiries, including those concerning copyright, should be addressed to: Durrant Periodicals, Winton Lea, Pencaitland, East Lothian, Scotland EH34 5AY.

Senior Editor

T. L. J. Lawrence, University of Liverpool

Editors

- J. A. Bines, National Institute for Research in Dairying
- R. C. Campling, Wye College, University of London
- M. F. Fuller, Rowett Research Institute
- J. P. Hanrahan, Agricultural Institute
- W. Haresign, University of Nottingham
- A. J. Kempster, Meat and Livestock Commission
- J. A. F. Rook, Agricultural and Food Research Council
- J. H. B. Roy, National Institute for Research in Dairving
- R. Thompson, Animal Breeding Research Organisation
- A. J. F. Webster, University of Bristol

Technical Editors

Hilary Davies

Marie C. Pitkethly

CONTENTS

	PAGE
Lôbo, R. B., Duarte, F. A. M., Gonçalves, A. A. M., Oliveira, J. A. and	
WILCOX, C. J. Genetic and environmental effects on milk yield of	
	157
Pitangueiras cattle	
199 1 9 1 1 1	165
SEEBECK, R. M. Body composition of British and zebu × British cattle in	
mouthour Assetuatio	177
CUTHBERT, N. H., THICKETT, W. S. and SMITH, H. The efficacy of dietary	
avoparcin for improving the performance of growing-finishing beef	
cattle	195
ELIMAM, M. E. and ØRSKOV, E. R. Factors affecting the outflow of protein	-22
supplements from the rumen. 2. The composition and particle size of	
the basal diet	201
WIENER, G., WILMUT, I., WOOLLIAMS, CAROL, WOOLLIAMS, J. A. and FIELD,	201
A. C. The rôle of the breed of dam and of the breed of lamb in	
determining the copper status of the lamb. 1. Under a dietary regime	
	207
low in copper	207
WIENER, G., WILMUT, I., WOOLLIAMS, CAROL, WOOLLIAMS, J. A. and FIELD,	
A. C. The rôle of the breed of dam and of the breed of lamb in	
determining the copper status of the lamb. 2. Under a dietary regime	210
moderately high in copper	219
HENDERSON, D. C., DOWNING, J. M., BECK, N. F. G. and LEES, J. L. Oestrous	
synchronization in ewes: a comparison of prostaglandin $F_{2\alpha}$ tham salt	
with a progestagen pessary	229
GUNN, R. G., DONEY, J. M. and SMITH, W. F. The effect of level of pre-mating	
nutrition on ovulation rate in Scottish Blackface ewes in different body	
conditions at mating	235
MANN, T. J. L., SMITH, C., KING, J. W. B., NICHOLSON, D. and SALES, D. I.	
Comparison of cross bred ewes from five crossing sire breeds	241
BUTTERFIELD, R. M., ZAMORA, J., THOMPSON, J. M., REDDACLIFF, K. J. and	
GRIFFITHS, D. A. Changes in body composition relative to weight and	
maturity of Australian Dorset Horn rams and wethers. 1. Carcass	
muscle, fat and bone and body organs	251
BUTTERFIELD, R. M., REDDACLIFF, K. J., THOMPSON, J. M., ZAMORA, J. and	
WILLIAMS, J. Changes in body composition relative to weight and	
maturity of Australian Dorset Horn rams and wethers. 2. Individual	
muscles and muscle groups	259
RHIND, S. M., ZYGOYIANNIS, D., DONEY, J. M., LESLIE, I. D. and HART, I. C.	
Effects of Zeranol® implants and dietary supplement on growth rate,	
endocrine status and blood metabolite levels of growing lambs at	
pasture	269
EASTHAM, PHILIPPA R., DYCK, G. W. and COLE, D. J. A. Reproduction in the	
gilt. 5. The effect of the presence of the mature male during rearing	
on puberty attainment	277
McCracken, K. J. and Gray, R. Further studies on the heat production and	
effective lower critical temperature of early-weaned pigs under	
commercial conditions of feeding and management	283
PIKE, I. H., CURRAN, M. K., EDGE, M. and HARVEY, ANNE. Effect of nutrient	203
density, presence of fish meal and method of feeding of unmedicated	
	201
diets on early weaned pigs	291
PÁLENÍK, Š. A note on the effects of pre-slaughter housing, diet and	
	201
sex on responses to post-mortem electrical stimulation in cattle	301
FERRELL, C. L. and JENKINS, T. G. A note on energy requirements for	205
maintenance of lean and fat Angus, Hereford and Simmental cows.	305
FLEET, M. R., STAFFORD, J. E. and DOLLING, C. H. S. A note on the	
occurrence of isolated melanin pigmented fibres in the white fleece	244
wool of Corriedale sheep	311
COMMISSION OF THE PROPERTY OF ANNAL PROPERTY OF	