

BRITISH SOCIETY
OF
ANIMAL PRODUCTION

WINTER MEETING

23 - 25 March 1987

GRAND HOTEL

SCARBOROUGH

PROGRAMME AND SUMMARIES

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BRITISH SOCIETY OF ANIMAL PRODUCTION

WINTER MEETING 1987

PROGRAMME

Day	Time	THEATRE SESSIONS		POSTER SESSIONS
MONDAY 23 MARCH		Ballroom	South Lounge	Session opens 1430 Authors in attendance 1600-1730 The Utilisation of Agricultural Crops and By-products for Industrial and Animal Use in Britain and the Third World Sheep Production
	1430	The President		
	1440	Dairy Production	Pig Nutrition	
	1600	T E A		
	1620	Alternative Animal Products from Ruminants	Sow Performance	
	1900 1945	SCARBOROUGH TOWN COUNCIL RECEPTION ANNUAL DINNER		
TUESDAY 24 MARCH	0850	Pig Performance		Discussion of Monday's Utilisation session - South Lounge Session opens 1100 Authors in attendance 14.00 -15.30 Recent Developments in Pig Production Beef Production
	1030	C O F F E E		
	1050	Growth	Reproduction	
	1230	L U N C H		
	1350	Dairy Cow Nutrition	Sheep Production	
	1530	T E A		
	1550	PLENARY SESSION Industry Problems and Research Needs		
	1800	ANNUAL GENERAL MEETING		
	1930	D I N N E R		
WEDNESDAY 25 MARCH	0850	Developments in Feed Evaluation and Intake Prediction for Ruminants		Discussion of Tuesday's Pig session- South Lounge Session opens 0850 Authors in attendance 1030-1200 Dairy Production General
	1030	C O F F E E		
	1050	Classification and Grading of Meat Animals: Objectives and Future Prospects	Silage and Beef Production	
	1230	L U N C H		
	1330	Ruminant Nutrition and Production	Pig Production	
	1510	C L O S E O F M E E T I N G		

DAIRY PRODUCTION

CHAIRMAN - PROF. J. F. D. GREENHALGH
BSAP President

- 1430 President's opening remarks
- 1440 1 The use of pedometers to detect oestrus in dairy cows
S. A. Schofield and C. J. C. Phillips
- 1500 2 The relationship between milk yield, body condition and reproductive performance
in high yielding dairy cows
C. P. Burchier, P. C. Garnsworthy, J. M. Hutchinson and T. A. Benson
- 1520 3 The effect of recombitant bovine somatotrophin on milk production, reproduction
and health of dairy cows
C. Thomas, I. D. Johnsson, W. J. Fisher, G. A. Bloomfield and S. V. Morant
- 1540 4 Evaluation of avotan* avoparcin for improving milk production of dairy cows in
Europe
L. D. Parker, H. Smith and D. W. Rock
- 1600 T E A

ALTERNATIVE ANIMAL PRODUCTS FROM RUMINANTS

CHAIRMAN - PROF. A. S. JONES

- 1620 5 **Alternative sources of meat**
J. A. Milne, W. J. Hamilton and M. Lippert, HFRO
- 1645 6 **Developments in goat and sheep fibre production**
A. J. F. Russel, M. Ryder and M. Lippert, HFRO
- 1710 7 **Milk products from sheep and goats**
T. T. Treacher and A. Mowlem, IGAP, Hurley
- 1735 **Discussion**
- 1800 Session Ends
- 1900 SCARBOROUGH TOWN COUNCIL RECEPTION
- 1945 ANNUAL DINNER

P I G N U T R I T I O N

CHAIRMAN - DR D. J. A. COLE

- 1440 8 Protein growth in pigs
C T Whittemore and J B Tullis
- 1500 9 Single and choice-feeding of pigs as methods of investigating their ability to control protein intake
I. Kyriazakis, G. C. Emmans and C. T. Whittemore
- 1520 10 Effects of diet density and environmental temperature on performance and carcass quality of pigs fed ad libitum to bacon weight
S. A. Edwards, A. W. Armsby and H. H. Spechter
- 1540 11 The use of simple methods of extracting the antinutritive factors in rapeseed meal to improve the growth of pigs and rats
V. R. Fowler, A. Pusztai, R. McWilliam and R. Frank
- 1600 T E A

S O W P E R F O R M A N C E

CHAIRMAN - DR M. K. CURRAN

- 1620 12 The influence of the nutritional state of the lactating sow on oestradiol secretion post-weaning
W. H. Close, J. M. Matte and H. L. Buttle
- 1640 13 Evaluation of partial weaning and treatment with PG600 at weaning in relation to subsequent reproduction in the sow
G. R. Foxcroft, P. R. English, P. R. Bampton, O. McPherson, M. Birnie and L. J. Bark
- 1700 14 Effect of lactational and post-weaning feeding on the reproductive performance of primiparous sows
S. V. Goodman and S. A. Edwards
- 1720 15 Effects of feeding level and of late pregnancy increases in feed allocation on the reproductive performance of sows
V.R. Fowler, M. Curran, O. Davies, S. Edwards, M. Ellis, M. Franklin, M. Hazzledine, P. Lee, B. Lynch, A. M. Petchey, N. Walker, H. Vint and J. Wood
- 1740 16 Some conclusions of the AFRC working party on the energy requirements of sows and boars
W. H. Close
- 1820 Session Ends
- 1900 SCARBOROUGH TOWN COUNCIL RECEPTION
- 1945 ANNUAL DINNER

P I G P E R F O R M A N C E

CHAIRMAN - DR P. ROWLINSON

- 0850 17 The administration of a probiotic agent to early-weaned piglets
M. A. Varley and H. Royle
- 0910 18 Minimising disruption of piglets at weaning
L. E. Wheatley
- 0930 19 Partial weaning. The growth of smaller piglets remaining on the sow following
the earlier weaning of larger litter mates, relative to equivalent piglets in
control litters
P. R. English, P. R. Bampton, O. McPherson, M. Birnie, L. J. Bark and G. R.
Foxcroft
- 0950 20 Estimation of sire with feeding regime interaction in pigs
N. D. Cameron and M. K. Curran
- 1010 21 Comparison of Large White and Duroc boars as terminal sires
S P Simpson, A J Webb and S Dick
- 1030 C O F F E E

G R O W T H

CHAIRMAN - DR D. LISTER

- 1050 22 **Options at the fundamental level for growth regulation in farm livestock**
P. J. Reeds, RRI
- 1120 23 **The application of new techniques for the control of growth in farm livestock**
G. E. Laming, University of Nottingham
- 1200 **Discussion**
- 1230 L U N C H

0850

Discussion of Monday's Poster session -
**THE UTILISATION OF AGRICULTURAL CROPS AND
BY-PRODUCTS FOR INDUSTRIAL AND ANIMAL USE IN
BRITAIN AND THE THIRD WORLD**

CHAIRMAN - DR E. R. ØRSKOV

1030 C O F F E E

R E P R O D U C T I O N

CHAIRMAN - DR J. J. ROBINSON

- 1050 24 The effect of antisteroid antibodies upon the mating performance of early lambing mule ewes also treated with progestagen sponges and PMSG
D. N. Logue, B. J. Keeling, M. E. King, G. J. Gunn, G. M. Webster, G. H. Sadeghi, B. S. Morris and J. Clayton
- 1110 25 An intraruminal soluble glass bolus containing melatonin - a potential system for early lamb production
A. L. Poulton, A. M. Symons, J. Arendt and M. I Kelly
- 1130 26 The effect of body condition, feed level and temporary calf separation on the post-partum anoestrous period and LH and FSH levels in beef cows
I. A. Wright, S. M. Rhind, A. J. F. Russel, T. K. Whyte and A. J. McBean
- 1150 27 Effect of timing of intrauterine insemination with frozen-thawed semen on conception rates in ewes
R. C. F. Findlater, W. Haresign and R. M. Curnock
- 1210 28 In vitro fertilization of bovine oocytes matured in vitro
I. Gordon, K. H. Lu, M. P. Boland and T. F. Crosby
- 1230 L U N C H

DAIRY COW NUTRITION

CHAIRMAN - DR E. W. JONES

- 1350 29 The effects of level of winter feeding and buffer-feeding during the grazing season on the milk-production of January/February calving dairy cows
C. S. Mayne, S. C. F. Woodcock and A. J. Clements
- 1410 30 Effect of concentrate to silage ratio and hoof trimming on lameness in dairy cows
F. J. Manson and J. D. Leaver
- 1430 31 Effect of silage feeding system and concentrate composition on the performance of lactating dairy cows
R. H. Phipps, J. D. Sutton and R. F. Weller
- 1450 32 Starch: fibre ratio of concentrates for dairy cows
J. D. Sutton, J. A. Bines, D. J. Napper and S. V. Morant
- 1510 33 Maize gluten as a supplement to grass silage for dairy cattle
F. J. Gordon
- 1530 T E A

PLENARY SESSION

INDUSTRY PROBLEMS AND RESEARCH NEEDS

CHAIRMAN - PROF. J. M. M. CUNNINGHAM

- 1550 34 **Industry problems**
J. B. Dent, University of Edinburgh
- 1615 35 **Future basic research in animal production**
M. Peaker, Hannah Research Institute
- 1640 36 **Future applied research in the animal production industry**
D. W. F. Shannon, MAFF
- 1705 **Discussion**
- 1745 Session Ends
- 1800 ANNUAL GENERAL MEETING
- 1930 DINNER
onwards

S H E E P P R O D U C T I O N

CHAIRMAN - DR A. J. F. RUSSEL

- 1350 37 Effect of sward surface height of mixed swards of ryegrass/white clover on the intake and performance by ewes and their twin lambs
 R. J. Orr, P. D. Penning, A. J. Parsons and T. I. Treacher
- 1410 38 Lamb growth performance and rate of finishing in relation to sward height and herbage mass on set-stocked swards
 M. D. Lloyd, G. Swift, A. Hunter, S. Swanston and J. M. Doney
- 1430 39 Liveweight gain of weaned lambs grazing swards increasing, decreasing or at constant surface heights
 J. M. Doney, J. A. Milne, I. R. White, P. Colgrove and M. D. Lloyd
- 1450 40 Supplementation of Scottish Blackface gimmers during mating and mid-pregnancy
 A. Waterhouse and T. H. McClelland
- 1510 41 The ability of lambs to recover from a period of underfeeding
 M. Cropper, M. D. Lloyd, G. C. Emmans and C. Hinks

1530 T E A

1550-1745

Ballroom

P L E N A R Y S E S S I O N

I N D U S T R Y P R O B L E M S A N D R E S E A R C H N E E D S

See opposite page for details

1800 ANNUAL GENERAL MEETING

1930
onwards DINNER

**DEVELOPMENTS IN FEED EVALUATION AND INTAKE
PREDICTION FOR RUMINANTS**

CHAIRMAN - DR B. R. COTTRILL

- 0850 42 **Recent developments in predicting the nutritive value grass silage for ruminants**
D. I. Givens, ADAS Feed Evaluation Unit, Stratford-on-Avon
- 0915 43 **Recent developments in predicting the nutritive value of compound feeds for ruminants**
B. C. Cooke, Dalgety Agriculture, Bristol
- 0940 44 **Prediction of voluntary feed intake from feed analysis**
J. M. Forbes, University of Leeds
- 1005 **Discussion**
- 1030 C O F F E E

**CLASSIFICATION AND GRADING OF MEAT ANIMALS:
OBJECTIVES AND FUTURE PROSPECTS**

CHAIRMAN - DR J. D. WOOD

- 1050 46 **Carcass classification in the marketing of meat animals**
A. J. Kempster, MLC, Milton Keynes
- 1115 47 **Limitations of present classification schemes and new developments**
A. V. Fisher, IFR, Bristol
- 1120 48 **Meeting certification/classification targets for beef**
R. M. Crabtree, ADAS, Bristol
- 1135 49 **The producer's view of marketing meat animals**
P. Cockburn, University of Reading
- 1150 **Discussion**
- 1230 L U N C H

0850

Discussion of Tuesday's Poster session -
RECENT DEVELOPMENTS IN PIG PRODUCTION

CHAIRMAN - PROF. J. H. D. PRESCOTT

1030 C O F F E E

S I L A G E A N D B E E F P R O D U C T I O N

CHAIRMAN - DR B. G. LOWMAN

- 1050 50 Fermentation characteristics in clamp and big bale silages
D. I. Givens, S. Roscoe and J. M. Brunnen
- 1110 51 Patterns of winter feeding for spring born suckled calves in relation to their
subsequent performance at grass
D. G. Chapple
- 1130 52 Effects of a period of severely restricted feed intake and growth on subsequent
appetite, growth and nitrogen balance of Friesian steers
P. E. V. Williams and A. Macdearmid
- 1150 53 Fat growth and its partition between depots in crossbred steers by different sire
breeds
K. J. Solly, A. J. Kempster and J. R. Southgate
- 1210 54 The effects of a combination of the Beta agonist clenbuterol and bovine pituitary
growth hormone on growth of milk-fed calves
P. E. V. Williams, G. M. Innes, K. Ogden and S. James
- 1230 L U N C H

RUMINANT NUTRITION AND PRODUCTION

CHAIRMAN - DR J. D. OLDHAM

- 1330 55 Use of allantoin excretion to assess the energetic efficiency of rumen microbial protein yield in sheep
R. J. Dewhurst, C. J. Waters and A. J. F. Webster
- 1350 56 Comparison of systems for estimating protein allowances for dairy cows
C. J. Waters, R. J. Dewhurst and A. J. F. Webster
- 1410 57 The effect of grinding and pelleting of roughages of known degradability on voluntary intake and digestibility by sheep
F. D. DeB. Hovell, R. Campos-Arceu and D. J. Kyle
- 1430 58 The predicted and actual rates of intake of a high quality feed by Suffolk rams from 20-70 kg liveweight
G. C. Emmans, W. S. Dingwall, J. FitzSimons and G. Simm
- 1450 59 A selection index for lean meat production in sheep
G. Simm and W. S. Dingwall
- 1510 CLOSE OF MEETING

P I G P R O D U C T I O N

CHAIRMAN - DR B. HARDY

- 1330 60 The amino acid requirements of pigs for maintenance and for growth
M. F. Fuller, R. McWilliam and T. C. Wang
- 1350 61 Effects of Beta agonist GAH/034 on carcass composition and meat quality in pigs
J. D. Wood, A. J. Brown, M. J. Kilpatrick and J. E. Bushell
- 1410 62 Relationship between ultrasonic fat depth assessments of commercial breeding sows
at the P2 and hip bone positions and herd performance
P. H. Simmins
- 1430 63 The influence of fatness and fat change on the performance of breeding gilts
P. R. Eastham and C. T. Whittemore
- 1450 64 The effect of farrowing house temperature on piglet behaviour and creep use
J. Barber and R. A. Bourne
- 1510 CLOSE OF MEETING

THE UTILISATION OF AGRICULTURAL CROPS AND
BY-PRODUCTS FOR INDUSTRIAL AND ANIMAL USE IN
BRITAIN AND THE THIRD WORLD

- 65 Dried poultry manure as a nitrogen supplement for young cattle on winter grazing
T. Smith, S. Sibanda, C. R. de Souza, C. Chakanyuka and R. M. Chihora
- 66 First observations on straw treatment with ammonium bicarbonate
I. Andrighetto and M. Ramanzin
- 67 Intake and digestibility of barley straw by goats: effect of ammonia treatment of straw
and straw-previously-refused by goats
R. A. Wahed and E. Owen
- 68 Treatment of barley straw with mixtures of calcium hydroxide and urea: effect on intake
and digestibility in sheep
Md. Shahiduzzaman and E. Owen
- 69 Comparative digestibilities of untreated, ammonia-treated and urea-treated barley straws
by sheep
R. P. Sherwood and E. Owen
- 70 Genetic and environmental effects on barley straw quality
B. S. Capper, S. Rihawi and I. Nagi
- 71 The effect of variety, type of straw and ammonia treatment on digestibility and growth
rate in steers
G. W. Reid, E. R. Ørskov and M. Kay
- 72 Effect on digestibility of selecting cows with high or low particle outflow rate
E. R. Ørskov and I. A. Oiwang
- 73 Studies on botanical proportions and nutritive value of varieties of cereal straws and
the ability of sheep to select the botanical part with the greatest value
W. Shand, O. Shehata, E. R. Ørskov and A. F. Morrice
- 74 Botanical composition, chemical analysis and cellulase solubility of rice straw from
different varieties
S. J. Bainton, V. E. Plumb, B. S. Capper and B. O. Juliano
- 75 Industrial use of straw
F. Rexen, L. Munck, P. B. Petersen and A. de Francisco

S H E E P P R O D U C T I O N

- 76 Effects of ratio of white clover to grass in silage and concentrate supplementation on intake and performance of ewes in late pregnancy
R. J. Orr and T. T. Treacher
- 77 The effect of a dietary supplement of protected fat on the yield and composition of milk from ewes receiving different levels of fish meal in their diet
M. Kovessy, J. J. Robinson, A. K. Lough and R. P. Aitken
- 78 The role of magnesium in the aetiology of urolithiasis in fattening store lambs and intensively reared lambs
A. Harker and D. Cuddeford
- 79 Energy and nitrogen retention in milk-fed lambs
A. R. Mantecon, R. Pelaez and F. J. Ovejero
- 80 Supplementation of silage for finishing lambs
C. M. Minter and W. M. Tempest
- 81 Safe grazing for weaned lambs
M. S. Griffiths and C. James
- 82 Growth rate and carcass composition of Border Leicester x Scottish Blackface (BLB), East Friesland x Blackface (EFB) and East Friesland x North Country Cheviot (EFC) lambs
J. M. Doney, A. D. M. Smith and D. A. Sim
- 83 The effect of strain, initial liveweight and feed type on the growth performance and carcass characteristics of Scottish Blackface lambs
M. D. Lloyd, P. Phillips, I. A. Dickson, A. Waterhouse, I. A. Clark, T. H. McClelland and D. McCalman
- 84 Liveweight losses in store lambs during transit between the Island of Lewis and the mainland of Scotland and analysis of associated factors
S. Kerr, G. Burgess, P. R. English, J. Williamson, O. McPherson and D. Overton
- 85 Lamb production from summer lambing ewes
M. E. King and B. J. Keeling
- 86 The effect of sward height on ewe and lamb performance
B. J. Keeling, C. K. Mackie, M. E. King and C. W. Watt
- 87 Alternative ways of oestrus induction in early lambing ewes
B. J. Keeling, G. J. Gunn, M. E. King, D. N. Logue, A. Gill, R. G. Rodway and M. Ibrahim
- 88 Out-of-season breeding in adult Suffolk ewes following light and melatonin treatment
S. J. Ward and H. Ll. Williams
- 89 Effect of level of food intake on the reproductive performance of ewes in different levels of body condition at mating, following passive immunisation against testosterone
S. M. Rhind, B. A. Morris and J. Clayton

Tuesday 24 March 1987

Poster Session

South Lounge

Discussion of THE UTILISATION OF AGRICULTURAL CROPS AND
BY-PRODUCTS FOR INDUSTRIAL AND ANIMAL USE IN
BRITAIN AND THE THIRD WORLD

0850-1030

CHAIRMAN - DR E. R. ORSKOV

Tuesday 24 March 1987

Poster Session

Session opens 1100

Authors in attendance 1400 - 1530

Sea View Lounge

RECENT DEVELOPMENTS IN
PIG PRODUCTION

- 90 Digestibility of amino acids in maize, wheat and barley meals measured in pigs with ileo-rectal anastomosis and isolation of the large intestine
S. Green, S. Bertrand, M. Duron and R. Maillard
- 91 An optimal dietary amino acid pattern for growing pigs
T. C. Wang and M. F. Fuller
- 92 Effect of diet formulation using apparent faecal and ileal amino acid digestibility of heated fish meals on pig performance
S. Jagger, D. J. A. Cole and J. Wiseman
- 93 The response of the growing pig to dietary concentration of energy
D. C. Patterson
- 94 Digestion of sugar beet in young growing pigs and implications for the value of fermented energy
J. Q. Zhu and V. R. Fowler
- 95 Level of wheat bran and saturation of lipid on fibre digestibility in the pig
H. R. Stebbens, C. A. Morgan and C. T. Whittemore
- 96 Naked oats in the diets of young pigs
O. D. Davies
- 97 The use of diets containing high levels of copra meal for growing/finishing pigs
P. Thorne, D. J. A. Cole and J. Wiseman
- 98 Observations on carcass and meat quality in Duroc, Landrace and Duroc x Landrace pigs
J. D. Wood, A. J. Kempster, P. J. David and M. Bovey
- 99 The effect of feeding intensity during pregnancy and of the length of lactation on the efficiency of meat production from once-bred gilts
V. R. Fowler, M. Ellis, M. A. Varley and M. Franklin

RECENT DEVELOPMENTS IN
PIG PRODUCTION
(cont.)

- 100 Fasting times in British slaughter pigs
E. A. Bevis and P. D. Warriss
- 101 The relationship between age at first effective service and numbers born in the gilt litter in purebred pigs
J. T. Mercer
- 102 An assessment of a novel feed hopper with water available within the trough for finishing pigs
D. C. Patterson
- 103 Evaluation of hunger in pigs using operant conditioning
A. B. Lawrence, M. C. Appleby and H. C. Macleod
- 104 The effect of pre-weaning diet on post-weaning health and performance of 3 week weaned pigs
A. L. Lightfoot, B. G. Miller and H. H. Spechter
- 105 Restricted floor feeding or ad libitum feeding of growing pigs using a prototype micro-processor controlled feed dispenser
A. L. Lightfoot, A. W. Armsby and C. F. Widdows
- 106 Space allowances for growing pigs on fully slatted floors
S. A. Edwards, A. W. Armsby and H. H. Spechter
- 107 The effect of stocking density on performance of pigs weaned at three weeks
L. M. Paterson

Balcony

BEEF PRODUCTION

- 117 Food additives for growing cattle
S. Thomas and C. K. Mackie
- 118 The effects of ecosyl, scotsil and add-f treated grass silages on the intake and performance of Friesian steers
J. R. Weddell and D. S. Yackiminie
- 119 The effects on daily gain and carcasses of implants containing Testosterone and Oestradiol on heifers and implants containing Zeranol on intensive cereal bulls
J. R. Southgate, A. R. Peters, S. Dean and J. Everett

Wednesday 25 March 1987

Poster Session

South Lounge

Discussion of **RECENT DEVELOPMENTS IN
PIG PRODUCTION**

0850-1030

CHAIRMAN - PROF J. H. D. PRESCOTT

Wednesday 25 March 1987

Poster Session

Session opens 0850

Authors in attendance 1030 - 1200
Balcony

DAIRY PRODUCTION

- 108 Milk and the consumer, attitudes and behaviour - implications for milk production
G. Wright and S. Fallows
- 109 A computer program to predict the consequences of current management practices in the
dairy herd
E. M. Bell and A. C. Whithorn
- 110 A comparison of Hereford x Friesian & Limousin x Friesian as suckler dams
M. J. Drennan and G. J. More O'Ferrall
- 111 The performance of summer calving dairy cows
J. D. Leaver
- 112 The use of exotic sires for mating to maiden suckler heifers
D. F. Dolman and P. J. Broadbent
- 113 Response of dairy cows to compounds varying in level and profile of undegradable
essential amino acids
P. J. Strachan, J. S. Wilson and N. C. Kelly
- 114 The effect of variety of barley straw and ammonia treatment on intake digestibility and
milk yields in Friesian cows
C. Tait, G. W. Reid and E. R. Orskov
- 115 Effect of a protected lipid supplement on milk production and composition in the dairy
cow
C. P. Freeman, M. A. Lindeman, W. S. Thickett and N. C. Kelly
- 116 Effect of feeding fodder beet on feed intake and dairy cow performance
M. S. Sabri, D. J. Roberts and N. W. Offer

G E N E R A L

- 120 Grassland utilisation in England and Wales 1984-85 and 1985-86
A. H. Poole, S. J. Mabey and S. Peel
- 121 Factors influencing the gross energy content of grass silage
D. I. Givens and J. M. Brunnen
- 122 The effect of molasses intake on the rumen pH and degradability of hay dry matter in sheep
J. M. Brunnen and D. I. Givens
- 123 The effect of fineness of grinding of a sample on the loss of material from nylon bags incubated in the rumen of sheep
D. J. Kyle, F. D. DeB. Hovell and J. Bajracharya
- 124 The effect of level of protein in the concentrates on hay intake, milk production and digestive processes by Saanen goats
M. S. Badamana and J. D. Sutton
- 125 Gizzard erosion in broilers when high-fishmeal diets are supplemented with sodium bicarbonate
R. A. Cooper and A. Hill

Summaries for the following papers were not received in time for printing: 12, 16, 34, 35, 36, 49, 75.