

BRITISH SOCIETY

OF

ANIMAL PRODUCTION

WINTER MEETING

21 - 23 March 1988

GRAND HOTEL

SCARBOROUGH

PROGRAMME AND SUMMARIES

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BRITISH SOCIETY OF ANIMAL PRODUCTION

WINTER MEETING 1988

PROGRAMME

Day	Time	THEATRE SESSIONS		POSTER SESSIONS
MONDAY 21 MARCH		Ballroom	South Lounge	Session opens 1430 Authors in attendance 1600-1730 Manipulation of Composition and Quality of Animal Products, Sea View Lounge General, Balcony
	1430	The President		
	1440	Manipulation of Milk Production in Dairy Cows	Aspects of Pig Behaviour and Nutrition	
	1600	T E A		
	1620	Technical and Management Options for Milk Production	Pig Genetics and Physiology	
	1900 1945	SCARBOROUGH TOWN COUNCIL RECEPTION ANNUAL DINNER		
TUESDAY 22 MARCH	0850	Forage Intake and Utilisation by Dairy Cows	Sheep Production and Nutrition	Discussion of Monday's Composition and Quality session, 0900 - 1030 Sea View Lounge Session opens 1100 Sea View Lounge Developments in Sheep Production Authors in attendance 1100 - 1230 Discussion 1400 - 1530 Balcony Dairy Cow Authors in attendance 1400 - 1530
	1030	C O F F E E		
	1050	Energy and Protein Utilisation by Dairy Cows	Management - Disease Interactions in Piglets	
	1230	L U N C H		
	1350	Raw Material Variation - Sources and Effects	Sow Performance	
	1530	T E A		
	1550	PLENARY SESSION A debate on "This house believes that the future of animal production lies in molecular biology"		
	1800	ANNUAL GENERAL MEETING		
1930	D I N N E R			
WEDNESDAY 23 MARCH	0900	SIR JOHN HAMMOND MEMORIAL LECTURE Animal Production Research: Hammond to the 21st Century		Session opens 0900 Authors in attendance 1030-1200 Nutrition and Environment of Newborn Pigs, Sea View Lounge Sow Nutrition, Sea View Lounge Nutrition of Growing and Finishing Pigs, Sea View Lounge Beef, Balcony
	1010	C O F F E E		
	1030	Control of Reproduction in Seasonally Breeding Ruminants	Meat Composition	
	1210	L U N C H		
	1330	Reproductive Physiology	Beef Production	
1510	CLOSE OF MEETING			

MANIPULATION OF MILK PRODUCTION IN DAIRY COWS

CHAIRMAN - PROF. D G ARMSTRONG

- 1430 Opening remarks by the BSAP President, Dr A J F Russel
- 1 Withdrawn
- 1500 2 The effect of long-term daily administration of bovine somatotrophin on the performance of dairy heifers during their first lactation
 R F Butterwick , P Rowlinson, T E C Weekes, D S Parker and D G Armstrong
- 1520 3 The influence of the dietary inclusion of the antibiotic avoparcin on the lactation performance of dairy cows
 M M Abubakar , P Rowlinson and D G Armstrong
- 1540 4 The effect of light supplementation on the production and behaviour of dairy cows
 C J C Phillips and S A Schofield
- 1600 T E A

TECHNICAL AND MANAGEMENT OPTIONS FOR MILK PRODUCTION

CHAIRMAN - PROF. J H D PRESCOTT

- 1620 5 **Management options within a quota regime**
 J A Craven, MMB Wrexham
- 1645 6 **Land and food resource options**
 C Thomas, IGAP Hurley and J D Leaver, Wye College
- 1710 7 **The genetic improvement of dairy cattle**
 R B Land, IAPGR-ERS Roslin, G Simm, APAD ESCA, R Thompson, IAPGR-ERS King's Buildings and J A Woolliams, IAPGR-ERS Roslin
- 1735 **Discussion**
- 1800 Session ends
- 1900 SCARBOROUGH TOWN COUNCIL RECEPTION
- 1945 ANNUAL DINNER

F O R A G E I N T A K E A N D U T I L I S A T I O N B Y D A I R Y C O W S

CHAIRMAN - PROF. J D LEAVER

- 0850 17 Relationships between digestibility and energy value in primary growth fresh herbage
D I Givens and J M Everington
- 0910 18 The effects of partial storage-feeding and season of calving on the herbage utilization, production, health and reproductive performance of dairy cows
C J C Phillips
- 0930 19 The effects of herbage height and the provision of high and low quality silage for dairy cows grazing a high clover pasture on sward composition, milk production and ingestive behaviour
J P Murray-Evans , K Hecheimi and C J C Phillips
- 0950 20 Effect of type of silage on rate of eating in lactating cows
M Gill , A Sargeant, H D St C Neal and P M Hughes
- 1010 21 Effects of offering malt distillers grains (draff) as a replacement for concentrates in silage based diets for dairy cows
J J Hyslop and D J Roberts
- 1030 C O F F E E

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

CHAIRMAN - DR J C MACRAE

- 1050 22 Metabolisable energy content of a saponified palm fat product for ruminants
D I Givens , J M Everington and N Shepperson
- 1110 23 The feeding of dairy cows with fodder beet and concentrate containing two levels of protein
D J Roberts and M S Sabri
- 1130 24 Comparison of dried molassed and unmolassed sugar beet feed and barley at two protein levels for milk production in early lactation
J D Sutton , S R Daley, M J Haines and D J Thomson
- 1150 25 Comparison of molassed and unmolassed sugar beet feed and barley as energy supplements on nutrient digestion and supply in silage fed cows
D E Beaver , J D Sutton, D J Thomson, D J Napper and D L Gale
- 1210 26 Effects of manipulating rumen fermentation and outflow rate in sheep on microbial protein yield as estimated from allantoin excretion
R J Dewhurst and A J F Webster
- 1230 L U N C H

RAW MATERIAL VARIATION - SOURCES AND EFFECTS

CHAIRMAN - DR B C COOKE

- 1350 36 **Sources of variation in the nutritional value of raw materials**
J M McNab, IGAP Roslin
- 1430 37 **Processing effects on the nutritive value of raw materials and finished feeds and the implications on animal production**
J Delort-Laval, INRA Nantes
- 1510 **Discussion**
- 1530 T E A

1550

PLENARY SESSION

CHAIRMAN - DR D LISTER

This will take the form of a debate on the following motion:-

"THIS HOUSE BELIEVES THAT THE FUTURE OF ANIMAL PRODUCTION LIES IN MOLECULAR BIOLOGY"

Speaking for the motion:-

B A Cross, IAPGR Babraham

Speaking against the motion:-

A J F Webster, University of Bristol

- 1745 Session ends
- 1800 ANNUAL GENERAL MEETING
- 1930 DINNER
onwards

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

CHAIRMAN - DR J F O'GRADY

- 1350 38 Effect of delaying service in purebred sows on first and second litter performance
J T Mercer and M J Francis
- 1410 39 The influence of fatness at parturition, nutrition during lactation and litter size on the performance of breeding sows. 1. Changes in backfat thickness, body weight and conformation
H Yang, P Phillips, C T Whittemore and P R Eastham
- 1430 40 The influence of fatness at parturition, nutrition during lactation and litter size on the performance of breeding sows. 2. Reproductive performance
C T Whittemore, H Yang, P Phillips and P R Eastham
- 1450 41 The effect of body reserves at farrowing on the reproductive performance of first-litter sows
B P Mullan and I H Williams
- 1510 42 The effect of food intake prior to farrowing on the body composition of first-litter sows during lactation
B P Mullan and I H Williams
- 1530 T E A

Ballroom

1550 - 1745

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

See opposite page for details

1800 ANNUAL GENERAL MEETING

1930 DINNER
onwards

Wednesday 23 March 1988

Theatre Session
Ballroom

S I R J O H N H A M M O N D M E M O R I A L L E C T U R E

CHAIRMAN - DR A J F RUSSEL

0900 **Animal Production Research: Hammond to the 21st Century**
R T Berg, University of Alberta, Canada

1010 COFFEE

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

CHAIRMAN - DR R B LAND

1030 43 **Control of reproduction in seasonally breeding ruminants**
G A Lincoln, MRC Reproductive Biology Unit, Edinburgh

1055 44 **Current options for altering the breeding season**
R G Rodway, University of Leeds

1120 45 **The practical implications of altering the sheep breeding season**
C F R Slade, ADAS Wolverhampton

1145 **Discussion**

1210 L U N C H

0900 - 1010 S I R J O H N H A M M O N D M E M O R I A L L E C T U R E

See opposite page for details

1010 C O F F E E

South Lounge

M E A T C O M P O S I T I O N

CHAIRMAN - DR A J KEMPSTER

- 1030 46 Evaluation of seven ultrasonic machines for estimating carcass composition in live bulls
 S J Porter , J P Chadwick, M G Owen and S J Page
- 1050 47 Diets to maintain meat content of overfat lambs on slimming regimes
 J E Vipond , M E King and G Wetherill
- 1110 48 Differences in the relation between carcass visual scores and composition in heifers and steers
 A V Fisher , J S Broadbent, C Coutts, R M Kay and I Rigby
- 1130 49 Observations on lean prediction in the pig
 J R Walters and S P Simpson
- 1150 50 Sensory and consumer testing of meat from ram lambs
 E Dransfield , G Nute and B Walters
- 1210 L U N C H

REPRODUCTIVE PHYSIOLOGY

CHAIRMAN - DR J J ROBINSON

- 1330 51 Effect of melatonin implants on reproductive performance in ewes
W Haresign , A R Peters, G M Webster, J W B King and L D Staples
- 1350 52 Effect of ewe body condition on mean ovulation rate and associated hypothalamic
activity and responsiveness to GnRH
S M Rhind , A S McNeilly, W A C McKelvey and S McMillen
- 1410 53 Production of cattle embryos by in vitro and in vivo culture
I Gordon , K H Lu, M Gallagher and H McGovern
- 1430 54 The effect of melatonin on the peripheral concentrations of LH and progesterone
post-oestrus and on conception rate in ewes
J M Wallace , J J Robinson, S Wigzell and R P Aitken
- 1450 55 The effect of food intake during lactation and early pregnancy on plasma
progesterone concentrations and prolificacy in multiparous sows
G R Prime , M A Varley and H W Symonds
- 1510 CLOSE OF MEETING

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

CHAIRMAN - DR A J F RUSSEL

- 1330 56 Enterococcus faecium fed as a probiotic in the rearing of purchased calves
 R M Kay and P Poole
- 1350 57 The use of sodium bicarbonate in barley beef diets
 D R Neilson , B G Lowman, H Parkinson, J W Browne and E A Hunter
- 1410 58 The influence of straw quality and level of concentrate in completely mixed diets
 on intake and growth rate in steers
 M Kay , G W Reid and E. R. Ørskov
- 1430 59 Factors affecting the performance and carcass characteristics of finishing grazed
 cattle within a 20 month beef system
 B G Lowman , C E Hinks, G Swift, D R Neilson and E A Hunter
- 1450 60 The effects of winter feeding level and summer sward height on the performance of
 autumn calving beef cows and their calves
 I A Wright , T K Whyte and K Osoro
- 1510 CLOSE OF MEETING

Monday 21 March 1988

Poster Session

Sea View Lounge

Session opens 1430

Authors in attendance 1600 - 1730

Discussion on Tuesday 0900 - 1030

MANIPULATION OF COMPOSITION AND QUALITY OF ANIMAL PRODUCTS

- 61 Carcass fat quality and performance of lambs given diets containing protected fat
D A R Davies , B W Butler-Hogg, P Buxton and C B Gallo
- 62 Effect of breed and sex on the deposition of branched-chain fatty acids in lamb fat
M B Enser , J D Wood, P Sinnett-Smith and J Woolliams
- 63 Beta-agonists improve the carcass but may reduce meat quality in sheep
P D Warriss and S C Kestin
- 64 Incidence of soft fat in UK pigs
E Dransfield and A J Kempster
- 65 The influence of dietary linoleic acid on backfat firmness in bacon weight pigs
N J Prescott and J D Wood
- 66 Effect of high fat diets rich in stearate or oleate-containing triglycerides on backfat consistency and fatty acid composition in bacon pigs
J L Roberts and M B Enser
- 67 The effect of breed and diet on pig carcass quality
S A Edwards , J D Wood, C B Moncrieff, S J Porter and J M Whitehouse
- 68 Genetic effects on pork product composition and quality
M Bovey , M Bichard and E A Bruce
- 69 Chemical composition of backfat in 58kg pig carcasses covering a wide range of fat thickness
M B Enser , J D Wood, C B Moncrieff and A J Kempster
- 70 Lean meat quality of different pig breed types
P D Warriss , S C Kestin, S N Brown and E A Bevis
- 71 Consumer attitudes towards meat
J Woodward
- 72 Animal production - a case study of consumer reaction with special reference to the diet and health issue
G Wright
- 73 An estimate of the incidence of dark cutting beef in the United Kingdom
S N Brown and E A Bevis
- 74 The use of oats in diets for dairy cows as a means of reducing the saturated fatty acid content of milk fat
P A Martin and P C Thomas
- 75 The prediction of milk fat concentration from the characteristics of a cow's diet
S V Morant and J D Sutton
- 76 Low-glucosinolate rapeseed meal as a protein source for milk production
I Vincent and R Hill

GENERAL

- 77 The effect of roughage quality on intake, digestion and rumen function in sheep
F D DeB Hovell , S M Masvaure, P C Gregory and D J Kyle
- 78 Appraisal of the York electronics egg quality equipment
S Hoste , H Walker, T Bedford and E Butler
- 79 A survey of consumers' preference and demand for recreational enterprises on farms
H J Morrow , G Burgess and P R English
- 80 Upgrading barley straw for goats : the effectiveness of a sodium hydroxide and urea dip-
method
J H M Wrathall , E Owen and D J Pike
- 81 The effect of supplementary nickel on urea metabolism in sheep given a low-protein diet
J S Milne , F G Whitelaw and J Price
- 82 Depressing effect of rumen distension on silage intake of the lactating dairy cow
J N Mbanya , M H Anil and J M Forbes
- 83 Effect of cellulase enzymes on degradation characteristics of ensiled rice straw
Y Nakashima , E R ~~Pr~~skov, K Ambo and Y Takase
- 84 Intake and utilization of whole grain supplements by young sheep
B J Hosking and A R Egan
- 85 Degradation characteristics of wheat, barley and oat straws untreated and treated with
ammonia in an oven
J M Everington and D I Givens
- 86 Nucleic acids in grasses and grass silages
A B McAllan and G D Braithwaite
- 87 Dietary energy values of fats for poultry as influenced by age and rate of inclusion
F Salvador and J. Wiseman
- 88 An ELISA technique for the determination of soya bean lectin in animal feeds
R I Prince , B G Miller, M Bailey, E Telemo, F J Bourne and D Patel

Tuesday 22 March 1988

Poster Session

Sea View Lounge

Discussion of **MANIPULATION OF COMPOSITION AND QUALITY OF ANIMAL PRODUCTS**

0900 - 1030

CHAIRMAN - DR J D WOOD

Sea View Lounge

Session opens 1100

Authors in attendance 1100 - 1230

Discussion at 1400 - 1530

DEVELOPMENTS IN SHEEP PRODUCTION

- 89 Reproductive success of ewe lambs after a period of exposure to vasectomised rams
N Z Al-Mauly , M J Bryant and F J Cunningham
- 90 Variation in the seasonal oestrus period in three breeds of Greek sheep
A Vosniakou , P Tsakalov and J M Doney
- 91 Melatonin advances and condenses the onset of seasonal breeding in Greek dairy ewes
S Kouimtzis , S Belibasaki and J M Doney
- 92 Duration of melatonin treatment and ovarian activity in ewes
S Wigzell , J J Robinson, J M Wallace and R P Aitken
- 93 A comparison of the effects of ram introduction and treatment with melatonin upon the breeding activity of seasonally anovular ewes
M Rekik , M J Bryant and F J Cunningham
- 94 The effect of pre-treatment with progesterone upon the response of seasonally anovular ewes to the introduction of rams
M Rekik , M J Bryant and F J Cunningham
- 95 Effect of ram introduction upon the pulsatile release of LH and follicle development in pre-puberal ewe lambs
N Z Al-Mauly , M J Bryant and F J Cunningham
- 96 The management and performance of a flock lambled in May
C R Stone
- 97 The effect of dietary protein concentration on the performance of triplet-rearing ewes and their lambs
D A R Davies and C B Gallo
- 98 The intake and performance of pregnant ewes in-wintered on straw-based diets
J M Haigh , M E King, B J Keeling and D M Inglis
- 99 The effect of increasing sward surface height in mid-season on performance of grazing ewes and lambs
C K Mackie , B J Keeling, M E King, S C Wilkinson and G Weatherill
- 100 The effect of supplementary feeding in relation to sward height during the pre- and post-mating periods on reproductive performance of Brecon Cheviot ewes
R G Gunn , I J Maxwell, D A Sim, J R Jones and M E James
- 101 Effect of grass silage quality and three levels of flat rate concentrate feeding to upland ewes in the last trimester of pregnancy, upon voluntary food intake
W J M Black , A R Henderson, M Lewis and J Fitzsimons
- 102 Effect of growth rate on mineral retention and body composition of growing lambs
M Wan Zahari , J K Thompson and D Scott

Tuesday 22 March 1988

Session opens 1100

Poster Session

Sea View Lounge

Authors in attendance 1100 - 1230

DEVELOPMENTS IN SHEEP PRODUCTION (contd.)

- 103 Relationship between body fat reserves and body condition score in sheep at different physiological stages
C Castrillo , M Baucells, J A Guada, A Purroy and I Sebastian
- 104 Effect of barley, sugar beet pulp and protein level in the diet on growth, body composition and blood metabolites and insulin concentrations of entire male lambs
H Galbraith , T McCulloch, J R Scaife, B J Keeling and T Atkinson
- 105 Carcase composition of lambs from dairy breeds of sheep in Greece
D Zygoyiannis , K Stamataris, S Kouimtzis and J M Doney
- 106 A comparison of the effectiveness of different methods of eliminating cobalt deficiency in grazing sheep
J E Paterson, A MacPherson and D Klessa
- 107 Suckling in extensive hill sheep and in sheep housed intensively indoors
I Horrell

Sea View Lounge

Discussion of DEVELOPMENTS IN SHEEP PRODUCTION

1400 - 1530

CHAIRMAN - DR J A MILNE

Tuesday 22 March 1988

Session opens 1100

Balcony

Authors in attendance 1400 - 1530

DAIRY COW

- 108 The influence of the source of dietary fat on dairy cow performance
M M Abubakar , P Rowlinson, D S Parker and D G Armstrong
- 109 Effect of concentrate energy source on lactation performance of dairy cows
M M Abubakar , P Rowlinson and D G Armstrong
- 110 The influence of long-term dietary inclusion of the antibiotic actaplanin on dairy cow performance
M M Abubakar and P Rowlinson
- 111 Effect of body condition at calving and dietary energy supply on milk yield, milk quality and dry-matter intake in lactating cows
G P Jones and P C Garnsworthy
- 112 A comparison of methods to convert foreign progeny test evaluations to approximate United Kingdom improved contemporary comparison equivalents (Friesian/Holstein)
G J T Swanson , H J Bellamy and G Oliver
- 113 The effect of cubicle or straw yard housing and a post-partum injection of prostaglandin on the reproductive performance and production of dairy cows
S A Schofield and C J C Phillips
- 114 Responses by grazing dairy cows given a polymer gel (PH20)
P C Garnsworthy and R J Alford
- 115 The complementary feeding of silage to lactating dairy cows
C P Freeman , W S Thickett, R D Gill and I D A Brigstocke
- 116 Masking the taste of rapeseed meal in dairy compound feeds
G Frederick , J M Forbes and C L Johnson

Wednesday 23 March 1988

Poster Session

Session opens 0900

Sea View Lounge
Authors in attendance 1030 - 1200

NUTRITION AND ENVIRONMENT OF NEWBORN PIGS

- 117 Capacity for utilization of medium chain and long chain triacylglycerols by neonatal piglets
J E Pettigrew , S H Chiang, S G Cornelius, R L Moser and S D Clarke
- 118 Evaluation of a system based on the combination of liquid and dry diets for establishing early weaned pigs
P R English , K Maclean and O MacPherson
- 119 A study of the influence of warming newborn piglets either immediately following birth or soon after the first successful suckling
S R Furniss , P R English, M Birnie and O MacPherson
- 120 Pre-weaning food intake and its effects on post-weaning digestibility of piglet diets containing milk or soya protein
G G Partridge and M Findlay

Wednesday 23 March 1988

Session opens 0900

Sea View Lounge
Authors in attendance 1030 - 1200

SOW NUTRITION

- 121 Effect of energy intake during lactation on nitrogen retention by the sow for 35 days post-weaning
M A Roos , P J Bechtel and R A Easter
- 122 Water use by lactating sows
B P Gill , P H Brooks and J L Carpenter
- 123 Examination of factors affecting litter productivity in pig herds recorded by MLC
D R Guy
- 124 The effect of feed intake during late pregnancy on the performance of sows when fed a common high level during lactation
A J Harker and D J A Cole
- 125 The influence of energy intake in pregnancy and lactation on weight and backfat change of the sow and its effect on piglet performance
P A Lee and W H Close
- 126 The consumption of whey by non-lactating sows
N Walker

NUTRITION OF GROWING AND FINISHING PIGS

- 127 The effect of water delivery rate and drinker number on the water use of growing pigs
J Barber , P H Brooks and J L Carpenter
- 128 The influence of Probios or Tylosin on growth of pigs and development of the
gastrointestinal tract
G K Collington , D S Parker, M Ellis and D G Armstrong
- 129 Fat coated synthetic lysine in diets for growing pigs
M Ellis and D S Parker
- 130 Nutritive value of pig diets containing extruded or milled full-fat rapeseed
I Maskell , M Ellis and R Smithard
- 131 Effects of simple or complex starter diets on the performance of pigs weaned at three
weeks of age
J A Taylor , A G Low and I G Partridge
- 132 Withdrawn
- 133 The effect of a prior experience of feeds on the diets selected by growing pigs
I Kyriazakis , G C Emmans and C T Whittemore
- 134 Digestibility and utilisation of fibre and nitrogen by growing pigs given diets
containing sugar beet pulp
H R Stebbens , C A Morgan and C T Whittemore
- 135 Feed intake, growth and carcass quality of improved genotypes of growing/finishing pigs
S A Chadd and D J A Cole

B E E F

- 136 Detecting oestrus in maiden beef heifers using androgenised cows
P J Broadbent , D C Macdonald, J S M Hutchinson, G Paterson, D F Dolman and G Wilson
- 137 Factors influencing dystokia in heifer replacement for the suckler herd
A W Brydon , B G Lowman and A W Spedding
- 138 Post-weaning compensatory growth in autumn born suckled calves
K Osoro and I A Wright
- 139 Effect of added fat and monensin sodium in the diet on growth performance and rumen and blood characteristics of entire male cattle
D J Kennedy , H Galbraith, J R Scaife and S Thomas
- 140 Sugar beet pulp as a supplement to straw in diets for finishing cattle
S Thomas
- 141 Fish meal supplementation of sugar beet feed or barley based concentrates for finishing beef cattle fed grass silage diets
R M Kay and J I Harland
- 142 Lactobacillus acidophilus fed as a probiotic in the rearing of purchased calves
R M Kay and P Poole
- 143 The effect of a high-strength yeast culture in the diet of early-weaned calves
J Hughes
- 144 Effects of feeding level, slaughter age and implantation on growth and carcass composition of Holstein and Friesian steers
M G Keane and G J More O'Ferrall
- 145 The feeding value of inoculated silage as assessed by the use of beef animals
P G Hooper , P Rowlinson and D G Armstrong
- 146 Duodenal nitrogenous constituent flow in growing steers fed silages prepared with formic acid and enzyme additives
J L Jacobs and A B McAllan

Summaries for the following papers were not received in time for printing:-

15, 16, 32, 33, 36, 37, 115.

Paper No. 132 has been withdrawn.