

GOBIERNO DE CHILE
FUNDACIÓN PARA LA
INNOVACIÓN AGRARIA

010

PROGRAMA DE FORMACIÓN PARA LA INNOVACIÓN AGRARIA

**APOYO A LA PARTICIPACIÓN EN
ACTIVIDADES DE FORMACIÓN**



**PRESENTACIÓN DE PROPUESTAS
POR VENTANILLA ABIERTA**



FORMULARIO

ENERO 2002



PROGRAMA DE FORMACIÓN PARA LA INNOVACIÓN AGRARIA - PARTICIPACIÓN-

FP-V-2002-1-P-005

FOLIO DE
BASES

CÓDIGO
(uso interno)

FP - 02- -

1.- ANTECEDENTES GENERALES DE LA PROPUESTA

NOMBRE DE LA PROPUESTA

The British Society of Animal Science Annual Meeting – International Society of Applied Ethology Meeting

LUGAR DE REALIZACIÓN DE LA ACTIVIDAD

País: Gran Bretaña

Ciudad : York

TIPO O MODALIDAD DE FORMACIÓN

Congreso Científico

AREA DE LA ACTIVIDAD

Rubro: Producción Animal (aplicable a todos los rubros de producción)

Tema : Calidad de productos y Bienestar Animal

INSTITUCIÓN O ENTIDAD RESPONSABLE QUE DICTA U ORGANIZA LA ACTIVIDAD DE FORMACIÓN A LA CUAL SE POSTULA

Nombre: Sociedad Británica de Ciencias Animales (The British Society of Animal Science) y Sociedad Internacional de Etología Aplicada (International Society of Applied Ethology)

Página Web: www.bsas.org.uk- www.isaeuk.freemove.co.uk

POSTULANTE INDIVIDUAL (Adjuntar curriculum vitae en Anexo 1 y pauta resumida en Anexo 2)

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ENTIDAD PATROCINANTE (en caso que corresponda)

Nombre Entidad Patrocinante:

RUT :

Dirección :

Fono :

Fax :

E-mail :

Nombre Representante Legal del Patrocinante:

RUT :

Dirección :

Fono :

Fax :

E-mail :

Firma



FECHA DE REALIZACIÓN

Inicio : ⁵8 de Abril 2002

Término : ¹²10 de Abril 2002

COSTO TOTAL DE LA PROPUESTA

\$1,171,490 1.308.840

FINANCIAMIENTO SOLICITADO

\$ 743,520 878.868

⁶⁷
~~63.5~~ %

APOORTE DE CONTRAPARTE

\$ 427,970 428.972

³³
~~36.5~~ %

2. JUSTIFICACIÓN DE PARTICIPACIÓN EN LA PROPUESTA

Mantenerse actualizado sobre los avances en investigación en Producción Animal es el deber de todo Médico Veterinario que ejerce como tal. Más aún para aquellos que se dedican al área académica, docencia e investigación, ya que son los encargados de difundir el conocimiento a alumnos, profesionales y productores. Este es mi caso particular, trabajando como Investigador Asociado en la Facultad de Agronomía e Ingeniería Forestal (FAIF) de la Pontificia Universidad Católica de Chile (PUC) y como Profesor Part-time de Comportamiento y Bienestar Animal en la Escuela de Medicina Veterinaria de la Universidad Santo Tomas y a partir de este año como profesor de Producción de Fauna Silvestre en la Facultad de Ciencias Veterinarias y Pecuarias de la Universidad de Chile.

En la reunión en la que me interesa participar, se tratarán una gran variedad de temas relacionados con las ciencias animales, tales como avances en nutrición, inmunología, genética, vacas lecheras, equinos, nutrición de cerdos; temas más específicos como enzimas en recursos alimenticios, análisis de riesgos, efectos y control de leptinas y temas de discusión como ¿ha fallado la Sociedad de Ciencias Animales?, ¿tienen los ácidos grasos un rol en la nutrición?, producción animal en países en desarrollo, entre otros.

En esta ocasión la BSAS Annual Meeting se unirá con la Reunión de la Sociedad Internacional de Etología Aplicada (ISAE), organizada por la rama británica de la ISAE, en la cual presento un trabajo en el área de Etología y Bienestar Animal y una reunión satélite llamada ¿Cuál es el precio de un alimento barato? (What Price Cheap Food?), organizada por la BSAS y el Centro Escocés para Ciencias de Bienestar Animal, éstas últimas son las reuniones de mi mayor interés, es decir los temas de bienestar animal y ética en producción animal.

El Bienestar Animal (BA) es una disciplina científica relativamente nueva, que ha tenido importantes avances en países desarrollados en los últimos años. El BA busca bases científicas que nos permitan tener una noción sobre cómo manejar animales en condiciones que eviten o minimicen un sufrimiento innecesario. El ámbito de acción del BA Incluye a animales domésticos o silvestres en sistemas productivos, de laboratorio, de zoológico, mascotas, silvestres manejados por el ser humano, es decir, animales que interactúan estrechamente con el ser humano.

Los principales criterios universales de BA se basan en cinco libertades establecidas por el Consejo de Bienestar Animal de Animales de Granja en Gran Bretaña (Farm Animal Welfare Council 1993) que se refieren a que los animales deben ser mantenidos libres de 1) sed y hambre, 2) malestar físico, 3) heridas y enfermedades, 4) manifestar un comportamiento normal y 5) estrés y angustia (Webster, 1994). Lo importante de estas libertades es que reconocen que el bienestar se relaciona no solamente con un buen estado nutricional y/o sanitario, sino también con un buen estado mental. Así, BA es definido **“como un completo estado de salud física y mental en el cual el animal está en armonía con su ambiente”** (Wood-Gush, 1983).

Centrándonos en el caso de los animales en sistemas productivos, los estudios de BA se relacionan con la pregunta **cómo producir**, es decir cuáles son las condiciones de mantención y manejo de animales que minimizan un estrés y/o sufrimiento innecesario. La mayor parte de los estudios se han concentrado en los sistemas de manejo intensivos como lecherías, gallinas ponedoras, pollos broiler y cerdos, principalmente motivados por el interés de los consumidores y por ser las especies económicamente más importantes (Cassini y Hermitte, 1994). En sistemas intensivos de producción, si bien es cierto los animales están provistos de alimento, temperaturas adecuada, protección de predadores e inclemencias climáticas, sin embargo no consideran sistemas motivacionales de los animales con los cuales ellos han evolucionado, esto se refiere a que están limitados para realizar un comportamiento normal como caminar, darse vuelta o muchas conductas para los cuales están altamente motivados como baños de polvo en gallinas ponedoras, construcción de nido en cerdas gestantes y juego en lechones y terneros, cuya privación se puede traducir en frustración y angustia (Dawkins, 1998).

También han sido estudiadas técnicas de manejo tales como la castración, inmovilización física, esquila, transporte, destete, entre otras, testeando alternativas que minimicen el malestar físico y mental involucrado en

estos manejos (Pollard, Littlejohn y Suttie, 1992; Robertson, Kent y Molony; Knowles, 1999).

La preocupación por el BA es importante en términos productivos, económicos, políticos, éticos y sociales.

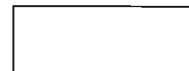
Una de las ventajas de considerar criterios de bienestar en sistemas productivos es que se puede mejorar la eficiencia de producción. Esto se basa en que los animales al estar en condiciones de estabulación malas o deficientes o someterse a manejos que produzcan malestar físico y/o mental se produce una respuesta estrés que se entiende como **una combinaciones de cambios adaptativos anatómicos, fisiológicos, bioquímicos, inmunológicos y conductuales a desafíos en el ambiente del animal** (Sanford *et al.*, 1986). Se describen tres niveles de estrés: estrés fisiológico, sobre estrés (*overstress*) y angustia (*distress*). El primero no afecta el bienestar del animal, ni su rendimiento productivo, el segundo puede alterar de algún modo el proceso de crecimiento y en el tercero los animales son más susceptible a enfermedades y muerte debido a una baja en la respuesta inmune, pueden haber problemas reproductivos y enlentecimiento del crecimiento, que son indudablemente negativos desde el punto de vista de la producción (Webster, 1994; Fraser y Broom, 1997).

Un investigador australiano, Hemsworth¹ y su equipo han estudiado cómo un buen trato hacia animales productivos disminuye la respuesta estrés del miedo generada por el ser humano y cómo de esta forma se pueden aumentar los niveles productivos. Estudios con cerdos y vacas lecheras, en condiciones de laboratorio y comerciales, indican que el nivel de miedo a los humanos es afectado por interacciones táctiles negativas por parte de las personas que los manejan (Hemsworth, 1997). Se ha encontrado, por ejemplo, que los cerdos son muy sensibles a interacciones táctiles por parte de humanos, así interacciones táctiles negativas impuestas brevemente, pero en forma regular, producen altos niveles de miedo y por el contrario, interacciones táctiles positivas como caricias, se asocian con un menor miedo y rechazo al ser humano. Similares hallazgos se han reportado en vacas lecheras, aves de postura y pollos broiler (Boissy y Bouissou, 1988; Boivin *et al.*, 1992; Jones, 1993; Hemsworth *et al.*, 2000). La importancia de estos estudios es que se ha demostrado que las manipulaciones que inducen a altos niveles de miedo en los animales, se asocian con una marcada reducción en el rendimiento productivo, crecimiento y reproducción en cerdos, aves de postura y vacas lecheras (Hemsworth *et al.*, 1986ab; Hemsworth y Barnett, 1991; Seabrook y Bartle, 1992; Barnett *et al.*, 1992, 1994; Hemsworth *et al.*, 2000).

Hemsworth y su equipo detectaron que existen personas con actitudes positivas para manejar animales que pueden ser detectadas con cuestionarios o pueden ser capacitadas para que cambien su comportamiento hacia los animales (Hemsworth, 1997; Hemsworth *et al.*, 2000). Ellos vieron que las personas que creían que los cerdos eran como mascotas en la práctica eran personas que utilizaban menos los golpes en el manejo de animales, que las que creían que a los cerdos había que tratarlos en forma brusca. Otro autor (Seabrook, 1972), encontró relaciones entre personalidad y respuesta animal, en este caso en vacas lecheras. Observó que cuando las personas eran introvertidas y seguras de sí mismas, las vacas entraban con menos problemas a la sala de ordeña y permanecían más tranquilas. Al parecer lo que más dice sobre como las personas se comportarán con los animales es la postura y creencias que tienen con respecto al trato a los animales. Estas evidencias muestran que una adecuada selección y/o capacitación del personal que trabaja directamente con los animales puede influenciar marcadamente en el bienestar de éstos y como consecuencia en el rendimiento productivo.

Como vemos procurar un adecuado bienestar puede tener como consecuencia un mayor rendimiento productivo. Sin embargo, esta aseveración no se puede hacer en sentido contrario, es decir, no se puede asumir que el hecho de que los animales mantengan un nivel de rendimiento productivo significa necesariamente que los animales están en buenas condiciones de bienestar. Este es uno de los malentendidos más frecuentes. Esto se debe a que los animales, especialmente los domésticos, están genéticamente seleccionados para producir, además de que frecuentemente son mantenidos con suplementos de vitaminas y dosificados con antibióticos, con lo cual se pueden enmascarar signos de bienestar deficiente.

¹ El grupo de investigadores es parte del Victorian Institute of Animal Science de Australia.



También las consideraciones de BA tienen una fuerte implicancia económica y política, ambas fuertemente ligadas. En países desarrollados existen leyes² que regulan el uso y condiciones de mantención de animales. La relación entre política y economía se hace evidente con el tema actual de la globalización. Por ejemplo, el Parlamento Europeo difundió, a través de una Comisión específica, a todos los países miembros y también a los países que comercian con Europa, como es el caso de Chile, el documento denominado Decisión 78/923/CEE (Convenio Europeo sobre la Protección de Animales en la Ganadería los reglamentos exigidos sobre Bienestar Animal.), con el fin de homogeneizar criterios de bienestar. El riesgo que se corre al no ajustarse a este tipo de regulaciones es que se detengan o no se importen productos de países que no se sometan a regulaciones similares, como lo ha señalado Inglaterra a través de su Ministro de Agricultura.

Las regulaciones de BA en países desarrollados han sido basadas en investigación en esta área y en Etología Aplicada y solicitadas por la gente. Por ejemplo en 1978 la ciudadanía suiza votó por una nueva ley de bienestar animal y para ello se llevaron a cabo estudios científicos que permitieran regular sobre el tipo de instalaciones necesarias, densidad de animales en estabulación y diseño de jaulas de gestación para cerdas (Wechsler *et al.*, 1997).

Las inquietudes sociales de los ciudadanos de países desarrollados se han traducido en además de legislaciones, en la organización de numerosas organizaciones que tienen como objetivo mejorar el BS a través del conocimiento científico, tales como Universities Federation for Animal Welfare (UFAW), fundada en 1926 (www.ufaw.org.uk), The Scientists Center for Animal Welfare (SCAW) (www.scaw.com), The Animal Welfare Institute (AWI) fundada en 1951 (www.awionline.org) por citar algunas de las numerosas organizaciones.

He presentado el escenario actual del BA como ciencia en países desarrollados. En nuestro país este tema está recién comenzando. En 1998 se realizó la Primera Conferencia sobre Bienestar Animal, organizada por la Dra. Jessica Gimpel, con el auspicio del Consejo Británico y el patrocinio de la Facultad de Ciencias Veterinarias y Pecuarias de la Universidad de Chile, donde expusieron notables Investigadores³ en el área de Etología Aplicada y Bienestar Animal, además de productores y veterinarios chilenos, que expusieron su visión. Aparte de esta Conferencia, algunos investigadores⁴ han realizado trabajos en el área y se han dictado charlas en Congresos y Seminarios. No obstante, se hace necesario más reuniones, investigación que se traduzcan en cambios reales de actitud hacia los animales.

En cuanto a legislación, hay un Proyecto de Ley de Protección Animal en revisión, sin fecha aparente de ser aprobado, del cuál los investigadores de ciencias básicas han sido los más críticos.

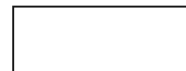
A pesar de no existir estudios sobre la visión de los productores, aparentemente la posición de éstos es negativa en cuanto a realizar modificaciones a los sistemas actuales de manejo incorporando criterios de BA, ya que sin duda, a pesar de que a la larga puedan ser más eficientes, en el corto plazo significaría realizar inversiones considerables. Por otro lado, aparentemente el consumidor local no pagaría más por un producto que garantice un mejor bienestar, como ocurre en países desarrollados, que es el tema principal que se tocará en la reunión satélite What price cheap food?.

No obstante, a pesar de que lo ideal sería que la inquietud por el BA surja de la comunidad, en el caso de nuestro

² US Code of Federal Regulation, Title 9, Chapter 3, Part 313. Humane Slaughter of Livestock; Farm Animal Welfare Council 1985; The Welfare of Livestock Regulations 1994 (Gran Bretaña); New Zealand Animal Welfare Advisory Committee Codes (Nueva Zelanda); Canadian Agri-Food Research Council.

³ Profesoras Georgia Mason y Marian Dawkins de la Universidad de Oxford y el Profesor John Webster Decano de la Escuela de Veterinaria de la Universidad de Bristol.

⁴ Cristian Bonacic realizó su tesis doctoral en Oxford sobre el Manejo Sustentable de la Vicuña considerando criterios de bienestar animal; Jessica Gimpel está realizando su tesis doctoral en bienestar animal en animales de laboratorio; Beatriz Zapata realizó un proyecto de un año respaldado por la Universidad de Oxford y la Universidad Católica en la respuesta estrés de guanacos sometidos a distintos tipos de manejo.



país tal vez tengamos que tomar medidas por presiones político-económicas de países que importan productos nuestros. Por ejemplo, se ha trabajado mucho por exportar carne, y para esto nos hemos ajustado a las condiciones que solicita cada país comprador. Así, sospecho que en un futuro no lejado, además de requerimientos de higiene, las condiciones de bienestar ofrecidas previo al faenamiento podrían convertirse en requisitos para exportar a algunos países. En otras palabras BA podría convertirse en uno de los atributos de calidad de nuestros productos, como ocurre con los productos comercializados en Europa y Estados Unidos.

Se ha podido observar en charlas sobre BA un gran interés por parte de estudiantes, lo cual podría augurar cambios positivos para esta ciencia en nuestro país en un futuro no lejado.

Finalmente, a modo de síntesis, la incorporación de criterios de BA en sistemas productivos está muy avanzada en países desarrollados, no así en nuestro país. Se considera importante el BA en términos productivos, políticos, económicos, éticos y sociales. En nuestro país, temas de BA se han comenzado a tocar en estos últimos años, al parecer no hay mucho apoyo de productores y tampoco exigencias por parte de los consumidores, no obstante debido a la globalización, probablemente nos veamos forzados a tomar medidas de BA para poder exportar a países que las exijan como un requisito de calidad del producto. Así, el Bienestar Animal es un tema del cual deberíamos preocuparnos más de lo que actualmente nos preocupa, con el fin de anticiparnos a eventos futuros.

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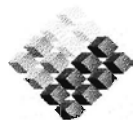
3. OBJETIVOS DE LA PROPUESTA

3.1. GENERAL:

Actualizar y difundir el estado del conocimiento de las ciencias animales, particularmente el Bienestar Animal

3.2 ESPECÍFICOS:

- Atender a reuniones científicas orientadas a actualizar y difundir el conocimiento de ciencias animales
- Difundir resultados de investigación realizada en nuestro país.
- Compartir información con especialistas en ciencias animales principalmente de países europeos
- Contactar especialistas en Bienestar Animal que puedan asesorar al sector pecuario en la incorporación de criterios de Bienestar Animal.
- Difundir el conocimiento adquirido a estudiantes, profesionales y productores.
- Promover la incorporación de criterios de Bienestar Animal en el sector pecuario como una forma de ofrecer un mejor producto.



4. ANTECEDENTES DE LA INSTITUCIÓN QUE DICTA LA ACTIVIDAD DE FORMACIÓN (Adjuntar antecedentes adicionales en el Anexo N° 3)

The British Society of Animal Science (BSAS, registrada SC004845) tiene como propósito aumentar el entendimiento en ciencias animales y su integración en Producción Animal, para lo cual organiza conferencias, talleres y reuniones para que los interesados en ciencias animales puedan reunirse y compartir información, ideas y experiencias.

La Sociedad, con sede principal en Gran Bretaña, actualmente reúne alrededor de 1000 miembros, una tercera parte de países extranjeros. Los miembros son investigadores, docentes, industriales, productores con un gran rango de interés.

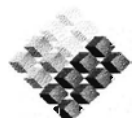
La Sociedad también ha producido el Journal Animal Science. Este Journal publica investigación original a niveles molecular, celular, orgánico y sistémico, al igual involucrando animales como un todo, sistemas productivos y modelos matemáticos. Los artículos se basan en principios científicos e investigación aplicada de relevancia para animales económicamente importantes para el ser humano en regiones templadas y tropicales.

Animal Science cubre una gran variedad de temas incluyendo: reproducción y genética, nutrición y digestión, fisiología y endocrinología, reproducción, lactancia, crecimiento, salud, etología y bienestar, evaluación de alimentos y productos animales. Este journal es publicado seis veces al año por la British Society of Animal Science (www.bsas.org.uk).

Junto con la BSAS, la Sociedad Internacional de Etología Aplicada (International Society for Applied Ethology, ISAE) realizará una reunión regional. Esta Sociedad tiene varios propósitos:

1. Estimular y respaldar investigación aplicada en comportamiento animal relacionado al uso de animales por el ser humano, incluyendo animales domésticos, de laboratorio, zoológico, compañía, animales silvestres cautivos o manejados en vida silvestre;
2. Proveer un foro internacional en el cual científicos puedan comunicarse y discutir los resultados de investigación. Esto se logra organizando o promoviendo reuniones y publicaciones científicas;
3. Estimular, cuando es apropiado, uniones entre comportamiento animal aplicado y otras disciplinas. Esto se logra estimulando presentaciones, discusiones y publicaciones y manteniendo contacto con sociedades científicas;
4. Estimular y respaldar la enseñanza de comportamiento animal especialmente en escuelas veterinarias, ciencias animales y departamentos de producción animal y en departamentos relacionados con animales de laboratorios o mascotas;
5. Proveer un set de expertos al gobierno, industria y organizaciones de bienestar animal los cuales tratan con problemas involucrados en comportamiento animal. Estimular, cuando sea posible y apropiado, asimilación de conocimiento científico, para así estimular su uso en relación a problemas prácticos concerniendo la manera como los animales son mantenidos y cuidados.

La ISAE reúne personas involucradas en los campos de agricultura, veterinaria, zoología y otras ciencias animales (www.isaeuk.freemove.co.uk).



5. PROGRAMA DE ACTIVIDADES DE LA PROPUESTA (Adjuntar antecedentes solicitados en el Anexo N° 4)

PROGRAMME

BRITISH SOCIETY OF ANIMAL SCIENCE, ANNUAL MEETING 8-10 APRIL 2002

ROOM <i>Capacity</i>		CENTRAL HALL	X001 300	L001 166	L002 130	L005 80	L006 40	POSTERS
Monday AM 10:30-15:40						WHAT PRICE CHEAP FOOD? 10:30 - 15:40 Satellite *		BSAS Poster Session I Monday - Tuesday <i>Goodricke</i> Leptins - discussion Lactation Reproduction
Monday PM Session 1 13:40 - 15:40	13:30 13:40		The President Effect of leptins (Invited/submitted)	Have fatty acids a role in nutrition & health?	Applied and experimental genetics			
Session 2 15:00-17:40	16:00		Enhancing immune responses	Maximise dairy cow performance	Pig nutrition	Horses		
Tuesday AM Session 3 09:00-10:00	09:00	Sir John Hammond Memorial Lecture Has Animal Science failed Society? - Professor A J F Webster						<i>Exhibition Centre</i> Non-ruminant - discussion Ruminant nutrition issues Browse legumes and tannins Tropical feeds
Session 4 10:30-12:30	10:30	Integration - Helminth (Invited papers)	Pig management & health	WPSA	Control of leptins (Invited/submitted)	Ruminant issues		
Tuesday PM Session 5 13:40-15:40	13:40	Integration - Ecology (Invited papers)	Dairy cattle	Joint session - WPSA/BSAS Lighting for poultry WPSA 15:00-15:45		Advances in genetics		
Session 6 15:00-18:00	15:50	Nutritional standards (Report)	WPSA Gordon Memorial Lecture 17:00-18:00	BSAS AGM 18:00	Ethical issues in animal science (Invited)	Animal production in developing countries (invited/submitted)		BSAS Poster Session II Tuesday - Wednesday <i>Goodricke</i> Rumen degradability studies - discussion Feed to food product quality - discussion Enzyme - discussion
Wednesday AM Session 7 08:30-10:20	08:30		Enzymes in feed resources (Invited papers)	WPSA AGM 08:30-09:00 WPSA 09:30 - 10:20	ISAE/BSAS Ethology & welfare - Session 1	Diet manipulation & ruminant health 9:00-10:00		
Session 8 10:50-12:20	10:50		Hazard & risk analysis (Invited papers)	WPSA 11:00 - 12:00	ISAE/BSAS Ethology & welfare - Session 2	Farmers Session (invited) Improving beef production systems 10:50 (visit 13:30-16:30)		
Wednesday PM Session 9 13:30-15:30	13:30 14:00				ISAE AGM 13:30-14:00 ISAE - Laboratory Animal - Session 3 14:00-15:20			<i>Exhibition Centre</i> Pig and cattle growth Animal breeding Diet manipulation and ruminant health - discussion BSAS/ISAE Posters

Pre-conference satellite * - WHAT PRICE CHEAP FOOD?

Monday 8th April

10:30	Introduction	Prof Colin Whitemore, University of Edinburgh
	Overview and Animal Welfare	Dr Mike Appleby, Humane Society of the United States
11:15	UK Farmer's perspective	Mr Ben Gill, National Farmers Union
11:45	Third world perspective	Mr Andy Redfern, Traidcraft Exchange
12:15	Questions	
12:30	Buffet lunch	
13:15	Food Quality and Safety	Dr John Gazzard, ADAS
13:45	Environmental impact	Prof John Milne, Macaulay Institute
14:45	Workshops:	
	Farm incomes/food security	
	Welfare	
	Quality/safety/environment	
15:15	Brief Plenary	
15:30	Close	



Los programas se pueden encontrar en los sitios web www.bsas.org.uk y en www.isaeuk.freeseerve.co.uk/prog.htm

Ethical Issues in Animal Science

Welfare and Ethics - R Scruton

The legacy of positivism and the role of ethics in animals science -P B Thompson

Ethical issues in animal biotechnology - P Sandoe, S B Christiansen & J Lassen

The ethical basis of intensive livestock production systems - G Gatward

Open Communications

The effect of auditory stimulation on the behaviour of kennelled dogs - D L Wells, L Graham & PG Hepper

Why do people bring dogs back to the pound? A questionnaire study in Milan, Italy - F Mondelli, D Levi, S Magistrelli, E Prato Previde & P Valsecchi

Investigating temperament traits in cattle for quantitative trait loci (QTL) identification - N Ball, M J Haskell, J L Williams & J M Deag

The qualitative assessment of pig behaviour using repertory grid technique - D Grajfoner, F Wemelsfelder & E Austin

Social learning and facilitation of operant key-pecking by domestic hens - C M Sherwin, C M Heyes & C J Nicol

Breed differences in the expression of maternal care at parturition persist throughout the lactation period in sheep - H E Pickup & C M Dwyer

Individual differences in sociability and the trade-offs made by sheep grazing in a patchy environment - A M Sibbald & R J Hooper

Spatial distribution during grazing reflects dominance relationships between individual sheep - H W Erhard, A M Sibbald & E Fabrega-Romans

Posters

The effect of castration on plasma cortisol level and time budget in farmed guanaco calves (Lama guanicoe) B Zapata, K Fuentes, C Bonacic, B Gonzalez, J L Riveros, M P Marin & F Bas

Domestic chicks' responses to PECKA-BLOCKS and string enrichment devices - R B Jones & C Ruschak

The presence of a familiar odourant increases social affiliation when pairs of unfamiliar chicks are tested in a novel environment - R B Jones & P Redman

Effect of rearing environment on 'human approach behaviour' in grower-finisher pigs - J R Amory, G P Pearce, A M Mackenzie & M A Varley

Effect of rearing environment on the prevalence of gastric ulcers in slaughter pigs - J R Amory, G P Pearce & A M Mackenzie

Performance of newly-weaned pigs when housed with a pig with experience of creep food - C A Morgan, A B Lawrence & B Garth

Differences in the behaviour of high and low yielding dairy cows selected by genetic merit - M D Cooper, D R Arney & C J C Phillips

Factors affecting the neonatal viability and the relationship between it and subsequent creep feeding behaviour of suckling piglets - H F Lee, C A Morgan, M C Appleby & N K Waran

Interactions between behavioural development, plasma cortisol and thermoregulation in the neonatal lamb C M Dwyer

Influence of salt application on biting by growing-finishing pigs -C A Tsourgiannis, J F Robertson & V R Fowler

Sham dustbathing and use of dustbaths in furnished cages for laying hens -I A S Olsson & L J Keeling

Effect of tooth clipping on piglet behaviour L A Boyle, R M Boyle & P B Lynch

Excretory behaviour of lactating sows in an outdoor organic production system - J Marcellis, H Kelly, H Browning, J Day & S Edwards



Posters

Effect of floor type on the welfare of piglets in the farrowing house

E Lewis, L Boyle, B Lynch, P Brophy & J O'Doherty

Does the experience of the stock-person alter the behaviour of the ewe during handling and management

A B Notman, J Hill & C Savage-Roberts

Workshop: ISAE Laboratory Animal Session

Male Management: Coping with aggression problems in male laboratory mice
--

P L P Van Loo, B F M Van Zutphen & V Baumans
--

Home sweet home? assessing welfare in the home cage

R S Lewis and J L Hurst

Preparing laboratory beagles for life as a working dog
--

S Heath, J Thomas and C Deegan

Understanding behaviour: the relevance of applied ethology for laboratory animal science
--

I A S Olsson, C M Nevison, E Patterson-Kane, C M Sherwin, H A Van de Weerd & H Wurbel

Concluding remarks



5.1 CARTA O CERTIFICADO DE ACEPTACIÓN DEL POSTULANTE DE ACTIVIDAD DE FORMACIÓN (Adjuntar en Anexo N° 5)

6. RESULTADOS E IMPACTOS ESPERADOS

Posicionamiento de nuestro país en una Conferencia de carácter Internacional, con la atención y presentación de un trabajo de investigación en Etología Aplicada y Bienestar Animal.

Contactar a especialistas en Bienestar Animal que podrían ser invitados a Chile como consultores o trabajar en colaboración para con investigadores y/o productores de nuestro país para impulsar el Bienestar Animal.

Posibilidad de iniciación de proyectos de investigación en Bienestar Animal en nuestro país con apoyo de investigadores extranjeros con la visión de mejorar la calidad de producto pecuario ofrecido.

Promoción de una forma de mejorar la calidad de productos pecuarios a través del mejoramiento del bienestar animal.

Difusión de los conocimientos adquiridos de la reunión en una revista de extensión como Tecnovet que la edita y distribuye el Departamento de Extensión de la Facultad de Ciencias Veterinarias y Pecuarias de la Universidad de Chile.

Difusión de los conocimientos adquiridos a estudiantes, académicos y productores en una charla de difusión en la pontificia Universidad católica de Chile.

Incorporación de conocimiento en clases de Comportamiento y Bienestar Animal que actualmente dicto a estudiantes de Medicina Veterinaria de la Universidad Santo Tomás.

7.- ACTIVIDADES DE DIFUSIÓN					
FECHA	TIPO DE ACTIVIDAD	OBJETIVO	LUGAR	Nº Y TIPO BENEFICIARIOS	INFORMACIÓN A ENTREGAR
6 Mayo 2002	Clase teórica dentro de un curso de Manejo Productivo del Guanaco. Tema: Comportamiento y consideraciones de Bienestar en la crianza del guanaco	Difundir resultados de estudios realizados en Comportamiento y Bienestar de guanacos y complementarlo con el conocimiento adquirido en la BSAS Annual Meeting y la ISAE meeting.	Auditorio de FAIF, PUC	100 personas. Entre ellos se estima alrededor de 30 estudiantes y los restantes productores, académicos, industriales textiles y de turismo.	Oral y escrita
24 de Mayo	Conferencias sobre Aspectos Diversos de Bienestar	Difundir los alcances del Bienestar Animal	Auditorio de FAIF, PUC	80 personas. Estudiantes, profesionales, productores y académicos	Oral
Agosto 2002	Artículo en Tecnovet	Difundir conocimientos y alcances sobre Bienestar Animal		Alrededor de 1000 personas relacionadas con la actividad agropecuaria, productores, profesionales, estudiantes y académicos	Escrita
				Programa de Formación para la Innovación Agraria Apoyo a la Participación Formulario de Presentación	



ANEXO 1
CURRICULUM VITAE DEL POSTULANTE

Curriculum Vitae

OLGA BEATRIZ ZAPATA SALFATE

Antecedentes Personales

Nombre: Olga Beatriz Zapata Salfate
Dirección: Av. Grecia 2541, depto. 103.
Fecha de Nacimiento: 1° de Diciembre 1968.
e-mail: beatrizzapata@hotmail.com
Fono: 686 4173 (oficina)
2398128 (casa)

Formación Académica

- (2000- 1999) Master en Biociencias Integrativas en la Universidad de Oxford, Gran Bretaña.
- (1999-1995) Master en Producción Animal en la Pontificia Universidad Católica de Chile.
- (1994-1987) Medicina Veterinaria en la Facultad de Ciencias Veterinarias y Pecuarias en la Universidad de Chile.

Becas

- (1999-2001) Wellcome Research Training Fellowship in Wildlife Conservation otorgada por The Wellcome Trust
- (1995) Pontificia Universidad Católica de Chile.

Antecedentes Laborales

- Actualmente, Profesora de la asignatura electiva: Comportamiento Animal y Bienestar Animal en la Universidad Santo Tomás.
- Miembro del Comité Organizador del Seminario Internacional de Cria en Cautividad de Fauna Chilena que se realizó entre el 5 al 7 de diciembre en el Centro de Convenciones Diego Portales. Evento organizado por la Facultad de Ciencias Veterinarias y Pecuarias de la Universidad de Chile, El Servicio Agrícola y Ganadero y el Parque Zoológico.
- (2000-2001) Investigador del Proyecto : “Behavioural, physiological and haematological study on *Lama guanicoe* (guanaco) as an experimental model for endangered Chilean wild ungulates”, Finaciado por Wellcome Trust (Gran Bretaña) y respaldado por la Universidad de Oxford y la Pontificia Universidad Católica de Chile.

Rol: Diseño y ejecución de estudios de respuesta estrés en guanacos ante manejos habituales. Trabajo supervisado por los investigadores Cristian Bonacic MV. MSc. PhD en Chile y David Macdonald Msc. PhD de la Universidad de Oxford.

Profesor guía de la tesis: “Efecto del estrés por castración en variable fisiológicas, hematológicas y productivas en crías de guanaco (*Lama guanicoe*) criados en cautiverio” realizada por la alumna Karla Fuentes, estudiante de veterinaria de la Universidad Santo Tomás.

Profesora guía de la tesis: “Efecto del estrés de Manejo en la frecuencia cardíaca y comportamiento de guanacos (*Lama guanicoe*) en cautiverio” realizada por la alumna Claudia Nieto, estudiante de Medicina Veterinaria de la Universidad Iberoamericana de Ciencias y Tecnología.

- (1999) Veterinario Responsable en el Proyecto “Manejo Productivo y Comercial del Guanaco en el Secano de la Zona Central”. Realizado por la Pontificia Universidad

Católica de Chile y financiado por la Fundación para la Innovación Agraria (FIA) del Ministerio de Agricultura.

- (1999-1996) Veterinario Responsable en el Proyecto “ Estudio de la Adaptación y Manejo en Semicautiverio de *Lama guanicoe* (Guanaco) en la Zona Central. Pontificia Universidad Católica de Chile, financiado por la Fundación para la Innovación Agraria (FIA) del Ministerio de Agricultura.
Roles: Cuidados veterinarios de los animales y diseño y ejecución de estudios productivos y de la respuesta fisiológica y conductual al manejo.
Profesora guía de la tesis “Variables zoométricas en *Lama guanicoe* (guanaco) desde uno a siete meses de edad” realizada como requisito para optar al título de Médico Veterinario en la Universidad Iberoamericana (1997).
- (1998) Miembro del Comité organizador del Seminario: Manejo Sustentable de la Vicuña y el Guanaco. Organizado por la Pontificia Universidad Católica de Chile y el Servicio Agrícola y Ganadero y patrocinado por la Fundación para la Innovación Agraria.
- (1999-1997) Asistente de Investigación en el Proyecto “Mapa Genómico de los Camélidos sudamericanos” Pontificia Universidad Católica de Chile e Instituto de Investigación Agraria (INIA), financiado por la Fundación para la Innovación Agraria (FIA) del Ministerio de Agricultura.
Roles: Caracterización del cariotipo de los camélidos sudamericanos, trabajo realizado en conjunto con el INTA. Además captura de vicuñas y guanacos silvestres con dardos anestésicos y toma de muestras de sangre de guanacos y vicuñas en distintas partes del país.
- (1998-1997) Asistente de Investigación en el Proyecto “ Uso Sustentable de la Vicuña (*Vicugna vicugna*) en Chile. Pontificia Universidad Católica de Chile y Universidad de Oxford-WildCru. Principales roles fueron asistencia en la captura de vicuñas silvestres, muestreo y análisis hematológicos.
- (1994) Médico Veterinario de pequeños animales en Punta Arenas y Tipificador de canales bovinas.

Publicaciones

- Zapata, B., Fuentes, V., Bonacic, C., González, B., Villouta, G., y Bas, F. 2002. Haematological and clinical biochemistry findings in captive juvenile guanacos (*Lama guanicoe*, Müller 1776) in Central Chile. Aceptado para ser publicado en Small Ruminant Research.
- Zapata, B., Bonacic, C., González, B., Riveros, J.L., Ramírez, A., Aguirre, Villouta, G y Bas, F. 2001. Response of farmed guanacos to shearing. Proceedings of the XXVII International Ethological Conference. Pag. 291. Tübingen, Germany. 22-29 August 2001. Apfelbach, R., Fendt, M., Krämer, S. y Siemer, B.M. (Eds.). Blackwell Science.
- Merabachvili, G., Obreque, V., Mancilla, R., García-Huidobro, J., Zapata, B., Bonacic, C. Bas, F. , Cothran, G. y Hinrichsen, P. 2000. Uso de marcadores moleculares para estudios de filiación y de diversidad genética de camélidos sudamericanos. En: Manejo sustentable de la Vicuña y el Guanaco. Gonzalez, B.; Bas, F.; Tala, Ch. E Iriarte, A. (Eds.). Servicio Agrícola y Ganadero, Pontificia Universidad Católica de Chile y Fundación para la Innovación Agraria.
- González, B., Zapata, B. Bonacic, C. y F. Bas. 2000. Técnicas para el manejo del guanaco en cautiverio. En: Manejo sustentable de la Vicuña y el Guanaco. Gonzalez, B.; Bas, F.;

Tala, Ch. E Iriarte, A. (Eds.). Servicio Agrícola y Ganadero, Pontificia Universidad Católica de Chile y Fundación para la Innovación Agraria.

- Zapata, B., González, B., Bustos, P., Bonacic, C. y F. Bas. 2000. Aplicación de conceptos de bienestar animal en guanacos manejados en cautiverio. En: Manejo sustentable de la Vicuña y el Guanaco. Gonzalez, B.; Bas, F.; Tala, Ch. E Iriarte, A. (Eds.). Servicio Agrícola y Ganadero, Pontificia Universidad Católica de Chile y Fundación para la Innovación Agraria.
- Zapata, B. 2000. The Effect of Restraint and Straw Bedding on the Behaviour of Lactating Sows. Tesis MSc, Universidad de Oxford, Oxford, Gran Bretaña.
- Zapata, B. 2000. The Blood Biochemistry of badgers (*Meles meles*) in Wytham Woods in relation to habitat. Tesis MSc, Universidad de Oxford, Oxford, Gran Bretaña.
- Zapata, B. 1999. Diferenciación de Camélidos Sudamericanos mediante análisis cariotípico. Tesis para optar al título de Magíster en Producción Animal en la Pontificia Universidad Católica de Chile.
- Gonzalez, G., Zapata, B. y Bas, F. 1998. Utilización del guanaco y potencial productiva de su fibra. TECNOVET año 4, No 1 Marzo 1998 p.25-27.

Participación en Congresos

González, B., Zapata, B., Riveros, J. L., Bonacic, C., Capellán, F. y Bas, F. 2001. Importancia del Comportamiento en el Manejo Productivo del Guanaco en Cautiverio. En: Seminario Internacional Cria en Cautividad de Fauna Chilena. 5, 6 y 7 de Diciembre. Santiago, Chile.

Zapata, B., Fuentes, K., Bonacic, C., González, B., Riveros, J.L., Marin, M.P. y Bas, F. 2001. Efecto de la castración en los niveles de cortisol plasmáticos y comportamiento en crías de guanaco (*Lama guanicoe*) en cautiverio. X Congreso Asociación Latinoamericana de Parque Zoológicos Acuarios y Afines (ALPZA). Buenos Aires. 12-16 de Noviembre 2001.

González, B., Zapata, B., Riveros, J.L., Bonacic, C y Bas, F. 2001. Contención física de guanacos (*Lama guanicoe*) en cautividad. X Congreso Asociación Latinoamericana de Parque Zoológicos Acuarios y Afines (ALPZA). Buenos Aires. 12-16 de Noviembre 2001.

Riveros, J.L., González, B., Zapata, B., y Bas, F. 2001. Contención química de guanacos (*Lama guanicoe*) en cautividad. X Congreso Asociación Latinoamericana de Parque Zoológicos Acuarios y Afines (ALPZA). Buenos Aires. 12-16 de Noviembre 2001.

Zapata, B., Bonacic, C., González, B., Riveros, J.L., Ramirez, A., Aguirre, Villouta, G y Bas, F. 2001. Response of farmed guanacos to shearing. XXVII International Ethological Conference. Tübingen, Germany. 22-29 August 2001.

Zapata, B., Gimpel, J. González, B. Riveros, J.L. Bonacic, C. y Bas, F. 2001. Efecto del transporte en cortisol, glucosa y peso de guanacos (*Lama guanicoe*) criados en cautiverio. Proceedings XXVI Reunión Anual Sociedad Chilena de Producción Animal. 556-557. Santiago, Pontificia Universidad Católica de Chile e Ingeniería Forestal. Departamento de Zootecnia. 25-27 de Julio de 2001.

Riveros, J.L., González, B., Zapata, B., Bonacic, C. Bas, F. 2001. Parámetros reproductivos de hembras de guanaco (*Lama guanicoe*) en cautividad. Proceedings XXVI Reunión Anual

Sociedad Chilena de Producción Animal. 546-547. Santiago, Pontificia Universidad Católica de Chile e Ingeniería Forestal. Departamento de Zootecnia. 25-27 de Julio de 2001.

González, B. Skewes, O., Zapata, B. y Bas, F. 2001. Situación del guanaco en Chile. I Reunión Binacional de Ecología. Bariloche, abril 2001. Libro de resúmenes, pag. 124.

González, B., Zapata, B. Bonacic, C. y Bas, B. 2000. Guanacos en cautividad: su importancia para la conservación de la especie. IX Congreso Latinoamericano de Zoológicos, Acuarios y Afines. Parque Metropolitano de Santiago, Santiago, Chile.

González, B. Riveros, J.L., Zapata, B., Bas, F y Bonacic, C. 2000. Efecto de la captura y crianza artificial en el crecimiento de crías de guanaco. XXV Reunión Anual de la Sociedad Chilena de producción Animal, Puerto Natales.

González, B., Zapata, B., Bas, F. y C. Bonacic. 1999. Artificial feeding of guanacos in Chile (*Lama guanicoe* MÜLLER 1776). En 3° Simposio Europeo en Camélidos Sudamericanos y Seminario Europeo SUPREME, 27 al 29 de Mayo de 1999, Göttingen, Alemania

Zapata, B., González, B., Bas, F. y C. Bonacic. 1999. Factors affecting survival of guanaco crias after capture. En 3° Simposio Europeo en Camélidos Sudamericanos y Seminario Europeo SUPREME, 27 al 29 de Mayo de 1999, Göttingen, Alemania.

Gómez, M.A., González, B., Zapata, B. y Bas, F. 1999. Nutritional assessment of forages in guanaco (*Lama guanicoe*) using the apparent digestibility method. En 3° Simposio Europeo en Camélidos Sudamericanos y Seminario Europeo SUPREME, 27 al 29 de Mayo de 1999, Göttingen, Alemania.

Zapata, B., Gonzalez, B., y Bas, F. 1998. Efecto del cautiverio sobre la conducta agonística de guanacos machos juveniles. IV Jornadas de Etología, Valparaíso, V región, Chile.

Bustos, P. Bonacic, C., González, B., Zapata, B. y Bas, F. 1998. Efecto del estrés de aislamiento en guanacos juveniles mantenidos en cautiverio. IV Jornadas de Etología, Valparaíso, V región.

González, B., Zapata, B. y F. Bas. 1998. Cambios conductuales y de frecuencia cardiaca en crías bajo diferentes manejos. IV Jornadas de Etología, Valparaíso, V región.

Gonzalez, G., Zapata, B. y Bas, F. 1998. Utilización del guanaco y potencial productiva de su fibra. TECNOMET año 4, No 1 Marzo 1998 p.25-27.

Bas, F., Zapata, B. y González, B. 1998. Adaptación del guanaco al manejo en cautiverio. XXIII Reunión Anual de la Sociedad Chilena de Producción Animal, Chillán.

Acevedo, R., Zapata, B., González, B. y Bas, F. 1998. Metodología de esquila en guanacos (*Lama guanicoe*) en cautiverio. . XXIII Reunión Anual de la Sociedad Chilena de Producción Animal, Chillán.

Alvarado, R., Zapata, B., González, B. y Bas, F. 1997. Consumo y digestibilidad in vivo de crías de *Lama guanicoe* (guanaco) en cautiverio. XXII Reunión Anual de la Sociedad Chilena de Producción Animal, U. Austral, Valdivia.

Ramírez, B. Zapata, B., González, B. y Bas, F. 1997. Lanimetría en guanacos en cautiverio en la zona central de Chile. XXII Reunión Anual de la Sociedad Chilena de Producción Animal, U. Austral, Valdivia.

Zapata, B., González, B. y Bas, F. 1997. Factores que afectan la sobrevivencia post-captura de crías de guanaco. XXII Reunión Anual de la Sociedad Chilena de Producción Animal, U. Austral, Valdivia.

Montero, E., Zapata, B., González, B. y Bas, F. 1997. Zoometría de guanacos en cautiverio hasta los 6 meses de edad. XXII Reunión Anual de la Sociedad Chilena de Producción Animal, U. Austral, Valdivia.

Zapata, B., B. González y F. Bas. 1996. Presupuesto de actividades diarias de crías de *Lama guanicoe*, (guanaco) mantenidas en semicautiverio en Magallanes y Chile Central. III Jornadas de Etología y I Encuentro Chileno-Frances de Sociobiología. Universidad Mayor, Santiago, Chile. (Abstract)

González, B., B. Zapata y F. Bas. 1996. Interacciones sociales en crías de *Lama guanicoe*, (guanaco) mantenidas en semicautiverio. III Jornadas de Etología y I Encuentro Chileno-Frances de Sociobiología. Universidad Mayor, Santiago, Chile.

González, B. , B. Zapata y F. Bas. 1996. Respuesta conductual a lactancia artificial de crías de *Lama guanicoe*, (guanaco) mantenidas en semicautiverio. III Jornadas de Etología y I Encuentro Chileno-Frances de Sociobiología. Universidad Mayor, Santiago, Chile.

Conferencias

(2000)The Blood Biochemistry of badgers (*Meles meles*) in Wytham Woods in relation to habitat. In the National Federation of Badger Group Conference. 6 de Septiembre, Durham, Gran Bretaña.

(1998) Aplicación de Conceptos de Bienestar Animal en Guanacos Manejados en Cautiverio. En: Seminario Manejo Sustentable de la Vicuña y el Guanaco. Santiago, Chile. 18-19 de Octubre.

Otros Antecedentes

Idioma: Ingles avanzado. 7.0 IELTS.

Referencias:

Fernando Bas M: Profesor Adjunto de la Facultad de Agronomía e Ingeniería Forestal de la Pontificia Universidad de Católica Chile. fbas@puc.cl

Cristian Bonacic S.: Profesor Auxiliar de la Facultad de Agronomía e Ingeniería Forestal de la Pontificia Universidad Católica de Chile. bonacic@puc.cl



ANEXO 2
PAUTA DE ANTECEDENTES RESUMIDA DEL POSTULANTE



PAUTA DE ANTECEDENTES RESUMIDA

ANTECEDENTES PERSONALES

Nombre completo	Olga Beatriz Zapata Salfate
RUT	
Número de Pasaporte	
Fecha de Nacimiento	1-12-1968
Nacionalidad	Chilena
Dirección particular	Av. Grecia 2541, depto. 103, Ñuñoa, Santiago
Fono particular	2398128
Fax particular	
Dirección comercial	Vicuña Mackenna 4860
Fono y Fax comercial	6864173-5526005
Banco y número de cuenta corriente para depósito de fondos correspondientes	
Nombre y teléfono de la persona a quien avisar en caso de emergencia	Benito González 6864173 2398128 09-8719093



Completar ambas secciones o sólo una de ellas, según corresponda

ACTIVIDAD PROFESIONAL Y/O COMERCIAL (ACTUAL)

Nombre y RUT de la Institución o Empresa a la que pertenece	Facultad de Agronomía e Ingeniería Forestal, Pontificia Universidad de Chile 81.698.900-0
Cargo	Investigador Asociado
Antigüedad	
Resumen de las labores y responsabilidades a su cargo	• Preparación de artículos científicos y de extensión. • Preparación de un manual de manejo de guanacos • Coordinación y dirección de tesis de pregrado • Elaboración de proyectos de investigación • Organización de actividades de extensión (Proyecto Guanaco)
Otros antecedentes de interés	

ACTIVIDAD COMO AGRICULTOR (ACTUAL)

Tipo de Agricultor (pequeño, mediano o grande)	
Nombre de la propiedad en la cual trabaja	
Cargo (dueño, administrador, etc.)	
Superficie Total y Superficie Regada	
Ubicación (detallada)	
Rubros a los que se dedica (incluir desde cuando se trabaja en cada rubro) y niveles de producción en el rubro de interés	
Resumen de sus actividades	
Organizaciones (campesinas, gremiales o empresariales) a las que pertenece y cargo, si lo ocupa	



ANEXO 3
ANTECEDENTES DE LA INSTITUCION QUE EFECTUA O DICTA LA
ACTIVIDAD DE FORMACIÓN



ANEXO 4
ANTECEDENTES CURRICULARES Y/O
CONTENIDOS DE LA ACTIVIDAD DE FORMACIÓN

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**Monday 8 April 2002
Room L005,
Exhibition Centre, University of York**

Pre-conference Satellite

WHAT PRICE CHEAP FOOD?

10:30	Introduction Overview on Animal Welfare	Prof Colin Whittemore, University of Edinburgh Dr Mike Appleby, Humane Society of the United States
11:15	UK Farmer's perspective	Mr Ben Gill, National Farmers Union
11:45	Third world perspective	Mr Andy Redfern, Traidcraft Exchange
12:15	Questions	
12:30	Buffet lunch	
13:15	Food Quality and Safety	Dr John Gazzard, ADAS
13:45	Environmental impact	Prof John Milne, Macaulay Institute
14:45	Workshops: Farm incomes/food security Welfare Quality/safety/environment	
15:15	Brief Plenary	
15:30	Close	

This meeting will challenge the widespread assumption that cheaper food for consumers is unequivocally desirable. The title 'What price cheap food?' suggests that challenge from the outset.

The proportion of income that people spend on food has declined for many years, and this decline is generally regarded as beneficial. However, it can also be argued that pressure for cheap food production has been a major factor in many negative developments: unreliable farm incomes, pressures on small-scale producers, reduced food security, concerns over food safety, loss of competitiveness for third-world producers, problems for animal welfare and environmental damage. Cheap food involves other 'prices' that are not reflected in the monetary cost.

Pressure for cheap food is sometimes attributed to the consumers themselves, but it would be more accurate to say that in recent years it primarily results from competition between producers. There is a small proportion of consumers who would have genuine difficulty in paying more for food, but this is insufficient argument for providing cheap food for everyone: such people could be supported in other ways. Most people could readily pay more for food. Indeed, most already pay more than necessary, some by buying 'free range' products and more by buying convenience foods.

(if you wish to register to attend this satellite - then please see application form)

Theatre Sessions

Monday, 8 April 2002

Room X001

13:30 **THE PRESIDENT**

13:40 **EFFECT OF LEPTINS**

Chair - Dr R J Vernon

13:40 LEPI Leptin: Modulation of the neuroendocrine axis
K L Houseknecht, Pfizer, USA

14:10 1 The effect of feeding intensity during the dry period on plasma leptin and time to return to cyclicity in dairy cows
K Holtenius, S Agenäs, H Gustafsson, C Delavaud & Y Chilliard

14:25 2 Relationship between plasma leptin concentration and reproductive function in dairy cows
G E Mann & D Blache

14:40 3 Leptin is involved in the regulation of ovarian activity in fasted hens (*Gallus domesticus*)
H Paczoska-Eliasiewicz, M Proszkowiec, A Hrabia, A Sechman, N Raver, A Gertler, J Proudman, I Rozenhoim & J Rzas

14:55 4 Successful lactation in leptin-deficient obese (ob/ob) mice
C H Knight, E Ong, R G Vernon & A Sorensen

15:10 5 Leptin is a signal of adiposity in fetuses of pregnant ewes fed at or above maintenance energy requirements
B S Mühlhäusler, C T Roberts, J R McFarlane, K G Kauter & I C McMillen

15:25 6 Intrafetal infusion of leptin suppresses expression of leptin mRNA and increases the proportion of multilocular adipose tissue in fetal perirenal fat in the sheep
B S Yuen, P C Owens, B S Mühlhäusler, C T Roberts, M E Symonds, D H Keisler, J H McFarlane & I C McMillen

15:40 *Tea*

ENHANCING IMMUNE RESPONSES

Chair - Dr Sandy Mackenzie

16:00 EIR1 Nutritional and metabolic linkages between growth and immune function
Prof M Spurlock, Purdue University, USA

16:40 EIR2 The importance of genetics in the immune response to pathogens and vaccines
Dr J Kaufman, Institute of Animal Health, UK

19:00 *Exhibition Centre - Coach to take delegates to Conference Dinner*

20:00 *Conference Dinner - York Race Course*

Theatre Sessions

Monday 8 April 2001

Room L001

HAVE FATTY ACIDS A ROLE IN NUTRITION AND HEALTH?

Chair - Dr Nigel Scollan

- | | | |
|-------|----|--|
| 13:40 | 7 | The effect of long-chain polyunsaturated fatty acid and vitamin E supplementation of ewes on neonatal lamb vigour, lamb growth and colostrum parameters
<i>J L Capper, R G Wilkinson, L A Sinclair, S E Pattinson & A M Mackenzie</i> |
| 14:00 | 8 | Influence of dietary fatty acids on the fatty acid composition of mesenteric lymph nodes (MLN) and spleen in the milk fed calf
<i>K N Muturi, M Birnie, M Wallace, J Struthers, J R Scaife & M A Lomax</i> |
| 14:20 | 9 | The effects of including ruminally protected lipid in the diet of Charolais steers on animal performance, carcass quality and the fatty acid composition of <i>longissimus dorsi</i> muscle
<i>N D Scollan, S Gulati, K G Hallett, J D Wood & M Enser</i> |
| 14:40 | 10 | Biohydrogenation and duodenal flow of C18 polyunsaturated fatty acids in steers fed grass or grass: legume silages
<i>M R F Lee, R T Evans, M S Dhanoa, R Merry, R J Dewhurst & N D Scollan</i> |
| 15:00 | 11 | Influence of dietary <i>n</i> -3 polyunsaturated fatty acids on milk fat composition and performance of lactating Friesian ewes
<i>S Chikunya, L A Sinclair & R G Wilkinson</i> |
| 15:40 | | <i>Tea</i> |

MAXIMISE DAIRY COW PERFORMANCE

Chair - Dr Peter Rowlinson

- | | | |
|-------|----|---|
| 16:00 | 12 | The effect of two levels of nutrient intake on milk production of two dairy cow genotypes
<i>T W J Keady & C S Mayne</i> |
| 16:20 | 13 | The effect of forage grinding and cutting height of urea treated whole crop wheat on the milk production and diet digestibility in dairy cows
<i>M A Jackson, L A Sinclair, R Readman & J Huntington</i> |
| 16:40 | 14 | Influence of genetic merit on 305-day milk production of dairy cattle on commercial farms at three levels of feeding
<i>H C F Wicks & J D Leaver</i> |
| 17:00 | 15 | Dairy cow performance in relation to the combination of cow height and condition score
<i>G E Pollott, H F Wicks & J D Leaver</i> |
| 17:20 | 16 | The effect of maturity of maize silage at harvest on the performance of lactating dairy cows offered two contrasting grass silages
<i>T W J Keady, C S Mayne & D J Kilpatrick</i> |
| 19:00 | | <i>Exhibition Centre - Coach to take delegates to Conference Dinner</i> |
| 20:00 | | <i>Conference Dinner</i> |

Theatre Sessions

Monday 8 April 2001

Room L002

APPLIED AND EXPERIMENTAL GENETICS

Chair - Professor Geoff Simm

- | | | |
|-------|----|--|
| 13:40 | 17 | Relationship between linear and composite type traits, somatic cell count and lifespan in pedigree and non-pedigree cows
<i>R A Mrode & G J T Swanson</i> |
| 14:00 | 18 | Comparing the performance of Holstein and Friesian dairy cows on British dairy farms
<i>G E Pollott & J D Leaver</i> |
| 14:20 | 19 | Application of test day model for the genetic evaluation of somatic cell counts and the effects of biomonhly sampling
<i>R A Mrode & G J T Swanson</i> |
| 14:40 | 20 | Serum urea concentration to determine protein requirements of pig genotypes
<i>N D Cameron, E McCullough, K Troup & J C Penman</i> |
| 15:00 | 21 | A genetic analysis of wool and lamb production traits in Scottish Blackface sheep
<i>A Murphy & J Conington</i> |
| 15:20 | 22 | QTL detection in the UK Suffolk and Texel sheep sire referencing schemes
<i>G A Walling, A D Wilson, B L McTeir, P M Visscher, G Simm & S C Bishop</i> |
| 15:40 | | <i>Tea</i> |

PIG NUTRITION

Chair - Dr Mike Varley

- | | | |
|-------|----|--|
| 16:00 | 23 | Supplementation of sow diets with plant extracts enhances piglet growth prior to weaning
<i>S E Ilsley, H M Miller, H M R Greathead & C Kamel</i> |
| 16:20 | 24 | Removal of both zinc oxide and avilamycin from the post-weaning diet has a detrimental effect on pig performance through to slaughter
<i>L J Broom, H M Miller, K G Kerr & P Toplis</i> |
| 16:40 | 25 | Predicting food intake and performance during adaptation to a new food.
<i>E C Whittemore, G C Emmans & I Kyriazakis</i> |
| 17:00 | 26 | Description and validation of a harmonised model of the growing pig for the optimisation of the utilisation and excretion of nutrients
<i>D M Green & C T Whittemore</i> |
| 17:20 | 27 | The short term feeding behaviour of pigs given access to foods differing in bulk content
<i>E C Whittemore, I Kyriazakis, G C Emmans, B J Tolkamp, C A Morgan, P W Knap, P H Simmins & S Jagger</i> |
| 19:00 | | <i>Exhibition Centre - Coach to take delegates to Conference Dinner</i> |
| 20:00 | | <i>Conference Dinner</i> |

Theatre Sessions
Monday 8 April 2001

Room L005

PRE-CONFERENCE SATELLITE

10:30 **WHAT PRICE CHEAP FOOD?**

HORSES

Chair - Dr Annette Longland

- | | | |
|-------|----|---|
| 16:00 | 28 | The influence of grass height on bite dimensions of horses
<i>A Naujeck & J Hill</i> |
| 16:20 | 29 | The effect of sugar-beet pulp on the nutritive value of high -temperature dried alfalfa for ponies
<i>J M D Murray, M J S Moore-Colyer, A C Longland & C Dunnett</i> |
| 16:40 | 30 | Appetency and preference in horses offered lucerne or chalk as a source of calcium
<i>V de Behr, D Daron, J F Cabaraux, I Dufrasne & L Istasse</i> |
| 17:00 | 31 | Ingestion and metabolic profile in horses offered lucerne or chalk as a source of calcium
<i>V de Behr, D Daron, A Gabriel, B Remy, J F Cabaraux, I Dufrasne & L Istasse</i> |
| 17:20 | 32 | Voluntary feed intake, apparent digestibilities and nutritive values in ponies given <i>ad libitum</i> access to complete pelleted diets containing different levels of unmolassed sugar beet pulp
<i>J J Hyslop</i> |

Theatre Sessions

Tuesday, 9 April 2001

Central Hall

SIR JOHN HAMMOND MEMORIAL LECTURE

Chair - Professor John Milne

09:00 H1 Has Animal Science failed Society?
Professor A J F Webster, University of Bristol

10:10 *Coffee*

INTEGRATION OF DISCIPLINES - HELMINTH CONTROL

Chair - Professor John Milne

10:30 IH1 Helminth parasite problems and control options for the ruminant livestock industries
Dr P J Waller, SWEPAR, National Institute, Sweden

11:10 IH2 Immunonutrition: the nutritional control of acquired immunity to parasites
Professor I Kyriazakis & J Houdijk SAC Edinburgh, Dr R Coop, Moredun Research Institute, Penicuik

11:50 IH3 Genetic control of host resistance to ruminant gastrointestinal parasites
Professor S Bishop, Roslin Institute, Edinburgh & Professor M J Stear, Glasgow University Veterinary School

12:30 *Lunch*

INTEGRATION OF DISCIPLINES - LIVESTOCK AND GRAZING ECOLOGY

Chair - Professor John Milne

13:40 IE1 Recent advances in foraging theory for herbivores
Dr N Thompson Hobbs, Colorado State University

14:20 IE2 Integrating livestock with the environment in upland systems
Dr I A Wright, Macaulay Institute & Prof I J Gordon, ARINI

15:00 IE3 How integrated livestock management can fit into the rural economy
Prof Sir John Marsh

15:40 *Tea*

NUTRITIONAL STANDARDS FOR LIVESTOCK - REPORTS

Chair - Professor Sandra Edwards

16:00 NS1 Nutritional Standards - pigs
Professor C T Whittemore

16:15 NS2 Nutritional Standards - poultry
Dr T Acamovic

16:30 *Discussion*

16:50 NS3 Nutritional Standards - dairy
Dr R Agnew

17:05 NS4 Nutritional Standards - beef
Dr B Cottrill

17:20 NS5 Nutritional Standards - sheep
Professor J J Robinson

17:35 *Discussion*

18:00 *End of session*

Theatre Sessions

Tuesday, 9 April 2002

Room X001

PIG MANAGEMENT AND HEALTH

Chair -Dr Jonathan Guy & Professor Sandra Edwards

- | | | |
|-------|----|--|
| 10:30 | 33 | The effect of breed on the expression of adverse social behaviour in pigs
<i>K Breuer, M E M Sutcliffe, J T Mercer, K A Rance, V E Beattie, I A Sneddon & S A Edwards</i> |
| 10:50 | 34 | An investigation into the effect of tryptophan on tail chewing behaviour of growing pigs
<i>J McIntyre & S A Edwards</i> |
| 11:10 | 35 | Consistency in piglet mortality in individual sows and factors affecting piglet mortality
<i>K Fujita, R B D'Eath, & S Jarvis</i> |
| 11:30 | 36 | Effect of leaving piglets in the farrowing rooms post-weaning and mixing pre-weaning on piglet performance
<i>M J Allen, A H Stewart & A M Mackenzie</i> |
| 11:50 | 37 | Effect of weaning age, mixing strategy and group size on the welfare and productivity of weaned pigs
<i>N E O'Connell, V E Beattie, D J Kilpatrick & N Walker</i> |
| 12:10 | 38 | Alternatives to nose-ringing in outdoor sows: the provision of a special rooting area
<i>H L I Bornett & S A Edwards</i> |

12:30 *Lunch*

DAIRY CATTLE

Chair -Professor David Leaver & Dr Hannah Wicks

- | | | |
|-------|----|---|
| 13:40 | 39 | The development of maintenance energy requirement and energetic efficiency for lactation from production data of lactating dairy cows
<i>R E Agnew, T Yan, J J Murphy, C P Ferris & F J Gordon</i> |
| 14:00 | 40 | The effect of cow genotype on energy partitioning between milk and body tissue
<i>T Yan, R E Agnew, T W J Keady & C S Mayne</i> |
| 14:20 | 41 | An investigation of the efficiency of nutrient utilization for milk production by Holstein and Norwegian breeds of dairy cattle
<i>R E Agnew, M G Porter, T Yan, C S Mayne & T W J Keady</i> |
| 14:40 | 42 | Energy balance profiles for the first three lactations of dairy cows estimated using random regression
<i>M P Coffey, G Simm & S Brotherstone</i> |
| 15:00 | 43 | The effect of stocking rate on the performance of two breeds of dairy cattle at pasture
<i>A D Crawford & C S Mayne</i> |

15:40 *Tea*

17:00 **WPSA GORDON MEMORIAL LECTURE**

Theatre Sessions
Tuesday, 9 April 2002

Room L001

10:30 **WPSA - NUTRITION**

LIGHTING FOR POULTRY (WPSA/BSAS)

Chair - Dr G Perry

The session is dedicated to Prof. Trevor Morris for his work and achievements in lighting for poultry.

13:30 LP1 Photo-induced prolactin release and reproductive function
Prof. P. Sharp, Roslin Institute

14:00 LP2 Light and how birds perceive their environment
Dr. N. Prescott, Silsoe Institute

14:30 LP3 Lighting for commercial egg production
Dr. P. Lewis

15:00 LP4 Lighting for turkey production
Prof. M. Forbes, University of Leeds

15:30 *Tea*

16:00 **WPSA - LIGHTING (SUBMITTED)**

Room L001

18:00 **BSAS AGM**

Theatre Sessions

Tuesday, 9 April 2002

Room L002

CONTROL OF LEPTINS

Chair - Dr R J Vernon

- 10:30 LEP2 Regulation of leptin expression in farm animals
Dr Y Chilliard, C Delavaud & M Bonnet, INRA, France
- 11:10 44 Estimation of genetic variation in plasma leptin concentrations in pre-pubertal heifers
M D Royal, A P F Flint, R Webb, D Blache & J A Woolliams
- 11:25 45 Association of leptin polymorphisms with milk yield, dry matter intake, energy balance, luteal activity and serum leptin levels during lactation in HF dairy cows
S C Liefers, R F Veerkamp, M F W te Pas, C Delavaud, Y Chilliard & T van der Lende
- 11:40 46 Lactation induces hypoleptinaemia and activates orexigenic hypothalamic pathways in sheep
A Sorensen, C L Adam, P Findlay, M Marie & R G Vernon
- 11:55 47 Long-term effect of food intake on adipose tissue and leptin secretion during long days in Soay rams
M Marie, P A Findlay, L Thomas & C L Adam
- 12:10 48 Recombinant leptin mutants and leptin binding proteins aimed to block leptin action *in vivo*
A Gertler, Y Sandowski & N Raver
- 12:30 Lunch

ETHICAL ISSUES IN ANIMAL SCIENCE

Chair - Dr Mike Wilkinson

- 16:00 ETH1 Welfare and Ethics
Dr R Scruton, Sunday Hill Farm, Brinksworth
- 16:40 ETH2 The legacy of positivism and the role of ethics in animal science
Dr P B Thompson, Purdue University, Indiana, USA
- 17:00 ETH3 Ethical issues in animal biotechnology
Professor P Sandøe, S B Christiansen & J Lassen, Centre for Bioethics & Risk Management, Denmark
- 17:40 ETH4 The ethical basis of intensive livestock production systems
Rev Dr G Gatward, The Arthur Rank Centre, Stoneleigh Park

(Delegates attending ISAE are also permitted to attend this session)

Theatre Sessions

Tuesday, 9 April 2002

Room L005

RUMINANT ISSUES

Chair - Professor John Robinson

- | | | |
|-------|----|---|
| 10:30 | 49 | Effect of wilting and type of additive on the fatty acid composition of grass silage
<i>H E Warren, J K S Tweed, S J Youell, R J Dewhurst, J D Wood & N D Scollan</i> |
| 10:50 | 50 | Odd-chain fatty acids as markers of the microbial colonisation of freshly-ingested grass and microbial contamination of dacron bag residues
<i>E J Kim, R T Evans, J K S Tweed, D R Davies, R J Merry & R J Dewhurst</i> |
| 11:10 | 51 | The relationship between metabolisable energy concentration and nutrient digestibility in grass silages offered to sheep at maintenance
<i>R E Agnew & T Yan</i> |
| 11:30 | 52 | Effects of crossbred ewe genotype and ram genotype on lamb meat quality from the lowland sheep flock
<i>L E R Dawson, A F Carson & B W Moss</i> |
| 11:50 | 53 | The effect of management system at lambing and flock genetics on lamb output on lowland sheep farms
<i>A F Carson & L E R Dawson</i> |
| 12:30 | | <i>Lunch</i> |

ADVANCES IN GENETICS

Chair - Dr Neil Cameron

- | | | |
|-------|----|---|
| 13:40 | 54 | Expected increases in genetic merit in the UK Aberdeen Angus beef cattle breed from applying optimised selection
<i>S Avendaño, B Villanueva & J A Woolliams</i> |
| 14:00 | 55 | Genetic management strategies for controlling infectious diseases in livestock populations
<i>S C Bishop & K Mackenzie</i> |
| 14:20 | 56 | Comparison of deterministic and stochastic methods of calculating identity-by-descent matrices using multiple markers
<i>A C Sørensen, R Pong-Wong, J J Windig & J A Woolliams</i> |
| 14:40 | 57 | Benefits from marker assisted selection with optimised contributions and prior information on the QTL effect
<i>B Villanueva, R Pong-Wong & J A Woolliams</i> |
| 15:00 | 58 | Predicting inbreeding using markers and long-term genetic contributions
<i>J Hernandez-Sanchez, C S Haley & J A Woolliams</i> |
| 15:20 | 59 | Genetic lag in a Meishan x Large White pig backcross population: A simulation study
<i>E E Wall, J A Woolliams & P M Visscher</i> |
| 15:40 | | <i>Tea</i> |

ANIMAL PRODUCTION IN DEVELOPING COUNTRIES

Chair - Professor Emyr Owen

- | | | |
|-------|-----|---|
| 16:00 | DC1 | The 'Livestock Revolution' - can poor livestock-keepers benefit?
<i>Dr C Peacock, FARM-Africa, London</i> |
| 16:40 | 60 | Comparison of available and required metabolisable energy (ME) resources for livestock during winter in an agro-pastoral system of the Hindu Kush - Himalayan region of Pakistan
<i>R Abdur, A J Duncan, I J Gordon, I A Wright, D W Miller, P Frutos & R Atiq</i> |
| 17:00 | 61 | Sheep productivity in private flocks in Kazakstan
<i>I A Wright & N I Malmakov</i> |
| 17:20 | 62 | Farmers' evaluation of five technologies that enhance sheep productivity in West Asia
<i>E F Thomson, A M Martini & R Tutwiler</i> |

Theatre Sessions

Wednesday, 10 April 2002

Room X001

ENZYMES IN FEED RESOURCES

Chair -Dr Andrew Chesson

- 08:30 EFR1 Are enzyme additives useful for ruminant feeds?
Dr R H Phipps & J D Sutton, University of Reding & M K Bhat, Institute for Food research, Norwich
- 09:00 EFR2 Feed enzymes for ruminants. The need for a rational screening system
Dr D Colombatto, Agriculture and Agri Food Canada, D P Morgavi, INRA, France and F L Mould, University of Reading
- 09:30 EFR3 Enzymes in feed resources for farm livestock - overview
Dr A K Kies, A B M Klein Holkenborg & H K Schulze, DSM Food Specialties - Agri Ingredients, The Netherlands
- 10:00 63 Enzymes in poultry diets
T Acamovic
- 10:30 *Coffee*

HAZARD AND RISK ANALYSIS

Chair -Dr Peter E V Williams

- 10:50 HRA1 Application of hazard analysis critical control point (HACCP) in the feed industry
Dr H Raine, ABNA Ltd, Peterborough
- 11:20 HRA2 Zoonotic risk assessment and risk management in the red meat sector
Mr M Attenborough, K R Matthews & D Armstrong, Meat & Livestock Commission, Milton Keynes
- 11:50 HRA3 Market perceptions of food and feed safety
Prof P Thomas, Artilus Ltd, Edinburgh
- 12:30 *Lunch*

Room L001 - WPSA Programme

08:30 **WPSA AGM**

09:00 **BEHAVIOUR AND WELFARE**

11:00 **PHYSIOLOGY/GROWTH/HEALTH/ENVIRONMENT**

Theatre Sessions

Wednesday, 10 April 2002

L002

ISAE/BSAS - ETHOLOGY & WELFARE

(SEE PAGE 10)

OPEN COMMUNICATIONS 1

Chair -Dr Jon Day

- 08:30 ISAE1 Introduction - Jon Day
- 08:40 64 The effect of auditory stimulation on the behaviour of kennelled dogs
D L Wells, L Graham & PG Hepper
- 09:00 65 Why do people bring dogs back to the pound? A questionnaire study in Milan, Italy
F Mondelli, D Levi, S Magistrelli, E Prato Previde & P Valsecchi
- 09:20 66 Investigating temperament traits in cattle for quantitative trait loci (QTL) identification
N Ball, M J Haskell, J L Williams & J M Deag
- 09:40 67 The qualitative assessment of pig behaviour using repertory grid technique
D Grajfoner, F Wemelsfelder & E Austin
- 10:00 68 Social learning and facilitation of operant key-pecking by domestic hens
C M Sherwin, C M Heyes & C J Nicol
- 10:30 *Coffee*

OPEN COMMUNICATIONS 2

- 10:50 69 The effect of providing a choice of social environment on performance and behaviour of gestating sows
J Williams, F Baker, R Hooper & A Stewart
- 11:10 70 Breed differences in the expression of maternal care at parturition persist throughout the lactation period in sheep
H E Pickup & C M Dwyer
- 11:30 71 Individual differences in sociability and the trade-offs made by sheep grazing in a patchy environment
A M Sibbald & R J Hooper
- 11:50 72 Spatial distribution during grazing reflects dominance relationships between individual sheep
H W Erhard, A M Sibbald & E Fábrega-Romans
- 12:30 *Lunch*

13:30 ISAE AGM

LABORATORY ANIMAL

- 14:00 LA1 Male Management – Coping with aggression problems in male laboratory mice
P L P Van Loo, B FM Van Zutphen and V Baumans
- 14:20 LA2 Home sweet home? assessing welfare in the home cage
R S Lewis and J L Hurst
- 14:40 LA3 Preparing laboratory beagles for life as a working dog
S Heath, J Thomas and C Deegan
- 15:00 LA4 Understanding behaviour: the relevance of applied ethology for laboratory animal science
I A S Olsson, C M Nevison, E Patterson-Kane, C M Sherwin, H A Van de Weerd and H Würbel
- 15:20 Concluding remarks
- 15:30 session finish

Theatre Sessions

Wednesday, 10 April 2002

Room L005

DIET MANIPULATION & RUMINANT HEALTH

Chair - Dr John Donaldson

- 09:00 73 Meta-analysis of experiments investigating cadmium accumulation in the liver and kidney of sheep
S H Prankel, R M Nixon & C J C Phillips
- 09:20 74 The metabolizable protein requirement of the parasitized, lactating ewe
J G M Houdijk, I Kyriazakis, F Jackson & R L Coop
- 09:40 75 The effect of rearing regime on the development of the mammary gland and claw abnormalities in high genetic merit Holstein-Friesian dairy herd replacements
A F Carson, L E R Dawson, A R G Wylie & F J Gordon
- 10:00 Coffee

QUALITY BEEF - THE WAY FORWARD

Chair - Mr Simon Mead and Mr Mike Keeble



- 10:30 FM1 Nutrition and production
Dr M Lewis, SAC Edinburgh & Mr J Bell, Berryfield Farm
- 11:10 FM2 Genetic improvement
Dr D Pullar, MLC, Milton Keynes & Mr R Fuller, J SR Farms
- 11:50 FM3 Meat Quality
Dr A Stevenson, Northern Counties Meat Group & Prof J Wood, University of Bristol
- 12:30 End of session and lunch
- 13:00 Visit to JSR Farms, Givendale. A chance to see beef improvement in action and talk informally with some of the morning's speakers. A bus will take and return delegates to York University.

Poster Sessions
Monday 13:40 - Tuesday 12:45 hours

Authors in attendance - Monday 14:30-15:20

EXHIBITION CENTRE

Poster Discussion - Monday 15:20-16:00

NON-RUMINANT NUTRITION

Chair - Dr Pinder Gill

- 76 The use of *in vitro* digestibility techniques in determining the nutritive value of barley and barley-based diets for growing pigs
M E E McCann & K J McCracken
- 77 Digestibility and nitrogen retention in Creole pigs fed with feedstuffs available in peasant systems in south of Mexico
W Trejo Lizama, R H Santos Ricalde, R B Casso & S Anderson
- 78 The effect of form and placement of feed for newly weaned piglets on growth performance for three weeks postweaning
B P Corrigan, M Ellis, B F Wolter, J M DeDecker & S E Curtis
- 79 Influence of dietary zinc oxide and antibiotic addition on gut morphology, microflora and digesta pH in piglets
J A Pickard, J Wiseman & M A Varley
- 80 Enhancement of the ability of the porcine colonic microflora to resist colonisation by *Salmonella poona*, in an *in vitro* intestinal simulation
K Hillman
- 81 The effect of dry matter concentration of liquid diets on the growth performance of grower-finisher pigs
J D Beal, P H Brooks & B P Gill
- 82 The effect of dry matter concentration on component digestibility and retention in growing/finishing pigs fed diets varying only in water:dry matter ratio
J E Thompson, J Wiseman & B P Gill
- 83 Influence of feeding fermented liquid feed on faecal bacterial flora and selected colostrum parameters of lactating sows
V Demecková, D Kelly, P H Brooks & A Campbell
- 84 Effect of L-Thyroxine Hormone (T4) on compensatory growth in broiler chicks
A Hassanabadi & A Golian
- 85 A detoxification method of Khorasan cottonseed meal gossypol for broiler chicken rations
F Tabatabai-Yazdi, M Salarmoini

Poster Sessions

Monday 13:40 - Tuesday 12:45

Authors in attendance - Monday 15:45-16:30

GOODRICKE

Poster Discussion - Monday 16:30-17:30

LEPTINS

Chair - Dr Melissa Royal

- 86 Effect of date of mating and housing on lamb growth, adipose tissue deposition and plasma leptin concentrations
S Pearce, A Mostyn, E Genever, D H Keisler, R Webb, M E Symonds & T Stephenson
- 87 Leptin interrelationships to energy-related metabolites and hormones in fed and fasted sheep
A R G Wylie, D J Devlin & A J Bjourson
- 88 Exploration of somatotrophic axis, leptin, insulin and blood biochemical parameters in ewes naturally affected with scrapie
V Gayrard, N Picard-Hagen, C Viguié, C Delavaud, P L Toutain & Y Chilliard
- 89 Hourly measurement of plasma leptin and cortisol concentrations in non-pregnant ewes under group housing conditions over 23 hours
J Dandrea, S Pearce, G Davidson, C Morrison, P Goddard, D H Keisler, T Stephenson & M E Symonds
- 90 Absence of plasma leptin or metabolite variation after subcutaneous melatonin release in adult ewe
C Delavaud, A Daveau, M Turret, B Malpoux & Y Chilliard
- 91 Post-partum blood leptin concentrations and energy balance in first calving dairy heifers
A R G Wylie, D J Devlin, T W J Keady, C S Mayne, R E Agnew & T Yan
- 92 Plasma leptin in transition dairy cows. Effects of body fatness, ambient temperature and dietary factors
T Kokkonen, J Taponen, S Alasuutari, M Nousiainen, T Anttila, L Syrjälä-Qvist, C Delavaud, Y Chilliard, M Tuori & A T Tesfa
- 93 Serum leptin concentration is a poor predictor of body fat content in lactating dairy cows
A R G Wylie, D J Devlin, C S Mayne, R E Agnew, D C Patterson, R W J Steen & F J Gordon
- 94 The effect of grass or maize diet on plasma leptin and adipose tissue lipogenic enzyme activities in steers
Y Faulconnier, C Delavaud, J Fléchet, D Dozias, R Jailler, C Jurie, D Micol & Y Chilliard
- 95 The influence of dietary conjugated linoleic acid (CLA) serum leptin concentration in lactating sows
C Corino, D Magistrelli, V Bontempo & F Rosi
- 96 Leptin and its effect on glucose and insulin metabolism in pregnant and lactating goats
U Heintges, M Hennies, A Gertler & H Sauerwein
- 97 Influence of a nonforage diet on plasma leptin in dairy goats throughout lactation
F Rosi & L Rapetti
- 98 Leptin fully suppresses insulin secretion induced by acetylcholine and its effect is reversed by tolbutamide in *in vitro* perfused chicken pancreas
Y Benomar, M Taouis & N Rideau
- 99 The effect of gender and physical parameters on plasma concentrations of leptin and thyroid hormones in the horse
R R Geering, J C Litten, S E Cook, P J Johnson, I J Lean & L Clarke
- 100 Influence of food intake timing on daily variations of leptin and other metabolic variables in NZW rabbits
F Rosi, D Magistrelli & F Vitrani

Poster Sessions

Monday 13:40 - Tuesday 12:45

Authors in attendance - Monday 15:20-16:00

GOODRICKE

LACTATION

- 101 Replacement of water by liquid whey and its influence on performance of Holstein steers
A R Bayat, R Valizadeh & A A Nasserian
- 102 The use of production data of feeding studies in lactating dairy cows to validate energy feeding systems
T Yan, R E Agnew, J J Murphy, C P Ferris & F J Gordon
- 103 Maternal nitrogen balance of dairy cows during late gestation
G Jaurena, J M Moorby, W J Fisher & D W R Davies
- 104 Application of a dynamic mechanistic model of small intestinal starch digestion in the dairy cow
J A N Mills, E Kebreab, L A Crompton, J Dijkstra & J France
- 105 Calcium metabolism in Saanen goats - a kinetic model
D M S S Vitti, E Kebreab, J B Lopes, C J Dorigan, K T De Resende, A L Abdalla, L A Crompton & J France
- 106 Application of a dynamic nitrogen model to reduce nutrient pollution by dairy cows
E Kebreab, J A N Mills, L A Crompton & J France
- 107 Incremental effects of ground rapeseed on digestion in lactating dairy cows
C K Reynolds, D J Humphries, J D Sutton, B Lupoli & D E Beever
- 108 Replacement of soyabean meal by barley or wheat distillers grains for lactating dairy cows
J D Sutton, D J Humphries, R H Phipps & M Witt
- 109 Prediction of the intake potential of grass silage in the supplemented diets of lactating dairy cows
B F McNamee, V B Woods, D J Kilpatrick & F J Gordon
- 110 Production response of lactating dairy cows fed increasing amounts of ground rapeseed
C K Reynolds, R H Phipps, A K Jones, B Lupoli & D E Beever
- 111 Response of dairy cows offered a high feed value grass silage, to concentrate feed level and concentrate crude protein content
C P Ferris, F J Gordon, D C Patterson & D J Kilpatrick
- 112 Response of grazing dairy cows to level of concentrate supplementation and concentrate protein content
C P Ferris, D C Patterson, F J Gordon & D J Kilpatrick
- 113 The reduction of nutrient digestibility and energy concentration from maintenance feeding (sheep) to production feeding (lactating dairy cows) in grass silage-based diets
T Yan, C P Ferris, R E Agnew & F J Gordon

Poster Sessions
Monday 13:40 - Tuesday 12:45

Authors in attendance - Monday 15:20-16:00

EXHIBITION CENTRE

RUMINANT NUTRITION ISSUES

- 114 Comparision of Calan gate and easy feed systems on the intake of dairy cows
C P Ferris, T W J Keady, F J Gordon & D J Kilpatrick
- 115 The potential of a range of maize silages, included as a component of grass silage based diets, to increase the dry matter and energy intakes of finishing beef cattle
R M Kirkland, R W J Steen, F J Gordon & T W J Keady
- 116 Processed urea treated whole-crop wheat (Alkalage) for finishing beef cattle
S P Marsh & C Rudden
- 117 Effect of a yeast culture on the performance of early-weaned beef calves
S P Marsh & W A J Thompson
- 118 The effect of replacement of concentrate by fodder beet on rumen fermentation and VFA production in steer cattle
D G McIlmoyle, D C Patterson & F J Gordon
- 119 Effect of feeding soya-bean meal or distillers grains on the performance of silage fed beef cattle
S P Marsh, W A J Carr, & M Witt
- 120 Performance of red deer grazing pure white clover or perennial ryegrass swards
D W Deakin, D G Chapple & M H Davies
- 121 Effect of energy source or fibre level in concentrates fed to finishing Swaledale lambs
C A Middlemass, C M Minter & M Marsden
- 122 The effect of live yeast (Yeastacc) and yeast culture (Diamond V XP) on the performance of intensively fed Swaledale store lambs
C M Minter, C A Middlemas, S P Higham, M Marsden
- 123 *n*-alkane concentration in semi-natural plant species found in upland areas of the UK
J J Hyslop, S L Hetherington, H F Adamson & J B Griffiths

Poster Sessions
Monday 13:40 - Tuesday 12:45

Authors in attendance - Tuesday 10:00-11:00

GOODRICKE

REPRODUCTION

- 124 Early lactation responses to red clover or ryegrass silages offered to dairy cows during the dry period
G Jaurena, J M Moorby, W J Fisher & D W R Davies
- 125 Effects of behaviour selection on litter size, fetal development and plasma progesterone concentrations during pregnancy in silver fox vixens
L V Osadchuk
- 126 Influence of genetic merit on fertility traits of dairy cattle on commercial farms
H C F Wicks & J D Leaver
- 127 Pattern of follicular growth and ovulation frequency in post-partum beef cows after a temporal calf removal associated with a gonadotrophin release hormone
G Quintans & C Viñoles
- 128 Measurement of milk progesterone using near infrared spectroscopy
D V Scholey, G E Mann & P C Garnsworthy
- 129 Influence of plasma urea nitrogen on superovulatory response and embryo recovery in Merino ewes
M Omid
- 130 The effect of dilution rates and freezing methods on post-thawing motility of Baluchi ram spermatozoa
Y J Ahangari, M Nowrozi & A Soleimani
- 131 Effects of calcium salts of fatty acids on follicular characteristics and several blood parameters in two fat-tailed sheep breeds
M J Zamiri, E Rowghani & S M Ghoreishi

Poster Sessions
Monday 13:40 - Tuesday 12:45

Authors in attendance - Tuesday 10:00-11:00

EXHIBITION CENTRE

BROWSE LEGUMES AND TANNINS

- 132 The evaluation of *Acacia* and other tree pods for goats: influence of rumen fluid source and polyethylene glycol addition on *in vitro* gas production
V Mlambo, F L Mould, T Smith, E Owen & I Mueller-Harvey
- 133 Tannin contents and *in vitro* digestibility of Brazilian browses
E F Nozella, S L S Cabral Filho, I C S Bueno, A L Abdalla & D M S S Vitti
- 134 A comparison of solvents for extraction of condensed tannins in tree leaves
C M Capetillo Leal, R Reyes Ramirez, C A Sandoval-Castro & D Camacho Morfin
- 135 A comparison of solvents for extraction of polyphenolic compounds in tree leaves
C M Capetillo Leal, R Reyes Ramirez, C A Sandoval-Castro & D Camacho Morfin
- 136 Rumen degradability for the assessment of tannin-rich forage from Brazil
E F Nozella, S L S Cabral Filho, I C S Bueno, L A Castilho, A L Abdalla & D M S S Vitti
- 137 *In vitro* gas production of foliage and fruits of forage trees with and without added PEG
R Pinto Ruiz, C A Sandoval Castro, L Ramirez Avilés
- 138 The effects of quebracho tannins on rumen degradation and post-rumen digestion of pea and lupin seeds
M H L Bento, A J Cowieson T Acamovic & J M F Abreu

Poster Sessions

Monday 13:40 - Tuesday 12:45

Authors in attendance - Tuesday 10:00-11:00

EXHIBITION CENTRE

TROPICAL FEEDS

- 139 Intake, digestibility and microbial-N synthesis in Creole goats fed grass/forage tree silage
J Sol, F J Solorio-Sánchez & C A Sandoval-Castro
- 140 Milk yield in Creole goats fed grass/forage tree silage
J Sol, F J Solorio-Sánchez & C A Sandoval-Castro
- 141 Relationship between *in vivo*, *in situ* and *in vitro* techniques for evaluation of tropical forages in Brazil
I C S Bueno, S L S Cabral Filho, L L Oetting, M C Machado, S P Gobbo & A L Abdalla
- 142 Voluntary intake and apparent digestibility of tropical forages fed to sheep in Brazil
I C S Bueno, S L S Cabral Filho, L L Oetting & A L Abdalla
- 143 The effect of wilting or soaking on the nutritive value of two invasive weed species in Nepal
C Rymer & D I Givens
- 144 Degradability characteristics of dry matter and crude protein of Iranian forages in ruminant
A Taghizadeh, J Shoja, G Moghaddam, H Jhonmohammadi & P Yasan
- 145 Apparent digestibility, rumen fermentation characteristics and microbial N entering duodenum in Iranian Baloochi Lambs fed diets formulated to contain similar amounts of ERDP with different protein sources
M Danesh Mesgaran
- 146 Ruminal peptide and soluble protein N concentrations in Iranian Baloochi lambs fed diets containing lucerne hay or silage
A R Heravi Moosavi & M Danesh Mesgaran
- 147 Degradability characteristics and intestinal protein apparent digestibility of Iranian soybean and cottonseed meals as assessed by the mobile nylon bag technique
M Danesh Mesgaran
- 148 The influence of chemical treatment on the degradation characteristics of weathered maize stover components
M Mwiinga, F L Mould, E Owen & E A Butler
- 149 Nutritive value of sunflower as whole crop silage in Uruguay
D Cozzolino, A Fassio & E Fernandez
- 150 The degradation characteristics of three Sri Lankan rice straw cultivars, following treatment with urea, assessed using three *in vitro* techniques
G Weerakkody, F L Mould, E Owen & E A Butler
- 151 The nutritive value of sugar beet pulp treated with *Neurospora Sitophila*
Y Rouzbehan & S A Shojaosadati
- 152 Effects of fungal treated wheat straw on feed intake and growth of fattening lambs
A R Foroughi & A Nikkhah
- 153 Nutritive value of *Agaricus bisporus* mushroom spent wheat straw as ruminant feed
H Fazaeli & A R Talebian Masoodi
- 154 Rice water in feeding of Holstein dairy cattle
A Teimouri Yansari, R Valizadeh & A Nasserian

Poster Sessions
Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Tuesday 13:20-14:00

EXHIBITION CENTRE

PIG AND CATTLE GROWTH

- 155 Voluntary feed intake in autumn calving continental x dairy suckler cows given a grass silage based diet *ad libitum*
J J Hyslop, B A Hedley, R Keatinge & D G Chapple
- 156 The effect of slaughter weight on growth and carcass traits of Holstein-Friesian bulls offered a cereal-based diet
R M Kirkland, R W J Steen & D C Patterson
- 157 The effect of different levels of polyclonal antibody inclusion in a whey-based calf milk replacer on calf performances
R J Fallon, B Earley & J Twigge
- 158 Carcass traits of Friesian, Piemontese x Friesian and Romagnola x Friesian steers finished on two feeding levels for two periods
M G Keane
- 159 Piglet liveweight and rate of gain as predictors of body tissue composition
R D Slade & H M Miller
- 160 Effect of removing pigs from a pen at slaughter weight on the growth performance of the remaining animals
J M DeDecker, M Ellis, B F Wolter, B P Corrigan & S E Curtis
- 161 Effects of stocking rate and feeder-trough space on pig performance in wean-to-finish production systems
B F Wolter, M Ellis, S E Curtis, J M DeDecker, B P Corrigan E N Parr & D M Webel

Poster Sessions

Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Tuesday 13:20-14:00

GOODRICKE

Poster Discussion - Tuesday 14:00-14:45

RUMEN DEGRADABILITY STUDIES

Chair - Professor Bob Orskov

- 162 The reproduction of *in sacco* degradation profiles using an *in vitro* batch culture technique
F L Mould, K Kanelias, E Owen & E A Butler
- 163 A Rusitec based model of acute rumen acidosis: effects of nitrogen source on pH and feed degradation before and after glucose infusion
C U Haubi, F L Mould & C K Reynolds
- 164 Fresh or frozen rumen contents as sources of inocula to estimate *in vitro* degradation of ruminant feeds
R Mohamed, A S Chaudhry & P Rowlinson
- 165 The affect of rumen fluid collection time on its fermentative capacity and the stability of rumen conditions in sheep fed a constant diet
J S Payne, A R Hamersley, J C Milligan & J A Huntington
- 166 Variation in the *in vitro* hydrolytic activity of rumen and faecal inocula
M Afdal, F L Mould, C Rymer, E Owen & D I Givens
- 167 Variation in gas release profiles *in vitro* as influenced by volatile fatty acid composition and rate of addition to two standard incubation media
E Krystallidou, F L Mould, E Owen & E A Butler
- 168 The rumen degradability of crimped wheat in comparison with conventionally treated grain assessed *in vitro*
F L Mould & K Cave
- 169 Impact of feed supplements on *in vitro* degradability of barley straw and grass nuts
A S Chaudhry, P Rowlinson & C J Lister
- 170 An *in vitro* model to assess the impact of lipid on the rate and extent of fibre degradation
F L Mould, K J Shingfield, C K Reynolds & A S Grandison
- 171 Chemical composition, digestibility and predicted energy value of whole-crop forage lupins
E R Deaville & D I Givens
- 172 Prediction of ADF and NDF in faeces by NIRS to assess diet composition in grazing animals
D Cozzolino, A La Manna, D Vaz Martins

Poster Sessions

Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Tuesday 13:20-14:00

GOODRICKE

Poster Discussion - Tuesday 14:45-15:30

FEED TO FOOD PRODUCT QUALITY

Chair - Dr Phil Garnsworthy & Adam Locke

- 173 Relationship between calpastatin activity and the slow and fast myosin heavy chain content of ovine skeletal muscles
A Q Sazili, P L Sensky, T Parr, R G Bardsley & P J Buttery
- 174 Relationship between meat quality and blood acid-base measurements in pigs
D N Hamilton, T M Bertol, M Ellis, S N Carr & F K McKeith
- 175 Comparison of immunochemical and histochemical analysis of fibre type distribution in ovine skeletal muscles
A Q Sazili, T Parr, P L Sensky, S W Jones, R G Bardsley & P J Buttery
- 176 Effect of feeding diets with excess dietary leucine to finishing pigs on growth and carcass characteristics, meat quality, and intramuscular fat levels
Y Hyun, M Ellis & F K McKeith
- 177 Rumen biohydrogenation of polyunsaturated fatty acid sources and their effect on plasma fatty acid status in sheep
S L Cooper, L A Sinclair, R G Wilkinson, S Chikunya, K Hallett, M Enser & J D Wood
- 178 Fatty acid composition and quality of muscle from steers fed ruminally protected lipid
M Enser, N Scollan, S Gulati, G Nute, K Hallett, J D Wood & I Richardson
- 179 Effect of feeding diets rich in n-3 PUFA at different stages of the production period on the PUFA composition of intramuscular fat in Belgian Blue double muscled bulls
K Raes, A Balcaen, E Claeys, D Demeyer & S De Smet
- 180 Effect of production systems on carcass quality characteristics of lambs
G Arsenos, P Fortomaris, G Banos, C Deligiannis, T Lainas, N Katsaounis, E Kasapidou, C Stamataris & D Zygoyiannis
- 181 $\Delta 9$ -desaturase activity in the mammary gland of lactating dairy cows
A L Lock & P C Garnsworthy
- 182 Conjugated linoleic acid and trans C18:1 in muscle and adipose tissue of lambs fed supplements containing n-3 polyunsaturated fatty acids
M Enser, A M Wachira, L A Sinclair, R G Wilkinson, K G Hallett & J D Wood
- 183 Manipulating lamb conjugated linoleic acid content and stearoyl coenzyme A desaturase mRNA by either a grass or concentrate feeding regime
R J Wynn, Z C T R Daniel, A M Salter & P J Buttery
- 184 Modelling the odour of cooked meat *in vitro* using different fatty acids
M M Campo, G R Nute, J D Wood, S J Elmore, D S Mottram & M Enser
- 185 Effect of diet on vitamin E metabolism and meat quality in lambs
E Kasapidou, J D Wood, L A Sinclair, R G Wilkinson & M Enser
- 186 Relationships between skatole and androstenone in Large White and Meishan pigs
F W Whittington, E Doran, J D McGivan & J D Wood
- 187 The estimation of chemical, physical and sensory parameters of homogenized fresh pork eye muscle by near infrared reflectance spectroscopy (NIRS)
R S Park, R E Agnew, V E Beattie & B W Moss
- 188 The effects of level of bedding provision and time in lairage on the contamination of hides of finished cattle with potentially zoonotic bacteria
L Heasman, M L Hutchison & M H Davies

Poster Sessions
Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Tuesday 15:40 - 16:00

EXHIBITION CENTRE

ANIMAL BREEDING

- 189 Genetic evaluation of Iranian Holstein dairy cows with the use of covariance function model
H Farhangfar, P Rowlinson & M B Willis
- 190 Genetic and environmental factors affecting some measures of yield and fertility in a registered Canadian Holstein dairy herd in Iran
A Toosi
- 191 An analysis of the dual purpose cattle (B *Taurus* x B *indicus*) lactation curve)
H Magaña-Sevilla & C A Sandoval-Castro
- 192 Heritability of mastitis and lameness in dairy cows using threshold models
R H Pirzada, I ApDewi & J B Owen
- 193 Production and carcass traits of progeny sired by Limousin bulls with high and below average beef values
S P Marsh & D Pullar
- 194 Optimisation of selection decisions in the UK Meatline breed of sheep
S Avendaño, B Villanueva, J A Woolliams
- 195 Growth and carcass characteristics of crossbred (Mule) sheep
A M van Heelsum, R M Lewis, W Haresign, D Jones, S Williams, M H Davies & O Davies

Poster Sessions
Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Wednesday 10:00 - 10:30
Poster Discussion - Wednesday 10:30 - 11:00

EXHIBITION CENTRE

DIET MANIPULATION AND RUMINANT HEALTH

Chair - Dr Richard Dewhurst

- 196 Effects of B vitamins and methyl group donors on milk production, milk composition and blood biochemistry in dairy cows
S E Richards, S Hicklin, T Lord, A Nickson, J Long, J Brackenbury & J R Newbold
- 197 Response of early lactation dairy cows to the inclusion of the liver technology product ABN-LiFT in the total mixed ration
C A Middlemass, C M Minter & M Marsden
- 198 The effects of feeding propylene glycol to ewes during late pregnancy and early lactation
D Handford, J Percival, D Wilde & A M Mackenzie
- 199 The effect locomotion score and lameness and on dry matter intake and behaviour in dairy cattle
J K Margerison, B Winkler & G Stephens
- 200 The effect of biotin supplementation on the mechanical properties of the hoof horn and lameness in dairy cows
B Winkler & J K Margerison
- 201 Effects of body condition and dry cow feeding on disease incidences in the first 100 days of lactation in Holstein-Friesian cows
R J Dewhurst, J M Moorby, D W R Davies, W J Fisher, N C Friggens & K L Ingvarsen
- 202 Influence of genetic merit on mastitis and lameness in dairy cattle on commercial farms
H C F Wicks & J D Leaver
- 203 The effect of molybdenum, iron and sulphur supplementation on immune function in growing lambs
C L Williams, A M Mackenzie & R G Wilkinson
- 204 Replacement of lucerne hay with bagasse pith treated with *Pleurotus ulmarious* in the diet of finishing Shal l lambs
M Rezaeian & K H Hoseinipajhooh

Poster Sessions

Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Wednesday 10:30 - 11:00

GOODRICKE

Poster Discussion - Wednesday 11:00 - 11:30

ENZYMES

Chair -Dr Paul Blanchard

- 205 Performance of weaner pigs when fed diets containing different combinations of exogenous xylanase and betaine
J Wiseman & P H Simmins
- 206 Effect of increasing stearyl coenzyme A desaturase mRNA concentrations using forage and concentrate diets on the fatty acid composition of ovine adipose tissue
Z C T R Daniel, R J Wynn A M Salter & P J Buttery
- 207 NSP enzymes for broiler diets containing barley
P J Blanchard, J H Ward, D Feuerstein & A Knox
- 208 Effects of incubation fluid pH and fibrolytic enzymes on the *in vitro* fermentation of pure substrates, assessed using the Reading Pressure Technique (RPT)
D Colombatto, F L Mould, M K Bhat & E Owen
- 209 The effect of fibrolytic enzyme application on the rate and extent of alfalfa stem fermentation, assessed *in vitro*
D Colombatto, F L Mould, M K Bhat & E Owen
- 210 Screening of fibrolytic enzymes as additives for ruminant diets: relationship between enzyme activities and the *in vitro* degradation of enzyme-treated forages
D Colombatto, D P Morgavi, A F Furtado & K A Beauchemin
- 211 Effect of soluble non starch polysaccharide degrading enzyme supplements on nutrient efficiency of young broiler chickens fed wheat with different viscosities and triticle
H Kermanshahi & M D Shakouri
- 212 Yeast application and its derived products to reduce aflatoxicosis
A S Baptista, J Horii, M A Calori-Domingues, E M Gloria & M R Vizioli
- 213 Influence of selected fibrolytic enzymes on the ensiling characteristics and *in vitro* rumen degradation of maize silage
D Colombatto, F L Mould, M K Bhat, R H Phipps & E Owen

Poster Sessions

Tuesday 13:15 - Wednesday 12:30

Authors in attendance - Wednesday 10:20 - 10:50

EXHIBITION CENTRE

ISAE/BSAS ETHOLOGY & WELFARE

- 214 The effect of castration on plasma cortisol level and time budget in farmed guanaco calves (*Lama guanicoe*)
B Zapata, K Fuentes, C Bonacic, B González, J L Riveros, M P Marín & F Bas
- 215 Domestic chicks' responses to PECKA-BLOCKS and string enrichment devices
R B Jones & C Ruschak
- 216 The presence of a familiar odourant increases social affiliation when pairs of unfamiliar chicks are tested in a novel environment
R B Jones & P Redman
- 217 Effect of rearing environment on 'human approach behaviour' in grower-finisher pigs
J R Amory, G P Pearce, A M Mackenzie & M A Varley
- 218 Effect of rearing environment on the prevalence of gastric ulcers in slaughter pigs
J R Amory, G P Pearce & A M Mackenzie
- 219 Performance of newly-weaned pigs when housed with a pig with experience of creep food
C A Morgan, A B Lawrence & B Garth
- 220 Differences in the behaviour of high and low yielding dairy cows selected by genetic merit
M D Cooper, D R Arney & C J C Phillips
- 221 Factors affecting the neonatal viability and the relationship between it and subsequent creep feeding behaviour of suckling piglets
H F Lee, C A Morgan, M C Appleby & N K Waran
- 222 Interactions between behavioural development, plasma cortisol and thermoregulation in the neonatal lamb
C M Dwyer
- 223 Influence of salt application on biting by growing-finisher pigs
C A Tsourgiannis, J F Robertson & V R Fowler
- 224 Sham dustbathing and use of dustbaths in furnished cages for laying hens
I A S Olsson & L J Keeling
- 225 Excretory behaviour of lactating sows in an outdoor organic production system
J Marcellis, H Kelly, H Browning, J Day & S Edwards
- 226 Effect of tooth clipping on piglet behaviour
L A Boyle, R M Boyle & P B Lynch
- 227 Effect of floor type on the welfare of piglets in the farrowing house
E Lewis, L Boyle, B Lynch, P Brophy & J O'Doherty
- 228 Does the experience of the stock-person alter the behaviour of the ewe during handling and management
A B Notman, J Hill & C Savage-Roberts

WPSA (UK Branch) ANNUAL MEETING

9/10 April 2002

Exhibition Centre,
University of York

Tuesday 9th April 2002

Central Hall

09:00 *Hammond Memorial Lecture. Prof J. Webster.*
Has animal science failed society?

10:10 Coffee and poster viewing

ROOM L001

OPENING WPSA ANNUAL MEETING

SUBMITTED PAPERS - NUTRITION

Chairman: M. Macleod

10:45 *S.M. Ellis, K.J. McCracken, & M.A Collins., Queen's University, Belfast.*
The effects of a feed acidifier or oligosaccharide, with and without enzyme, on the gut microflora and performance of broiler chickens

11:00 *A.J. Cowieson, T Acamovic., & M.R. Bedford, SAC Ayr.*
The effects of dietary enzymes on the endogenous losses from broiler chickens

11:15 *D.E. Cross, T. Acamovic, S.G. Deans, & R.M. McDevitt, SAC Ayr.*
The effects of dietary inclusion of herbs and their volatile oils on the performance of growing chickens

11:30 *K.J. McCracken, S. Millar, & J. George, Dept. Ag. & Rural Devel., Belfast.*
The Effects of storage on *in vitro* viscosity of wheat and on nutritive value for broilers

11:45 *S.S.P. Silva, & R.R. Smithard, University of Newcastle.*
The Effect of birds' ages or period of feeding on effects of exogenous enzymes

12:00 Poster Discussion Session 1

12:30 Lunch

ROOM L001

JOINT WPSA/BSAS LIGHTING FOR POULTRY

The session is dedicated to Prof. Trevor Morris for his work and achievements in lighting for poultry.

INVITED PAPERS

Chairman: G. Perry

- 13:30 *Prof. P. Sharp, Roslin Institute*
Photo-induced prolactin release and reproductive function
- 14:00 *Dr. N. Prescott, Silsoe Institute*
Light and how birds perceive their environment
- 14:30 *Dr. P. Lewis*
Lighting for commercial egg production
- 15:00 *Prof. M. Forbes, University of Leeds*
Lighting for turkey production
- 15:30 Tea break and poster viewing

SUBMITTED PAPERS

Chairman: S. Solomon

- 16:00 *C.L. Barber, N.B. Prescott, C. M. Wathes, C. Le Sueur & G.C. Perry, Silsoe & Bristol University.*
Preferences of growing ducklings and turkey poults for illuminance
- 16:15 *P.E. Taylor & G.B. Scott, Harper Adams University College.*
The influence of visual perception on the ability of laying hens to negotiate jumps between horizontal perches at different light intensities
- 16:30 *H. H. Kristensen, N.B. Prescott, J. Ladewig, G. Perry, P.F. Johnsen, & C M Wathes, Royal Vet. & Ag. University, Denmark & Silsoe.*
Light quality preferences of broiler chickens
- 16:45 Close

ROOM X001

GORDON MEMORIAL LECTURE

- 17:00 *Dr T.F. Davidson.*
Immunology
- 18:00 Gordon Memorial Reception – Vanburgh College, University of York
- 20:00 WPSA ANNUAL DINNER - Vanburgh College, University of York

Wednesday 10 April 2002

ROOM L001

08:30 **WPSA (UK BRANCH) AGM**

SUBMITTED PAPERS - BEHAVIOUR AND WELFARE

Chairman: J.Savory

- 09:00 *C.J. Savory, D. Percival & I. Yuill, SAC Ayr.*
Influence of perch space allowance on perching behaviour of laying hens
- 09:15 *M.J.Albentosa & J.J.Cooper, University of Lincoln.*
Effects of cage height and stocking density on the behaviour, perch use and distribution of laying hens in furnished cages
- 09:30 *J.J. Cooper, L. McAfee & H. Skinn, University of Lincoln.*
The behavioural responses of domestic ducks to nipple drinkers, bell drinkers and water troughs
- 09:45 *A. Edmond, P.M. Hocking, C.E. Channing, G.W. Robertson, L.G. Cromarty, M.M. Bain and S.E. Solomon, Glasgow Vet. School & Roslin Institute.*
A comparison of invasive and non-invasive measures of fear in commercial and traditional lines of chicken
- 10:00 Poster Discussion Session 2
- 10:20 Coffee and poster viewing. Poster authors in attendance.

ROOM L001

SUBMITTED PAPERS – PHYSIOLOGY/GROWTH/HEALTH/ENVIRONMENT

Chairman: I. Dunn

- 11:00 *G.M. McEntee, A.J. Cowieson, K.A. Rance & R. M. McDevitt, SAC Ayr*
Effect of genetic selection on nutrient digestibility in broilers
- 11:15 *R.R. Hunter & M.A. Mitchell, Roslin Institute*
A comparison of small intestinal enterocyte oxygen consumption in chicken lines genetically selected for divergent production traits
- 11:30 *V. E. Cooke, M.A.Mitchell, A.J.Carlisle & D.A. Sandercock, Roslin Institute*
A myo-protective effect of estrogen in lines of chickens selected for divergent production traits?
- 11:45 *P. M. Hocking, C. O. N. Ikeobi, A. Sewalem, D. Morrice, D. Windsor, C.S. Haley & D. W. Burt, Roslin Institute*
Identifying Quantitative Trait Loci for growth, muscling and fatness traits in a broiler x layer cross
- 12:00 *P.F. Surai, N.H.C. Sparks, T. Acamovic & R. M. McDevitt, SAC Ayr*
Antioxidant systems in the developing chickens: Vitamins E and C in the liver of the broiler chick
- 12:15 *N.Hover, A.J.Gavin, D.Lewis & R.M. McDevitt, SAC Ayr*
Broiler breed and diet effect on added water holding capacity of breast meat
- 12:30 Poster Discussion Session 3
- 12:55 Presentation of President's Prizes and close of meeting.

Poster Sessions

NUTRITION

1. *W. Al-Marzooqi & J. Wiseman, University of Nottingham*
The effect of trypsin inhibitor content of near-isogenic pea lines on amino acid ileal digestibility in broiler chicks
2. *W.A. Sumadja & J. Wiseman, University of Nottingham*
Intestinal and total tract digestibility of starch from two near-isogenic wheat cultivars determined in broiler chicks
3. *V.R. Pirgozliev, S.P. Rose, P.S. Kettlewell & M. Field, Harper Adams & Advanta Seeds*
Comparison of feeding quality of durum and aestivum wheat for broiler chickens
4. *K. J. McCracken & S. Miller, Queen's University, Belfast.*
Effects of diet composition and xylanase on apparent energy value of Canadian wheats
5. *J. George & K. J. McCracken, Queen's University, Belfast*
Changes in *in vitro* viscosity (IVV) of whole or ground wheat grain during storage and effects of storage temperature
6. *K.E.M. McGonigle & K J McCracken, Queen's University, Belfast*
Study on the effects of Annatto (*Bixa Orellana*) and *Yucca Schidegera* on cholesterol content and yolk colour
7. *M. Mottaghitalab & Z. Taraz, University of Guilan, Iran*
Effects of Garlic powder (*Allium sativum*) on egg yolk and blood serum cholesterol in *Aryan Breed* Laying hen
8. *T. Chidothe, T. Acamovic & R. M. McDevitt, SAC Ayr.*
The effects of dietary brewers and distillers grains, with and without xylanase supplementation, on broiler performance
9. *T. Chidothe, R. M. McDevitt & T. Acamovic, SAC Ayr.*
The effect of enzyme supplementation on the nutritional value of brewers and distillers grains for broiler chickens
10. *E. Demir & A. Sekeroglu, University of Gaziosmanpasa, Turkey*
The efficacy of phytase in broiler diets containing low phosphorus, calcium and crude protein
11. *F. Shariatmadari & S.M. Golkar, Tarbiat Modaress University, Iran*
The effect of feed restriction methods on compensatory growth of broiler chickens
12. *J-H. Kim & M.G. Macleod, Roslin Institute*
Diet selection on lysine content by growing broiler chickens
13. *A.J. Cowieson & T. Acamovic, SAC Ayr*
The nutritive value of *Lunaria biennis* seeds for broiler chickens
14. *H.Nassiri Moghaddm & M.Rezaei, Mazandaran University & Ferdowsi University, Iran*
Use of different levels of Rice Bran (RB) in egg type layer diet
15. *S. S. P Silva, N. Priyankarage, S. P Gunaratne, U. L. P. Mangalika, & G. D. J. K. Gunaratne, Veterinary Research Institute, Sri Lanka*
Effect of substituting fish meal by poultry offal meal on performance, nutrient utilisation and nitrogen excretion in broiler chickens

BEHAVIOUR/WELFARE

16. *C. Drakley & A. Walker, ADAS Gleadthorpe*
The effect of stocking density and cage height on the health, behaviour, physiology and production of laying hens in furnished cages
17. *C. A Weeks, University of Bristol*
Some behavioural differences between fast and slow-growing strains of poultry
18. *V. Sandilands, K. Powell & C.J. Savory, SAC Ayr*
Does preen oil composition differ with feather pecking status in laying hens?
19. *N.R. Taylor, N.B. Prescott, J.R. Jarvis & C.M. Wathes, Silsoe Research Institute*
Can domestic fowl detect the flicker of fluorescent lights?

PHYSIOLOGY/ENVIRONMENT/HEALTH

20. *C. Drakley & A. Walker, ADAS Gleadthorpe*
Monitoring of red mite habitat preference and distribution in a barn egg production system
21. *N.Hover, D.Lewis, & B.Woods, SAC Ayr*
Novel fibre typing technique for meat quality assessment
22. *J.C. Lay, S.P. Rose & L.J. Kirby, Harper Adams*
The development of the digestive tract in fast and slow-growing strains of turkeys and chickens
23. *E.V. Pratt, S.P. Rose, A.A. Keeling & E. Kerhaul, Harper Adams*
Reducing nitrogen loss from laying hen manure by the addition of carbon-based amendments during short-term storage
24. *M. Mottaghitalab & E. Valizadeh, University of Guilan, Iran*
Garlic extract and aromatase



ANEXO 5
CARTA O CERTIFICADO DE ACEPTACIÓN DEL POSTULANTE O
COMPROMISO DE PARTICIPACIÓN

BSAS

Ref: 173,

19 December 2001

Miss Beatriz Zapata
Facultad de Agronomía e Ingeniería Forestal
Pontificia Universidad Católica de Chile
Vicuña Mackenna 4860
Casilla 306-22
Santiago Chile

BSAS Annual Meeting, 8-10 April 2002, University of York

Thank you for submitting the summary :

The effect of castration on plasma cortisol level and time budget in farmed guanaco calves (*Lama guanicoe*)
B Zapata, K Fuentes, C Bonacic, B González, J L Riveros, M P Marín & F Bas

The Programme Committee are pleased to confirm this summary has been accepted in the **POSTER SESSION ISAE/BSAS Ethology & welfare, Tuesday 13:15-12:30 Wednesday**. Authors are asked to stand by their poster during the periods of **10:20-10:50 Wednesday**.

If your summary requires amendment then please follow the comments below. Please ensure that your summary follows the BSAS format and typographical conventions. It will be published camera ready. Where you may have acknowledged support to SOAEFD, please ensure that this comes under the heading 'Acknowledgements', and that all references are given in full and under the heading 'References'.

Your summary requires the following amendments: *Please check grammar and formatting.*

A revised summary must be received no later than Monday, 14 January 2002 otherwise it will not be published in the Proceedings. If you have a problem with this deadline then please contact the office immediately. Please remember to adhere to the required format, A4, justify text within margins of 2cm for right/left/bottom and 1 cm margin at top of page. Summaries that do not conform will be rejected.

Two copies of your revised version are required, preferably by email as an attachment, (Microsoft Word), one of which should highlight the modifications that have been made within the summary. We will check this against the original summary which we have on file. Please quote summary reference : **Annual Meeting 173** in the email subject heading. You may send by disc if you do not have access to email. We do not accept Apple Macintosh discs.

POSTER PRESENTATIONS: Authors must be in attendance for the time specified above. You are responsible for mounting your material on the boards provided and for its removal after the session. Posters will be inspected and authors advised of inadequate presentations. Posters should remain up for the whole of the session period. Enclosed are the Guidelines for preparation of posters. Please study these carefully before preparing your material. The Society reserves the right to refuse a poster if its form of presentation differs significantly from the guidelines.

Guidelines for producing a poster are available on the BSAS website www.bsas.org.uk

The effect of castration on plasma cortisol level and time budget in farmed guanaco calves (*Lama guanicoe*)^{*}

B. Zapata¹, K. Fuentes², C. Bonacic¹, B. González¹, J.L. Riveros¹, M.P. Marín² and F.Bas¹

¹Facultad de Agronomía e Ingeniería Forestal, Pontificia Universidad Católica de Chile, Vicuña Mackenna 4860, Santiago, Chile ²Escuela de Medicina Veterinaria, Universidad Santo Tomás, Ejército 146, Santiago, Chile

Introduction Castration is a routine procedure for male farm animals. The ethics of castration are widely debated because the procedure may potentially result in pain and distress. The indications for early castration in farmed guanacos are: 1) prevention of aberrant behaviour in human-imprinted males, 2) elimination of inter-male aggression and 3) avoidance of accidental breeding (Fowler, 1998). In addition, it has been argued (Molony and Kent, 1997) that to study the pain response to castration is ethically acceptable as the overall welfare of the animal is improved by the procedure. Guanaco farming has been recently established in South America, and there is therefore little information available on how guanacos respond to castration. The purpose of this study was to assess pain in farmed guanacos. The hypothesis was that pain experienced by guanacos due to castration may be displayed in behavioural and physiological changes, as has been reported in lambs, calves and piglets. The study was carried out in 2001 on four-month-old farmed male guanaco. Changes in plasma cortisol concentration and the frequency of specific daytime behavioural postures and activities following castration are reported.

Materials and Methods Nine male guanacos (four months old, 31.8 ± 7.0 kg live weight) were used in this study. The animals were randomly allocated to one of two treatment groups: 1) handling (control) (n= 4) and 2) handling + castration (n=5). The animals were castrated using a surgical procedure (see Fowler, 1998). Both groups were infiltrated with local anaesthetic (3 ml lidocaine 2%). Plasma cortisol concentration (nmol/L) and the frequency (%) of five behavioural categories: walking (W), suckling (S), foraging (F), standing (St), lying (L), were monitored. Blood samples were taken from the jugular vein one week before castration, immediately before castration, then 2 hours, 24 hours and one week after castration. The average of the first and second sampling before castration was used as the baseline level. The frequency of behaviour was recorded between 11:00 and 17:00 for 3 days prior to castration, and for 5 days after castration. Plasma cortisol was analysed by ANOVA with repeated measurements (treatment as a factor, and simple contrast with the first level as baseline). MANOVA of the frequency of behavioural categories was conducted by day of study. P values of <0.05 were considered significant.

Results A significant effect of castration on plasma cortisol level was recorded (Table 1). Cortisol concentration in castrated guanacos peaked 4 hours after castration at 1.8 times the baseline level. It remained high for up to 24 hours, and returned to baseline one week after castration. In control guanacos, except for a fall 4 hours post handling, there were no significant differences in cortisol concentration compared to baseline level. Castrated animals spent more time lying down on the day of the operation, compared with the control (Table 1). No other behavioural changes were observed.

Table 1. Mean $\pm$ S.E.M. of cortisol and time budget in control and castrated guanacos

	Baseline	Mean $\pm$ S.E.M. Cortisol (nmol/L)				Frequency of behavioural categories $\pm$ S.E.M. (%)				
		4 h	24 h	1 week	Total	Walking	Standing	Suckling	Foraging	Lying
Control (n= 4)	20.7 ± 6.90	7.0 $\pm 1.44a$	27.9 ± 10.02	16.3 ± 4.82	16.8 ± 4.51	12.9 ± 2.95	15.3 ± 6.45	10.5 ± 2.22	38.8 ± 5.70	17.3 $\pm 6.10^*$
Castrated (n= 5)	28.3 ± 6.70	51.1 $\pm 8.07a$	49.6 $\pm 8.42a$	32.2 ± 3.72	47.0 $\pm 6.09^*$	12.6 ± 3.37	8.8 ± 2.13	7.6 ± 3.33	25.8 ± 8.1	45.2 ± 8.70

a= significant difference from baseline level, $p < 0.05$; * significant difference between treatment groups, $p < 0.05$).

Conclusions Pain following surgical castration produces an increase in plasma cortisol concentration and time spent lying down in farmed male guanaco calves. The observed changes were transient, indicating that the pain experienced is temporary. It is concluded that the use of analgesics should be considered for post operative care in castrated guanacos. Further studies are needed to confirm this.

^{*} This study was funded by The Wellcome Trust 057689/Z/99/Z and the Chilean Ministry of Agriculture (FIA, project N° c98-1-p-019).

References

- Fowler, 1998. *Medicine and Surgery of South American Camelids: Llama, Alpaca, Vicuña, Guanaco*. Iowa State University Press, Ames. 2nd edition.
- Molony, V. and Kent, E. 1997. Assessment of Acute Pain in Farm Animals Using Behavioral and Physiological Measurements. *Journal of Animal Science*. 75:266-272.

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	Non-member	£270 ☐	£90 ☐	£125 ☐
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students on or before 8 March 2002 (retired members - BSAS meeting only)		£ 70 ☒	£32.50 ☐	£ 60 ☒
One Day rate - includes teas/coffee, lunch and Proceedings Mon ☐ Tues ☐ Wed ☐		£125 ☐	£125 ☐	
Satellite - What Price Cheap Food?		exempt ☒	£ 50 ☐	£ 50 ☐

Deduct 10% off conference fee if you are attending more than one meeting. Not applicable to one day rate*

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ANEXO 6 COTIZACIONES



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Wednesday ☐	Wednesday ☐	Wednesday ☐

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