

# CALL FOR ABSTRACTS

1998 ANNUAL MEETING OF THE INTERNATIONAL EMBRYO TRANSFER SOCIETY

18-20 January; Boston Marriott Copley Place, Massachusetts, USA

Free communications will be presented as posters, abstracts of which will be published in the January, 1998 issue of *THERIOGENOLOGY*. Abstracts must be in English, and prepared according to *THERIOGENOLOGY'S* guidelines for direct offset reproduction; **abstracts must adhere rigidly to the guidelines on format, paper quality, and font size**. The abstract must report **unpublished, original data**, and contain objectives, experimental methods, results, and conclusions. Due to space **restrictions**, no one may be first author of more than one abstract or co-author of more than four abstracts. Each abstract will be subjected to **rigorous scientific review** by at least two referees. A **signed commitment to present the data in the poster session** at the annual conference is required. Students may enter their abstract in a competition sponsored by the IETS Foundation, and also are eligible to compete for three US\$500 travel awards. The Foundation also offers to young international scientists a grant to be awarded competitively on specific merit and need, consisting of up to US\$1500 to be applied toward travel and lodging; registration fees will be waived. Request details of eligibility, judging procedures, and prizes from the IETS office before preparing abstracts.

The **firm deadline for receipt** of the abstract (original and three photostatic copies) is **15 August 1997**. Abstracts received after this date will be returned. Do not fold your abstract and please provide some stiff backing to protect the abstract during transit. In addition to the hard copies, submission on disk (3.5 inch) is encouraged to facilitate processing. Acceptable word-processing formats are WordPerfect 5.1 or higher and Word 4.4 or higher. Fax copies and electronic submissions will not be accepted. They should be mailed (postmark deadline) by 1 August (outside North America) or 10 August (within North America) to:

*Dr James M. Robl, 1998 IETS Program Chairman*  
*Holdsworth Way*  
*Paige Laboratory*  
*University of Massachusetts*  
*Amherst, MA 01003-6410 USA*  
*Telephone: +001 413 545 2427; Fax: +001 413 545 6326*  
*E-mail: IETSJR@VASCI.UMASS.EDU*

**Instructions** for preparation of abstracts as well as information about the **student competition and travel awards** may be obtained from:

*Ms. Vicki Smith*  
*International Embryo Transfer Society*  
*1111 N. Dunlap Ave., Savoy, IL 61874 USA*  
*Telephone: +001/217-356-3182; Fax: +001/217-398-4119*

Topics of the invited papers include practical considerations for in vitro embryo production, fertilization, keeping the embryo viable in vitro, and methods and applications of genetic modifications in animals.

# Canadian Journal of Animal Science

An International Journal Edited by the Canadian Society of Animal Science

Canadian Journal of Animal Science publishes original research on all aspects of domestic livestock and their products. Papers are published in the following subject areas: **Animal Biotechnology, Application of Technology, Behavior and Management, Breeding and Genetics, Meats, Pastures and Forages, Physiology, Ruminant Nutrition, and Non-ruminant Nutrition.** Reviews, symposium papers and letters to the Editor are published occasionally as well as abstracts of technical papers presented at the annual meeting of the Canadian Society of Animal Science.

## Editor

A. Schaefer, Agriculture and Agri-Food Canada, Research Centre, Lacombe, Alberta, Canada T4L 1W1.

## Some Recent Papers Published in the Journal

- Increasing piglet survival through an improved farrowing management protocol, *K.R. White, D.M. Anderson, and L.A. Bate*
- Cattle use of microclimates on a northern latitude winter range, *G.A. Houseal and B.E. Olson*
- Estimation of carcass composition by computer image analysis in the cross sections of cross-bred steers, *A.B. Karnuah, K. Moriya, K. Mitani, T. Yamazaki, and Y. Sasaki*
- The effect of dietary menhaden meal and storage on the omega-3 fatty acids and sensory attributes of egg yolk in laying hens, *D.M. Nash, R.M.G. Hamilton, K.A. Sanford, and H.W. Hulan*
- Comparison of methods for isolation of protozoa from ruminal fluid, *L. Neill and M. Ivan*

Information about Canadian Journal of Animal Science is available online at: <http://www.aic.ca>

## Submission of manuscripts

Original research papers (four copies) should be submitted to Mr. T. Fenton, Agricultural Institute of Canada, Suite 1112, 141 Laurier Ave. W., Ottawa, ON, Canada K1P 5J3. Papers are subject to peer review, a page charge is levied on accepted papers.

## Subscriptions

*Canadian Journal of Animal Science* is published in March, June, September and December.

Subscription rates for 1997 are: for individuals in Canada \$58.00, in all other countries \$62.00; institutional rates are \$90.00 in Canada, \$113.00 in all other countries. Prices are in Canadian dollars, but may be paid in the US equivalent. Surface mail free, airmail add C\$55.00. Canadian subscribers add 7% GST (GST registration number is R106689094). ISSN 0008-3984

**Write to :** Subscriptions, Agricultural Institute of Canada, Suite 1112, 141 Laurier Ave. W., Ottawa, Ontario, Canada K1P 5J3. Tel: (613) 232-9459, Fax: (613) 594-5190, E-mail [journals@aic.ca](mailto:journals@aic.ca)

**Published by the Agricultural Institute of Canada**

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

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

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

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

*Keywords.* Up to a maximum of five keywords selected from the *CAB Thesaurus* (1995) or from an equivalent reference volume should be listed at the end of the Abstract.

*References.* Only papers closely related to the author's work should be referred to; exhaustive lists should be avoided. References with three or more authors should be cited in the first and subsequent occasions with the first author in full followed by *et al.* (e.g. Smith, Jones and Brown: Smith *et al.*). References with two authors should be cited in full on all occasions. References should be given in full in the Reference list and it is the responsibility of authors to check for absolute accuracy in every detail of the reference.

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

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

*Annual subscription* is £165.00 (or \$295.00 in the USA and Canada) and the price for a single part is £28.00 (or \$50.00) net.

*Abstracts of papers presented at British Society of Animal Science winter meeting* are published as a separate section in the June issue of *Animal Science*.

*Correspondence* regarding subscriptions and sales (current and back numbers of the Journal) and any other enquiries, including those concerning copyright, should be addressed to: Durrant Periodicals, Winton Lea, Pencaitland, East Lothian, Scotland EH34 5AY.

#### *Senior editor*

T. L. J. Lawrence, University of Liverpool, UK

#### *Editors*

M. V. Dodson, Washington State University, USA

W. Haresign, University of Wales, Aberystwyth, UK

J. Jensen, Danish Institute of Animal Science, Foulum, Denmark

J. J. Kennelly, University of Alberta, Canada

I. J. Lean, Wye College, University of London, UK

K. Lundström, Swedish University of Agricultural Sciences, Sweden

C. S. Mayne, Agricultural Research Institute of Northern Ireland, Hillsborough, UK

C. A. Morgan, Scottish Agricultural College, Edinburgh, UK

P. J. Moughan, Massey University, New Zealand

P. W. Nicholson, University of Sydney, Australia

J. D. Oldham, Scottish Agricultural College, Edinburgh, UK

E. Owen, University of Reading, UK

J. D. Reed, University of Wisconsin, USA

R. E. Short, US Department of Agriculture, Montana, USA

A. J. F. Webster, University of Bristol, UK

J. D. Wood, University of Bristol, UK

J. A. Woolliams, Roslin Institute, Edinburgh, UK

#### *Technical editors*

Hilary Davies, Liverpool, UK

Carol Woolliams, Peebles, UK

---

*Notes to users in the USA.* The appearance of the fee codes in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use on the following conditions. The copier must pay the stated per-copy fee through the Copyright Clearance Center, Inc., 21 Congress Street, Salem, Massachusetts 01970, USA, for copying beyond that permitted by sections 107 and 108 of the US Copyright Law. For territories outside North America, permission should be sought direct from the copyright holder. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising and promotional purposes, for creating new collective works or for resale.

# Contents

Page

<b>Veerkamp, R. F. and Brotherstone, S.</b> Genetic correlations between linear type traits, food intake, live weight and condition score in Holstein Friesian dairy cattle	385
<b>Carruthers, V. R., Neil, P. G. and Dalley, D. E.</b> Effect of altering the non-structural:structural carbohydrate ratio in a pasture diet on milk production and ruminal metabolites in cows in early and late lactation	393
<b>Homer, D. B., Cuthbertson, A., Homer, D. L. M. and McMenamin, P.</b> Eating quality of beef from different sire breeds	403
<b>Rometsch, M., Roser, U., Becker, K. and Susenbeth, A.</b> Estimation of energy expenditure from heart rate measurements in working oxen	409
<b>Pleasants, A. B.</b> Use of a stochastic model of a calving distribution for beef cows for formulating optimal natural mating strategies	413
<b>Lavrenčić, A., Stefanon, B. and Susmel, P.</b> An evaluation of the Gompertz model in degradability studies of forage chemical components	423
<b>Mawuenyegah, P. O., Warly, L., Harumoto, T. and Fujihara, T.</b> Effect of ammoniation or protein supplementation of barley straw on digestion and purine derivative excretion in sheep	433
<b>Mawuenyegah, P. O., Warly, L., Harumoto, T. and Fujihara, T.</b> Effect of ammonia treatment or protein supplementation on rumination behaviour in sheep given barley straw	441
<b>Frutos, P., Mantecón, A. R. and Giráldez, F. J.</b> Relationship of body condition score and live weight with body composition in mature Churra ewes	447
<b>Kominakis, A., Nitter, G., Fewson, D. and Rogdakis, E.</b> Evaluation of the efficiency of alternative selection schemes and breeding objectives in dairy sheep of Greece	453
<b>Hutchings, N. J.</b> Estimating the metabolizable energy requirement for pregnancy in sheep	463
<b>Bishop, S. C. and Stear, M. J.</b> Modelling responses to selection for resistance to gastro-intestinal parasites in sheep	469
<b>Silanikove, N., Gilboa, N. and Nitsan, Z.</b> Interactions among tannins, supplementation and polyethylene glycol in goats given oak leaves: effects on digestion and food intake	479
<b>Sanz Sampelayo, M. R., Ruiz Mariscal, I., Gil Extremera, F. and Boza, J.</b> The effect of different concentrations of protein and fat in milk replacers on protein utilization in kid goats	485
<b>Ferret, A., Gasa, J., Plaixats, J., Casañas, F., Bosch, L. and Nuez, F.</b> Prediction of voluntary intake and digestibility of maize silages given to sheep from morphological and chemical composition, <i>in vitro</i> digestibility or rumen degradation characteristics	493
<b>Russel, A. J. F., Alexieva, S. A. and Elston, D. A.</b> The effect of the introduction of the Thoka gene for fecundity on lamb production from Cheviot ewes	503
<b>Russel, A. J. F. and Redden, H. L.</b> The effect of nutrition on fibre growth in the alpaca	509
<b>Ferguson, N. S., Gous, R. M. and Emmans, G. C.</b> Predicting the effects of animal variation on growth and food intake in growing pigs using simulation modelling	513
<b>Yang, T. S. and Lin, J. H.</b> Variation of heart size and its correlation with growth performance and vascular space in domestic pigs	523
<b>Fernández-Figares, I., Prieto, the late C., Nieto, R. and Aguilera, J. F.</b> Free amino acid concentrations in plasma, muscle and liver as indirect measures of protein adequacy in growing chickens	529
<b>Hanlon, A. J., Rhind, S. M., Reid, H. W., Burrells, C. and Lawrence, A. B.</b> Effects of isolation on the behaviour, live-weight gain, adrenal capacity and immune responses of weaned red deer hind calves	541
<b>Authors' index</b>	547
<b>Subject index</b>	550