

If you picked out next week's journal reading in your usual way... and we picked it out with ASCA®, how would we compare?

How many journals would you check?

ASCA covers more than 4,900 journals, digging out articles of interest no matter where they appear.

How thoroughly would you check each journal?

ASCA's computer examines each journal item by item and cover to cover using a personal, custom-tailored profile to pick out those articles which reflect your exact reading interests.

Would you be able to locate relevant articles which appear in foreign journals?

ASCA covers journals from 45 countries.

How long would digging out those articles take you? One hour? Two? Maybe three?

With ASCA, the computer does the work. You do no digging at all. For only \$3 a week you receive a weekly listing of articles you should be reading. And you save time worth far more than that.

Give ASCA a try for the next 13 weeks at only \$39. Just call us at 215-923-3300 and ask for an ASCA information specialist. Or fill in and mail the coupon below. Then relax and let ASCA pick out your reading for you.

©1976 ISI

isi® Institute for Scientific Information®
325 Chestnut Street, Philadelphia, Pennsylvania 19106

500-396c

I'd like to take advantage of your introductory offer and try ASCA® for 13 weeks at \$39. Please contact me.

Name _____

Position _____

Organization _____

Address _____ City _____

State _____ Zip _____ Country _____

Telephone _____ Extension _____

The journal you are reading and 5000 others are regularly covered in *CURRENT CONTENTS*®.

ANIMAL PRODUCTION

JOURNAL OF
THE BRITISH SOCIETY OF ANIMAL PRODUCTION

Edited by

J. A. F. ROOK
M. BICHARD (*Proceedings*)
W. G. HILL
J. HODGSON
A. M. RAVEN
J. C. TAYLER
A. J. F. WEBSTER
M. B. WILLIS

VOLUME 23
1976

LONGMAN

PRINTED IN GREAT BRITAIN BY
T. & A. CONSTABLE LIMITED, EDINBURGH

CONTENTS OF VOLUME 23

(LISTED ALPHABETICALLY BY AUTHOR)

	PAGE
ASTON, K., <i>see</i> TAYLER, J. C.	
AVIS, P. R. D., <i>see</i> KEMPSTER, A. J.	
BALL, C., <i>see</i> BROADBENT, P. J.	
BEN-GHEDALIA, D., <i>see</i> TAGARI, H.	
BICHARD, M., <i>see</i> FOWLER, V. R.	
BLAXTER, K. L. The use of resources	267
BONAITI, B., <i>see</i> MCCLELLAND, T. H.	
BROADBENT, P. J. Growth and carcass characteristics of weaned single-suckled calves slaughtered on achieving slaughter condition or 8 or 16 weeks later	156
BROADBENT, P. J. The utilization of whole or bruised barley grain of different moisture contents given to beef cattle as a supplement to a forage-based diet	165
BROADBENT, P. J., BALL, C. and DODSWORTH, T. L. Growth and carcass characteristics of purebred and crossbred cattle with special reference to their carcass lean : bone ratios	341
BROADBENT, P. J., <i>see also</i> RUTTER, W.	
BUCK, N. G., LIGHT, D., RUTHERFORD, A., MILLER, M., RENNIE, T. W., PRATCHETT, D., CAPPER, B. S. and TRAIL, J. C. M. Environmental factors affecting beef cow reproductive performance in Botswana	357
CAMPBELL, R. G. A note on the use of a feed flavour to stimulate the feed intake of weaner pigs	417
CAMPLING, R. C., <i>see</i> NORDIN, M.	
CAPPER, B. S., <i>see</i> BUCK, N. G.	
CARPENTER, E. M., <i>see</i> HOWARD, A. N.	
COLE, D. J. A., <i>see</i> HUGHES, P. E.	
CONNOLLY, J. and NOLAN, T. Design and analysis of mixed grazing experiments	63
CRABTREE, R. M., <i>see</i> WEBSTER, A. J. F.	
CRAMP, D. G., <i>see</i> PHIPPS, R. H.	
CUTHBERTSON, A., <i>see</i> KEMPSTER, A. J.	
DAVEY, A. W. F., <i>see</i> HOLMES, C. W.	
DEMPFLE, L. A note on the properties of the cumulative difference method for sire evaluation	121
DODSWORTH, T. L., <i>see</i> BROADBENT, P. J.	
DUFOUR, J. J., <i>see</i> FAHMY, M. H.	
FAHMY, M. H. and DUFOUR, J. J. Effects of post-weaning stress and feeding management on return to oestrus and reproductive traits during early pregnancy in swine	103

	PAGE
FAHMY, M. H., HOLTMANN, W. B. and MACINTYRE, T. M. Evaluation of performance at slaughter of twenty combinations of three-breed crosses of pigs	95
FARRELL, D. J., <i>see</i> IVAN, M.	
FOWLER, V. R., BICHARD, M. and PEASE, A. Objectives in pig breeding	365
GIVENS, R. L., <i>see</i> MORRISON, S. R.	
GORDON, F. J. A note on the use of kale as a replacement for cereal-based concentrates for milk production	125
GORDON, J. G., <i>see</i> WEBSTER, A. J. F.	
HADJIPANAYIOTOU, M. and LOUCA, A. A note on the value of dried citrus pulp and grape marc as barley replacements in calf fattening diets	129
HALLIDAY, R. A note on immunoglobulin concentrations in Scottish Black-face lambs born to 1- or 2-yr-old ewes	425
HARRIES, J. M., WILLIAMS, D. R. and POMEROY, R. W. Comparative retail value of beef carcasses from different groups of animals	349
HARRINGTON, G., <i>see</i> KEMPSTER, A. J.	
HEITMAN, H., Jr., <i>see</i> MORRISON, S. R.	
HILL, W. G., <i>see</i> SALES, JILL	
HINOJOSA, C., A., <i>see</i> MADALENA, F. E.	
HOLMES, C. W. and DAVEY, A. W. F. The energy metabolism of young Jersey and Friesian calves fed fresh milk	43
HOLTMANN, W. B., <i>see</i> FAHMY, M. H.	
HOLZER, Z., TAGARI, H., LEVY, D. and VOLCANI, R. Soaking of complete fattening rations high in poor roughage. 4. The effect on deposition and on fatty acid composition of bovine fat	173
HOLZER, Z., <i>see also</i> TAGARI, H.	
HOWARD, A. N. and SMITH, W. C. The Belgian Piétrain as a sire of crossbred pigs slaughtered at 64 kg live weight. 1. Performance and carcass characteristics	389
HOWARD, A. N., SMITH, W. C., LESSER, D. and CARPENTER, E. M. The Belgian Piétrain as a sire of crossbred pigs slaughtered at 64 kg live weight. 2. Butcher and consumer reactions to meat from the crosses	395
HUGHES, P. E. and COLE, D. J. A. Reproduction in the gilt. 2. The influence of gilt age at boar introduction on the attainment of puberty	89
ILAN, D., <i>see</i> TAGARI, H.	
IVAN, M. and FARRELL, D. J. Nutritional evaluation of wheat. 5. Disappearance of components in digesta of pigs prepared with two-reentrant cannulae	111
JEDLICKA, J., MOJTO, J. and SIDOR, V. Correlation between 17-OHCS levels influenced by heat stress and some basic carcass value indices in pigs	243
KEMPSTER, A. J., AVIS, P. R. D. and SMITH, R. J. Fat distribution in steer carcasses of different breeds and crosses. 2. Distribution between joints	223
KEMPSTER, A. J., CUTHBERTSON, A. and HARRINGTON, G. Fat distribution in steer carcasses of different breeds and crosses. 1. Distribution between depots	25

KERR, C. D., <i>see</i> RUSSEL, A. J. F.	
KILKENNY, J. B., <i>see</i> POLLOTT, G. E.	
LAIRD, T. R., <i>see</i> RUTTER, W.	
LESSER, D., <i>see</i> HOWARD, A. N.	
LEVY, D., <i>see</i> HOLZER, Z., <i>see also</i> TAGARI, H.	
LIGHT, D., <i>see</i> BUCK, N. G.	
LINCOLN, G. A., <i>see</i> RYDER, M. L.	
LOUCA, A., <i>see</i> HADJIPANAYIOTOU, M.	
MCCLELLAND, T. H., BONAITI, B. and TAYLOR, St C. S. Breed differences in body composition of equally mature sheep	281
MACDONALD, A. J., <i>see</i> RUSSEL, A. J. F.	
MACINTYRE, T. M., <i>see</i> FAHMY, M. H.	
MADALENA, F. E. and HINOJOSA, C., A. Reproductive performance of Zebu compared with Charolais × Zebu females in a humid tropical environment	55
MEESE, G. B. A note on teat order and metabolic rate in piglets up to 57 days old	253
MILLER, M., <i>see</i> BUCK, N. G.	
MOJTO, J., <i>see</i> JEDLICKA, J.	
MOLLISON, G. S., <i>see</i> WEBSTER, A. J. F.	
MORE O'FERRALL, G. J. Phenotypic and genetic parameters of productivity in Galway ewes	295
MORRISON, S. R., GIVENS, R. L. and HEITMAN, H., Jr. A note on growth and food conversion in pigs at different air temperatures and ventilation rates	249
NOLAN, T., <i>see</i> CONNOLLY, J.	
NORDIN, M. and CAMPLING, R. C. Digestibility studies with cows given whole and rolled cereal grains	305
PEASE, A., <i>see</i> FOWLER, V. R.	
PENNING, INES M., <i>see</i> WILKINSON, J. M.	
PHIPPS, R. H. and CRAMP, D. G. The supplementation of maize silage for an autumn-calving dairy herd	191
POLLOTT, G. E. and KILKENNY, J. B. A note on the use of condition scoring in commercial sheep flocks	261
POMEROY, R. W., <i>see</i> HARRIES, J. M.	
PRATCHETT, D., <i>see</i> BUCK, N. G.	
PRICE, J., <i>see</i> SUTTLE, N. F.	
RENNIE, T. W., <i>see</i> BUCK, N. G.	
RUDD, BRENDA, <i>see</i> RUSSEL, A. J. F.	
RUSSEL, A. J. F., MACDONALD, A. J., KERR, C. D. and RUDD, BRENDA. Changes in live weight and body condition of rams of three breeds throughout the year	73
RUTHERFORD, A., <i>see</i> BUCK, N. G.	
RUTTER, W., BROADBENT, P. J. and LAIRD, T. R. A note on the pattern of concentrate feeding to ewes in late pregnancy	421

	PAGE
RYDER, M. L. and LINCOLN, G. A. A note on the effect of changes in day-length on the seasonal wool growth cycle in Soay sheep	257
SALES, JILL and HILL, W. G. Effect of sampling errors on efficiency of selection indices. 2. Use of information on associated traits for improvement of a single trait	1
SIDOR, V., <i>see</i> JEDLIČKA, J.	
SMITH, C. Alternative forms of genetic controls	403
SMITH, C. A note on the efficiency of different forms of comparison among foreign breeds	413
SMITH, J. S., <i>see</i> WEBSTER, A. J. F.	
SMITH, R. J., <i>see</i> KEMPSTER, A. J.	
SMITH, W. C., <i>see</i> HOWARD, A. N.	
SUTTLE, N. F. and PRICE, J. The potential toxicity of copper-rich animal excreta to sheep	233
TAGARI, H., BEN-GHEDALIA, D. and ZAMWEL, S. Urea phosphate as a partial protein replacer in sheep concentrate diets	81
TAGARI, H., LEVY, D., HOLZER, Z. and ILAN, D. Poultry litter for intensive beef production	317
TAGARI, H., <i>see also</i> HOLZER, Z.	
TAYLER, J. C. and ASTON, K. Milk production from diets of silage and dried forage. 1. Effects of methods of processing dried grass and of including barley in the supplementation of grass silage given <i>ad libitum</i>	197
TAYLER, J. C. and ASTON, K. Milk production from diets of silage and dried forage. 2. Effect of ensiling ryegrass cut at two levels of digestibility and given <i>ad libitum</i> with supplements of dried grass pellets	211
TAYLOR, ST C. S. Multibreed designs. 1. Variation between breeds	133
TAYLOR, ST C. S. Multibreed designs. 2. Genetic variation within and between breeds	145
TAYLOR, ST C. S., <i>see also</i> MCCLELLAND, T. H.	
THOMPSON, R. Relationship between the cumulative difference and best linear unbiased predictor methods of evaluating bulls	15
TRAIL, J. C. M., <i>see</i> BUCK, N. G.	
VOLCANI, R., <i>see</i> HOLZER, Z.	
WEBSTER, A. J. F., GORDON, J. G. and SMITH, J. S. Energy exchanges of veal calves in relation to body weight, food intake and air temperature	35
WEBSTER, A. J. F., SMITH, J. S., CRABTREE, R. M. and MOLLISON, G. S. Prediction of the energy requirements for growth in beef cattle. 2. Hereford × British Friesian steers given dried grass or barley	329
WILKINSON, J. M. and PENNING, INES M. An intensive system of beef production from maize silage	181
WILLIAMS, D. R., <i>see</i> HARRIES, J. M.	
ZAMWEL, S., <i>see</i> TAGARI, H.	
PROCEEDINGS OF THE 62ND MEETING OF THE BRITISH SOCIETY OF ANIMAL PRODUCTION, HARROGATE, 15-17 MARCH 1976. The 1976 Sir John Hammond Memorial Lecture: K. L. Blaxter—The use of resources	267

Tables should be as simple and as few as possible. When constructing tables, it would be helpful if authors would take into account the size and shape of the pages of *Animal Production*.

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

References: Only papers closely related to the author's work should be referred to; exhaustive lists should be avoided. Bibliographical details should be in the following order: author's name, initials, year, title of paper, title of journal (abbreviated according to the World List of Scientific Periodicals), volume of journal, first and last page of paper. References should be listed in alphabetical order. When abstracts are referred to, the page reference should be followed by (Abstr.).

Examples:

BLAXTER, K. L. and WILSON, R. S. 1962. The voluntary intake of roughages by steers. *Anim. Prod.* 4: 351-358.

HAMMOND, J. 1932. *Growth and the Development of Mutton Qualities in the Sheep*. Oliver and Boyd, Edinburgh.

In the text, references should be made by giving author and year; at the first mention all authors should be named, thereafter the first author followed by *et al.* should be used for papers with more than two authors.

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

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

Animal Production is published six times a year in two volumes. Annual subscription is £20.00 (or \$56.00 in the U.S.A. and Canada) and the price for a single part is £4.00 (or \$12.00) net.

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

Business matters, including regular subscriptions and sales (current and back numbers of the Journal and the Proceedings) should be addressed to Longman Group, Journals Division, 43/45 Annandale Street, Edinburgh EH7 4AT.

Senior Editor

J. A. F. ROOK, Hannah Research Institute.

Editors

M. BICHARD, Pig Improvement Company (*Proceedings*).

W. G. HILL, Institute of Animal Genetics.

J. HODGSON, Hill Farming Research Organisation.

A. M. RAVEN, West of Scotland Agricultural College.

J. C. TAYLER, Grassland Research Institute.

A. J. F. WEBSTER, Rowett Research Institute.

M. B. WILLIS, University of Newcastle-upon-Tyne.

CONTENTS

	PAGE
MCCLELLAND, T. H., BONAITI, B. and TAYLOR, ST C. S. Breed differences in body composition of equally mature sheep	281
MORE O'FERRALL, G. J. Phenotypic and genetic parameters of productivity in Galway ewes	295
NORDIN, M. and CAMPLING, R. C. Digestibility studies with cows given whole and rolled cereal grains	305
TAGARI, H., LEVY, D., HOLZER, Z. and ILAN, D. Poultry litter for intensive beef production	317
WEBSTER, A. J. F., SMITH, J. S., CRABTREE, R. M. and MOLLISON, G. S. Prediction of the energy requirements for growth in beef cattle. 2. Hereford \times British Friesian steers given dried grass or barley	329
BROADBENT, P. J., BALL, C. and DODSWORTH, T. L. Growth and carcass characteristics of purebred and crossbred cattle with special reference to their carcass lean:bone ratios	341
HARRIES, J. M., WILLIAMS, D. R. and POMEROY, R. W. Comparative retail value of beef carcasses from different groups of animals	349
BUCK, N. G., LIGHT, D., RUTHERFORD, A., MILLER, M., RENNIE, T. W., PRATCHETT, D., CAPPER, B. S. and TRAIL, J. C. M. Environmental factors affecting beef cow reproductive performance in Botswana	357
FOWLER, V. R., BICHARD, M. and PEASE, A. Objectives in pig breeding	365
HOWARD, A. N., and SMITH, W. C. The Belgian Piétrain as a sire of crossbred pigs slaughtered at 64 kg live weight. 1. Performance and carcass characteristics	389
HOWARD, A. N., SMITH, W. C., LESSER, D. and CARPENTER, E. M. The Belgian Piétrain as a sire of crossbred pigs slaughtered at 64 kg live weight 2. Butcher and consumer reactions to meat from the crosses	395
SMITH, C. Alternative forms of genetic controls	403
SMITH, C. A note on the efficiency of different forms of comparison among foreign breeds	413
CAMPBELL, R. G. A note on the use of a feed flavour to stimulate the feed intake of weaner pigs	417
RUTTER, W., BROADBENT, P. J. and LAIRD, T. R. A note on the pattern of concentrate feeding to ewes in late pregnancy	421
HALLIDAY, R. A note on immunoglobulin concentrations in Scottish Black-face lambs born to 1- or 2-yr-old ewes	425