# EXPERIMENTAL AGRICULTURE

Editor

PROFESSOR J. P. HUDSON

Editorial Board

PROFESSOR E. W. RUSSELL (CHAIRMAN)

PROFESSOR D. K. BRITTON
DR. E. E. CHEESMAN
PROFESSOR SIR J. B. HUTCHINSON
PROFESSOR J. D. IVINS

SIR G. W. NYE
D. RHIND
DR. G. WATTS PADWICK
DR. C. C. WEBSTER



# CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, N.W. 1 American Branch: 32 East 57th Street, New York, N.Y. 10022

> Annual Subscription £5 net (U.S.A. \$16.50) Single parts 35s. net (U.S.A. \$5.00)

> > Expl Agric.

### OVERSEAS ADVISORS

DR. J. A. ANDERSON (Canada)
DR. M. A. A. ANSARI (Pakistan)
DR. M. F. CHANDRARATNE (Ceylon)
DR. K. B. LAL (F.A.O.)

DR. J. MELVILLE (Australia)
DR. A. H. MOSEMAN (United States)
PROFESSOR M. A. NOUR (Sudan)
DR. B. P. PAL (India)

DR. S. J. DU PLESSIS (South Africa)

Experimental Agriculture publishes the results of research on crops, herbage and forage, with the main emphasis on field experiments carried out in the warmer climates of the world. It also includes accounts of new experimental techniques, discussions of specific problems met in countries where agricultural production is developing rapidly, review articles on new developments in scientific agriculture, and occasional papers on technical, economic and sociological aspects of farming systems. The journal is the successor to The Empire Journal of Experimental Agriculture.

Experimental Agriculture is published quarterly. Four parts form a volume.

Subscriptions may be sent to any bookseller or subscription agent or direct to Cambridge University Press, P.O. Box 92, London, N.W. 1. Subscriptions in the U.S.A. and Canada should be sent to the American branch of the Press, 32 East 57th Street, New York, N.Y. 10022. The subscription price is £5 net (including postage) for an annual volume (\$16.50 in the U.S.A.), payable in advance; separate parts cost 35s. net or \$5.00 each (plus postage).

Second class postage paid at New York, N.Y.

Back Volumes. Inquiries for Vols. 1-32 of The Empire Journal of Experimental Agriculture should be addressed to Wm Dawson & Sons Ltd, Cannon House, Folkestone, Kent. Previously published parts of Experimental Agriculture are available from the London or New York offices of Cambridge University Press.

## NOTES FOR CONTRIBUTORS

Contributions will be welcomed from scientists of all nationalities, particularly those working in tropical and sub-tropical countries where up-to-date techniques of agricultural experimentation are helping in the rapid development of more modern methods of farm production. Contributions, which must be written in English, should be sent to the Editor, Professor J. P. Hudson, The Spinney, Wrington, Bristol.

Conditions of acceptance. Submission of a paper will be taken to imply that the material has not previously been published, and is not being considered for publication elsewhere. Papers published in Experimental Agriculture may not be reprinted or published in translation without permission from the Editor, given on behalf of the Editorial Board.

General lay-out. Before having their manuscripts typed contributors are asked to look carefully at the lay-out of other papers published in this journal, to ensure that their own papers, as submitted, conform as closely as possible to the accepted pattern. This very much facilitates the work of the Editor and may often result in a paper being published earlier than if it requires a great deal of detailed editorial attention. Numerical data, which should only be included if they are essential to the argument, can be presented either in the form of tables or diagrams, but should never be shown in both ways. It is not the normal custom of the Journal to publish notes shorter than about 2000 words (4 pages) or longer than about 6000 words (12 pages including illustrations).

Typescripts. A top copy and one carbon copy of the script should be submitted, typed with double spacing, on one side of the paper only and with margins of about 1½ inches at the left-hand side and head of each sheet. Quarto size is preferred to foolscap.

Title. The development of automatic bibliographic methods, based on single-word indexing of the significant words in the title, makes it essential that the title of each paper should contain the maximum of relevant informa-

# Gardona

# the spray-safe insecticide

Gardona is a new insecticide from Shell. And it's a spray-safe insecticide because it can be sprayed without the use of special protective clothing. What's new about Gardona is its low toxicity to man and animals.

Gardona is especially effective against caterpillars, flies and beetles. It protects apples and pears from Codling moth, citrus fruits from fruit flies, and vegetables from caterpillars and flea-beetles.

And Gardona's selective activity against these pests means most beneficial insects and organisms survive the spraying.

Although Gardona will control pests for up to fourteen days, depending on the dosage, its low-mammalian toxicity means crops may be safely harvested a very short time after treatment. In most cases the following day.

Spray-safe Gardona is also showing promising results in the control

of major pests in a variety of other crops such as cotton, rice and maize.

Gardona is another product of Shell's continuing research into the development of effective and safe insecticides. For further information or supplies of Gardona contact your Shell company or Shell Chemicals distributor.

**Shell Chemicals** 





# ANIMAL PRODUCTION

# Journal of the British Society of Animal Production Contents of Volume 12, Part 2, May 1970 include the following:

DONALD and RUSSELL. The relationship between live weight of ewe at mating and weight of newborn lamb.

DONALD, READ and RUSSELL. Influence of litter size and breed of sire on carcass weight and quality of lambs.

STRANG. Litter productivity in Large White pigs. 1. The relative importance of some sources of variation.

STRANG and KING. Litter productivity in Large White pigs. 2. Heritability and repeatability estimates.

LAWRENCE. Effects on the bacon pig of adding protein and vitamin-mineral supplements to barley without mixing and at different time intervals.

BROADBENT, MCINTOSH and Spence. The evaluation of a device for feeding group-housed animals individually.

CURRAN, WIMBLE and HOLMES. Prediction of the voluntary intake of food by dairy cows. 1. Stall-fed in late pregnancy and early lactation.

CURRAN and HOLMES. Prediction of the voluntary intake of food by dairy cows. 2. Lactating grazing cows.

LYONS, CAFFREY and O'DONNELL. The effect of energy, protein and vitamin supplementation on the performance and voluntary intake of barley straw by cattle.

KAY, MACDEARMID and MACLEOD. Intensive beef production. 10. Replacement of cereals with chopped straw.

WOOD. The relationship between the month of calving and milk production.

ROWLAND. The rumenitis and liver abscess complex and vitamin A status in beef cattle.

OSMAN, EL-SAYED, AKKADA, ABOU and AGABAWI. Influence of rumen ciliate protozoa on conversion of food and growth rate in early-weaned Zebu calves.

ANDREWS and Ørskov. A note on the effect of bulk density and digestibility on the voluntary intake of concentrate diets by sheep of two ages.

DEIF, ABOU, AKKADA and EL-SHAZLY. A note on the utilization of urea nitrogen by sheep.

TERNOUTH and BEATTIE. A note on the voluntary food consumption and the sodium-potassium ratio of sheep after shearing.

PROCEEDINGS OF THE 51ST MEETING OF THE BRITISH SOCIETY OF ANIMAL PRODUCTION, HARROGATE, 23–25 MARCH, 1970.

# OLIVER & BOYD LTD.

Tweeddale Court, 14 High Street, Edinburgh EH1 1YL, Scotland

# RHODESIAN JOURNAL OF AGRICULTURAL RESEARCH

Vol. 7 No. 2

CONTENTS

1969

Tobacco

Changes in copper fungicide deposits on tobacco leaves.

Animal Husbandry

Dietary energy requirements of Dorper Sheep.

Pedology

A study of associated hydromorphic and sodic-soils.

Forestry

Seed production potential of Pinus Kesiya and P. patula in Central Africa.

Collection of forest tree seed in Mexico.

Crops

The influence of water on yield components of wheat.

**Pastures** 

Experiments in growing Sabi Panicum

Nematology

Host trials with the burrowing nematode in Rhodesia.

Book Reviews

Applied animal nutrition

Tropical Agriculture

Grass: a story of Frankenwald

Plant science.

Published January and July of each year.

Annual Subscription 30s. Individual numbers 15s.

Back numbers available.

Specimen copies are available free of charge to libraries from

The Assistant Editor, Rhodesian Journal of Agricultural Research Private Bag 701, Causeway, SALISBURY, Rhodesia