# The Journal of Agricultural Science

1905-1980

Edited by

J.W.L. BEAMENT, F.R.S.

Drapers Professor of Agriculture, University of Cambridge

W.J. RIDGMAN

Department of Applied Biology, University of Cambridge

The Journal of Agricultural Science celebrates its 75th anniversary in 1980. Since 1905 it has kept scholars and researchers in the field informed of current research in both pure and applied sciences relating to agricultural problems.

A wide range of topics is considered in soil science, crop research and research on farm animals, including crop and animal husbandry, nutrition, physiology, genetics and breeding. Papers on broader ecological and environmental subjects are included if they are relevant to agricultural practice. The journal receives contributions from all parts of the world, thus providing information on agriculture in a wide variety of soil and climatic conditions.

#### Articles appearing in 1980 include:

- E.J. ALLEN & R.K. SCOTT An analysis of the growth of the potato crop
- S.J. BROWN The relationship between disease symptoms and parasite growth in bacterial blight of cotton
- G. EVANS & T.J. ROBINSON The control of fertility in sheep: endocrine and ovarian responses to progestagen PMSG treatment in the breeding season and in anoestrus
- E. KARAMI & J.B. WEAVER, Jr. Dry-matter production, yield and photosynthesis, chlorophyll content and specific leaf weight of cotton in relation to leaf shape and colour
- S.T.C. WEATHERUP Statistical procedures for distinctness, uniformity and stability variety trials

Volumes 94 and 95 (1980) £32.50 (\$94.25) per volume, £65.00 (\$188.00) per year

Write for a brochure to Journals Publicity at

#### **CAMBRIDGE UNIVERSITY PRESS**

P.O. Box 110, Cambridge CB2 3RL, England 32 East 57th Street, New York 10022

### TROPICAL AGRICULTURE

## THE JOURNAL OF THE FACULTY OF AGRICULTURE (IMPERIAL COLLEGE OF TROPICAL AGRICULTURE) UNIVERSITY OF THE WEST INDIES

Volume 57

Number 2

April 1980

The phosphorus requirements of yams (Dioscorea spp.)

P. Vander Zaag, R. L. Fox, P. K. Kwakye and G. O. Obigbesan

Nutrient element concentration and dry matter production by field grown pigeon pea [Cajanus cajan (L.) Millsp.]

R. C. Dalal

Effect of daylength on the growth and development of whole plants and rooted leaves of sweet potato

C. R. McDavid and S. Alamu

Note on the effects of B9 and CCC on the growth and flowering of tannia (Xanthosoma sagittifolium) plants treated or not with GA

S. Alamu and C. R. McDavid

The influence of soil fertility on crop performance in Uganda. III - Finger millet and maize

H. L. Foster

An equation for liming acid mineral soils to compensate crop aluminium tolerance T. T. Cochrane, J. G. Salinas and P. A. Sanchez

Effects of varying levels of added sulphur on nitrogen mineralization during aerobic incubation of a calcareous Gangetic alluvial soil from Bangladesh

M. S. Choudhury and A. H. Cornfield

A survey of Auchenorrhyncha (Insecta: Homoptera) associated with palms in southern Florida

F. W. Howard and F. W. Mead

Armillaria on cacao in São Tomé

J. Rishbeth

Resistance of clonal cocoa in Papua New Guinea to bark canker caused by *Phyto-phthora palmivora* (Butl.) Butl.

C. Prior and E. Sitapai

Note on the identification and distribution of Moko disease in Grenada

D. K. Cronshaw and J. E. Edmunds

Effect of groundnut meal as the sole supplementary dietary protein on the performance of broiler chickens

J. M. Olomu and S. A. Offiong

Performance of Native and Anglo-Nubian crosses and observations on improved pastures for goats in the Bahamas

L. L. Wilson, T. S. Katsigianis, A. A. Dorsett, T. E. Cathopoulis, A. G. Greaves and J. E. Baylor

Annual subscription £30 (U.K. and overseas)

Published on behalf of the Faculty by IPC Science and Technology Press Limited

P.O. Box 63, Westbury House, Bury Street, Guildford, Surrey, GU2 5BH, England

should not be more than 80 typewriter characters wide, including spaces between words, figures and columns.

Typescripts. The 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 or A4 sizes are preferred to foolscap.

Title. The development of automatic bibliographic methods, based on indexing the significant words in the title, make it essential that the title of each paper should contain the maximum of useful information. It is particularly important, for example, that the title should contain references, where relevant, to the crop, the character of the investigation, the factors under review, and the climatic or geographic area in which the work was done.

Headings. The following details should be given at the head of the first sheet: the full title of the paper; a short title for running headlines, not exceeding 48 characters, counting each letter and space as one character; the name(s) of the author(s); the address at which the work was carried out; the present address(es) of author(s), if different from the previous item; and the address(es) to which proofs should be sent (see under 'Proofs' below).

**Summary.** A short but accurate and informative summary must be included, not larger than ten lines of typescript. The preparation of the summary, which requires much care, is not an Editorial responsibility.

Experimentation. This journal specialises in the presentation of data based on up-to-date methods of field experimentation. It is therefore important, where appropriate, that papers should include: an adequate account of experimental lay-outs; a description of treatments and general management; and assessments of experimental variability (e.g. coefficient of variation) and of the statistical significance of the results, specifying the methods used for the analysis (but without showing any details of the calculations). Papers can rarely be accepted if the work was carried out in containers, and/or under glasshouse conditions, unless it forms part of an investigation on field problems. Most agronomic investigations require at least two years of experimentation because of the variable effects of weather; papers based on a single season's work are not usually acceptable. The journal does not normally publish accounts of straightforward trials of pesticides, herbicides or varieties, since such papers are usually of local interest only.

Plates. Illustrations are welcome if they contribute to an understanding of the paper, but will only be accepted if of high quality. Photographs should be provided as unmounted glossy black-and-white prints (colour prints, but not colour transparencies, are acceptable for reproduction in black-and-white; they can only be reproduced in colour if a financial subsidy is provided). If lettering is to be inserted on a print, this should be shown on a spare copy or an overlay, and an unmarked print should be provided for marking by the printer.

Figures. Diagrams, including lettering should be in Indian ink on white drawing paper. Each illustration should bear the name of the author(s) and the figure number, written clearly in the margin or on the back. On no account should diagrams be submitted on sheets larger than foolscap size, and preferably not larger than A4.

Legends. The legends for all illustrations should be given on separate sheets of paper, clearly marked with the number of each plate or diagram. The ideal position for each diagram should be marked in the text, although it may not be possible to put the illustration exactly in that place.

Dating the work. Dates should be given for the beginning event of each experiment. The journal is reluctant to accept papers submitted more than three years after the end of the relevant experimental work.

Tables. Each table should be typed on a separate sheet of paper, and its preferred position indicated on the typescript. Each table should be numbered and bear an appropriate legend, along the lines normally used for tables in this publication. Contributors are specially asked to avoid presenting tables that are too large to print across the page, hence the limit of 80 typewriter characters referred to earlier. (N.B. It is rarely necessary to cite results to more than three significant figures in tables.)

Use of metric units. All data must be presented in metric units. Comparable data in local units (e.g. acres, ounces, etc.) may be given in parentheses at the first mention, or factors for converting metric into local units may be given as footnotes. The use of SI units will probably become mandatory at some time in the future.

References. The Harvard system of citation is used throughout. In the list of references all authors' names should be given. Not more that fifteen papers should normally be cited. It is preferable not to cite publications that are not readily accessible, such as theses.

Referees. All manuscripts are critically reviewed by expert referees, on whose advice the Editor accepts or rejects contributions, or returns them to authors for reconsideration.

**Proofs.** Two sets of single-sided page proofs will be sent to each author, but it is the responsibility of the senior author to collate the views of his co-author(s) and submit a consolidated set of corrections to the Editor, by returning to him the printer's marked proof (identified by the words 'marked copy') with all required corrections. No further corrected proof will be sent to the author(s), unless this is specially requested. Excessive alterations, other than corrections of printer's errors, may be disallowed or charged to the author.

Offprints. Fifty offprints will be sent free of charge to the author(s). Where there are two or more authors, all fifty offprints will be sent to the senior author, unless the printer is asked to divide them. Additional offprints may be ordered on the form sent out with the proofs (to the senior author only if there is more than one) provided this is returned to the printer within seven days of its receipt by the author.

Return of manuscript. Where a submission is not accepted for publication the top copy will be returned; manuscripts on thin (air-mail) paper will usually be sent by air but bulky manuscripts from overseas may be returned by surface mail.

https://doi.org/10.1017/S0014479700010966 Published online by Cambridge University Press

# EXPERIMENTAL AGRICULTURE VOLUME 16, NUMBER 3, JULY 1980

#### CONTENTS

R. Mead and R. W. Willey: The Concept of a 'Land Equivalent Ratio' and Advantages in Yields from Intercropping	217
R. J. Summerfield and F. R. Minchin: Reciprocal Grafts between	/
Large Plants: Technique and Evaluation with Cowpeas	229
F. R. Minchin, R. J. Summerfield, P. Hadley and E. H. Roberts: Growth, Longevity and Nodulation of Roots in Relation to Seed Yield in Chickpeas (Cicer arietinum)	241
W. Y. Chew, C. N. Williams, L. Ismail and K. Ramli: Effects of Liming and Soil pH on Guinea Grass (Panicum maximum) in Malaysian Tropical Oligotrophic Peat	263
S. M. Funnah and C. Mak: Genotype × Environment Interactions on Grain Yield and other Characters of Soyabeans (Glycine max)	269
E. O. Lucas: Relations Between Growth Parameters in Oil Palm Seedlings Grown in Polybags	275
Olusola Omueti: Effects of Age on Celosia Cultivars	279
C. O. Othieno and P. M. Ahn: Effects of Mulches on Soil Temperature and Growth of Tea Plants in Kenya	287
C. O. Othieno: Effects of Mulches on Soil Water Content and Water Status of Tea Plants in Kenya	295
K. O. Awonaike, P. J. Lea, J. M. Day, R. J. Roughley and B. J. Miflin: Effects of Combined Nitrogen on Nodulation and Growth	
of Phaseolus vulgaris	303
C. N. Williams: Effects of Lime, Drainage, Manganese Dioxide and Seedling Condition on Rice in Acid Sulphur Soil in Brunei	313
G. O. Iremiren and G. M. Milbourn: Effects of Plant Density on Ear Barrenness in Maize	321
Book Reviews	327

© Cambridge University Press 1980 Printed in Great Britain by Adlard & Son Ltd. Bartholomew Press, Dorking