## **DELTA-T WEATHER STATION**

A complete system of instrumentation for automatically measuring and recording the weather at remote sites.



Standard sensors measure:

- air temperature
- rainfall
- relative humidity
- soil temperature
- solar radiation
- wind direction
- wind speed
- \* Memory expandable from 16k to 128k readings
- \* User-defined recording
- Typically 12 months battery life
- On-site checks using LCD on control panel
- \* Remote interrogation via RS232 link

Description All sensors are mounted on a 2m mast, except for the soil temperature probe and the raingauge. An environmental data logger (the Delta Logger) initiates readings, controls the sensors and stores data.

**Data collection** Stored readings can be collected with a portable computer or printer without interrupting logging.

Programmable The user has independent control over each

sensor to define: sampling interval, valid reading range, engineering units (eg mm of rainfall), and data compression. These are specified using a personal computer.

Special requirements We are able to supply part-systems and nonstandard combinations of sensors, (the Logger is expandable and can accept up to 60 analogue/counter inputs). Further information, advice or a quotation will be provided on request.

#### DELTA-T DEVICES LTD.

128 Low Road, Burwell, Cambridge CB5 0EJ Telephone: 0638 742922 Fax: 0638 743155 Telex: 817670 ASABSE G "ATTN DELTA-T" We also supply: Solar and Thermal Radiation Sensors, Psychrometers, Integrators, Area Measurement Systems and Porometers

#### Continued from inside front cover

**Preparation and submission of manuscripts.** Detailed instructions on the preparation of manuscripts are printed at the back of the first number of each volume of this journal.

Potential contributors are asked to give careful attention to these instructions. This will greatly assist the editors and thus speed the processing of their contributions.

**Copying:** This journal is registered with the Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per copy fee of \$5.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0014-4797/90 \$5.00 + .00.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorized to supply single copies of separate articles for private use only.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

#### VOLUME 26 NUMBER 1 JANUARY 1990

# **Experimental Agriculture**

### CONTENTS

A. N. Atta-Krah: Alley Farming with Leucaena: Effect of Short Grazed	
Number 22)	1
C. D. J. Kessler: An Agronomic Evaluation of Jackbean (Canavalia ensiformis) in Yucatan, Mexico. I. Plant Density	11
C. D. J. Kessler: An Agronomic Evaluation of Jackbean (Canavalia ensiformis) in Yucatan, Mexico. II. Defoliation and Time of Sowing	23
C. D. J. Kessler: An Agronomic Evaluation of Jackbean (Canavalia ensiformis) in Yucatan, Mexico. III. Germplasm	31
Bonny R. Ntare: Intercropping Morphologically Different Cowpeas with Pearl Millet in a Short Season Environment in the Sahel	41
E. F. Thomson, S. Rihawi and N. Nersoyan: Nutritive Value and Yields of Some Forage Legumes and Barley Harvested as Immature Herbage, Hay and Straw in North-West Syria	49
P. M. Hatfield, G. C. Wright and W. R. Tapsall: A Large, Retractable, Low Cost and Re-locatable Rain Out Shelter Design	57
<b>R. C. Nageswara Rao, K. D. R. Wadia and J. H. Williams:</b> Inter- cropping Short and Long Duration Groundnut ( <i>Arachis hypogaea</i> ) Genotypes to Increase Productivity in Environments Prone to End-of- season Droughts	63
D. J. Finney: Intercropping Experiments, Statistical Analysis, and Agri- cultural Practice	73
William Stephens and M. K. V. Carr: Seasonal and Clonal Differences in Shoot Extension Rates and Numbers in Tea (Camellia sinensis)	83
C. J. Breure and T. Menendez: The Determination of Bunch Yield Components in the Development of Inflorescences in Oil Palm ( <i>Elaeis</i> guineensis)	99
C. J. Breure, T. Menendez and M. S. Powell: The Effect of Planting Density on the Yield Components of Oil Palm ( <i>Elaeis guineensis</i> )	117
R. S. Malik: Prospects for Brassica carinata as an Oilseed Crop in India	125
Book Reviews	131
Notes for Contributors	139

### CAMBRIDGE UNIVERSITY PRESS

The Pitt Building, Trumpington Street, Cambridge CB2 1RP 40 West 20th Street, New York, NY 10011, USA 10 Stamford Road, Oakleigh, Melbourne 3166, Australia

Printed in Great Britain at the University Press, Cambridge