SHORT NOTES	
SHARMA, P. K., GARG, F. C. and LAKSHMINARAYANA, K. Induction of stem nodules in pigeonpea (Cajanus cajan L. Millsp.)	375
OYELEKE, M. O., BALOGUN, O. O., FETUGA, B. L. and BABATUNDE, G. M. Influence of dietary protein levels on rate of tissue deposition and individual muscle development of growing European pigs in a tropical environment	377
NEWBOLD, C. J., THOMAS, P. C. and CHAMBERLAIN, D. G. Effect of dietary supplements of sodium bicarbonate on the utilization of nitrogen in the rumen of sheep receiving	
a silage-based diet METOCHIS, CHR. and ORPHANOS, P. I. Irrigation and nitrogen requirements of sugar	383
beet in a Mediterranean environment	387
RAO, G. P. and SHUKLA, K. Influence of Sesbania mosaic virus infection on nodulation and nitrogen fixation in pea (Pisum sativum L.)	391
VALENTINE, S. C. and BARTSCH, B. D. Degradation of dry matter, crude protein, fat, crude fibre and nitrogen-free extract in milled barley and lupin grains incubated by	
nylon bags in the rumen of dairy cows	395
GUPTA, G. and SABARATNAM, S. Reduction in soya-bean yield after a brief exposure to nitrogen dioxide	399
DE LA HABA, M., MORENO, A., LLANES, D. and TUCKER, E. M. Glutathione concentrations in the red cells of Merino sheep	401
NWADUKWE, P. O., ABDULMUMIN, S. and ARORA, Y. Portable apparatus for separating roots from soil cores	405
SINGH, HARJIT, KUMAR, J., SMITHSON, J. B. and HAWARE, M. P. Associations among Fusarium wilt resistance, flower colour and number of flowers per fruiting node in	
chickpeas (Cicer arietinum L.)	407
SCOTT, D. and BUCHAN, W. Effect of reduction in phosphorus intake on salivary phosphorus secretion and on duodenal digesta and dry-matter flow in sheep	411
RAM, MUNI, CHATTERJEE, B. N., YADAV, R. L. and SINGH, D. V. Minimizing volatilization and leaching losses of nitrogen by different nitrogen carriers in Japanese mint (Mentha arvensis L.)	415
JAIN, R. P. and PATEL, K. R. Germination of pearl millet (Pennisetum americanum (L.)	
Leek) under varying levels of osmotic potential of PEG 6000 SINGH, B. and MAKKAR, H. P. S. Observations on the changes in <i>in sacco</i> digestibility of	419
urea ammoniated wheat straw during treatment	423
BOOK REVIEWS	427

Copying. No contents may be reproduced by any means without the permission of Cambridge University Press. This journal is registered with the Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970. Organizations in the USA who are also registered with the 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 0021–8596/88 \$5.00+0.00.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, Pennsylvania 19106, USA, is authorized to supply single copies of separate articles for private used only.

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

## CAMBRIDGE UNIVERSITY PRESS

The Pitt Building, Trumpington Street, Cambridge CB2 1RP 32 East 57th Street, New York, NY 10022, USA 10 Stamford Road, Oakleigh, Melbourne 3166, Australia

Printed in Great Britain by the University Press, Cambridge

ISSN: 0021-8596

## The Journal of Agricultural Science

## VOLUME IIO PART 2 APRIL 1988

## CONTENTS

		PAGE
	BARRACLOUGH, P. B. AND WEIR, A. H. Effects of a compacted subsoil layer on root and	
	shoot growth, water use and nutrient uptake of winter wheat	207
	BARLOW, R., ELLIS, K. J., WILLIAMSON, P. J., COSTIGAN, P., STEPHENSON, P. D., ROSE,	-
	G. and MEARS, P. T. Dry-matter intake of Hereford and first-cross cows measured by	
	controlled release of chromic oxide on three pasture systems	217
	HETZEL, D. J. S., BENNETT, I. L., HOLMES, C. R., ENCARNACAO. R. O. and MACKINNON,	
	м. J. Description and evaluation of a telemetry system for measuring body temperature	
	in cattle	233
	SEARLE, T. W., GRAHAM, N. MCC., GRIFFITHS, D. A. and MARGAN, D. E. Longitudinal	
	studies of body composition during growth in male, female and castrate male sheep	
	of two breeds with different wool growing capabilities	239
	BINES, J. A., BROSTER, W. H., SUTTON, J. D., BROSTER, VALERIE J., NAPPER, D. J.,	
	SMITH, T. and SIVITER, J. W. Effect of amount consumed and diet composition on the	
	apparent digestibility of feed in cattle and sheep	249
	SUTTON, J. D., BROSTER, W. H., SCHULLER, E., NAPPER, D. J., BROSTER, VALERIE J.	
	and BINES, J. A. Influence of plane of nutrition and diet composition on rumen	
	fermentation and energy utilization by dairy cows	261
	SARIG, S., BLUM, A. and OKON, Y. Improvement of the water status and yield of field-	
	grown grain sorghum (Sorghum bicolor) by inoculation with Azospirillum brasilense	271
	WHITEHEAD, A. G. and TITE, D. J. Effects of seed row and foliar applied pesticides on	
	the yield of lucerne in clay soil, in the presence or absence of lucerne stem nematode,	
	Ditylenchus dipsaci	279
	CHANEY, K. and PAULSON, G. A. Field experiments comparing ammonium nitrate and	
	urea top-dressing for winter cereals and grassland in the U.K.	285
	MILFORD, G. F. J., TRAVIS, K. Z., POCOCK, T. O., JAGGARD, K. W. and DAY, W. Growth	201
	and dry-matter partitioning in sugar beet	301
	PANDA, M. M., GHOSH, B. C., REDDY, M. D. and REDDY, B. B. Effect of form, method and	
	time of urea nitrogen application on growth, yield and nitrogen uptake of direct sown	200
	and transplanted rice under intermediate deepwater (15–50 cm) conditions	309
i	SEIN, T. and TODD, J. R. Investigations into the use of indicator methods of estimating	215
	the digestibilities of feeds by ruminant animals	315
	RAI, R. High-temperature-adapted Azospirillum brasilense strains: growth and interaction response on associative nitrogen fixation, mineral uptake and yield of cheena	
		321
	(Panicum miliaceum L.) genotypes in calcareous soil SHARMA, R. C. and SHARMA, H. C. Varietal responses and quantitative contribution of	321
	nutrients to potato production	331
	SINGH, A. L., SINGH, P. K. and SINGH, P. L.Comparative studies on the use of green	331
	manuring, organic manuring and Azolla and blue-green algal biofertilizers to rice	337
	MCEWEN, J., YEOMAN, D. P. and MOFFITT, R. Effects of seed rates, sowing dates and	331
	methods of sowing on autumn-sown field beans (Vicia faba L.)	345
	WILMAN, D. and DROUSHIOTIS, D. N. Effects of harvesting programme and sowing date	545
	on leaf growth in forage barley in Cyprus	353
	DURRANT, M. J. and JAGGARD, K. W. Sugar-beet seed advancement to increase	223
	establishment and decrease bolting	367

Continued inside back cover