# IIIrd International Lupine Conference 4-8 June 1984 - La Rochelle (France)

Organized by

ILA (International Lupine Association)

INRA (Institut National de la Recherche Agronomique)

UNIP (Union Nationale Interprofessionnelle des Protéagineux)

ITCF (Institut Technique des Céréales et des Fourrageux)

With the actual participation of F.A.O and the Ministry of Agriculture

Official languages

French/English/Spanish (simultaneous translation provided)

Scientific organization

Main papers will be grouped in six sessions:

Genetic Resources

**Breeding** 

Plant Physiology and Biochemistry

Plant Production

Nutrition and Food Technology

Economics and International Topics

Other contributions are welcomed in the form of posters

Registration fee

FF 1500 (approximately US \$200)

For further information, please write to:

Congrès Services - Congrès du Lupin, 1, rue Jules Lefebvre F-75009

Paris, France

	PAGE
FINCH, VIRGINIA, A., BENNETT, I. L. and HOLMES, C. R. Coat colour in cattle: effect on thermal balance, behaviour and growth, and relationship with coat type	141
LOUDON, A. S. I., DARROCH, A. D. and MILNE, J. A. The lactation performance of red deer on hill and improved species pastures	149
GERRITSE, R. G. and VRIESEMA, R. Phosphate distribution in animal waste slurries	159
GORDON, F. J. The effect of level of concentrate supplementation given with grass silage during the winter on the total lactation performance of autumn-calving dairy cows	163
Brown, N. J. and North, P. F. Tillage under controlled conditions: its effect on emergence and yield of spring barley	181
FRISCH, J. E., O'NEILL, C. J. and Burrow, H. M. The incidence and effect of poisoning with Lantana camara in different cattle breeds	191
WALKEY, D. G. A. and PINK, D. A. C. Resistance in vegetable marrow and other <i>Cucurbita</i> spp. to two British strains of cucumber mosaic virus.	197
Hunter, E. A., Glasbey, C. A. and Naylor, R. E. L. The analysis of data from germination tests	207
SHARMA, K. N., SINGH, BIJAY, RANA, D. S., KAPUR, M. L. and SODHI, J. S. Changes in soil fertility status as influenced by continuous cropping and fertilizer application	215
Adams, S. N. Some effects of lime, nitrogen and soluble and insoluble phosphate on the yield and mineral composition of established grassland	219
ILORI, J. O. The effect of different proportions of protein and antibiotic in the diet on reproductive performance of indigenous pigs in Nigeria	227
SHORT NOTES	
MAXWELL, W. M. C., BUTLER, L. G. and WILSON, H. R. Intra-uterine insemination of ewes with frozen semen	233
CHAUHAN, R. P. S., CHAUHAN, C. P. S. and CHAUHAN, S. K. Effect of boronated saline irrigation water on linseed	237
Ologhobo, A. D. and Fetuga, B. L. Haemagglutinin extracts from raw, sprouting and differently processed limabeans	241
PRASAD, J. and RAM, H. Varietal response to rhizobial strains for nodule character, chlorophyll and protein content in green gram (Vigna radiata)	245
HAILE, A. A study of the effects of oak defoliation on understory plants	247
HAILE, A. Effect of stage of maturity of forage oats on crude protein content and dry-matter yield	251
SINGH, B. and BADHORIA, B. S. Response of green gram to potassium and zinc application.	253

### THE JOURNAL OF AGRICULTURAL SCIENCE

### CONTENTS

## Vol. 102 Part 1 February 1984

	PAGE
Rundle, H. L., Calcroft, Marian and Holt, C. An assessment of accumulation of Cd, Cr, Cu, Ni and Zn in the tissues of British Friesian steers fed on the products of land which has received heavy applications of sewage sludge	1
PAL, U. R., MURARI, K. and MALIK, H. S. Yield response of sorghum cultivars to inorganic nitrogen fertilizer	7
OLLERENSHAW, J. H. and HAYCOCK, R. Variation in the low temperature growth and frost tolerance of natural genotypes of <i>Trifolium repens</i> L. from Britain and Norway	11
CHAPMAN, J. F., DANIELS, R. W. and SCARISBRICK, D. H. Field studies on <sup>14</sup> C assimilate fixation and movement in oil-seed rape ( <i>B. napus</i> )	23
JOHN, A. and ULYATT, M. J. Measurement of protozoa, using phosphatidyl choline, and bacteria, using nucleic acids, in the duodenal digesta of sheep fed chaffed lucerne hay (Medicago sativa L.) diets	33
JOHN, A. Effects of feeding frequency and level of feed intake on chemical composition of rumen bacteria	45
Patterson, H. D. and Weatherup, S. T. C. Statistical criteria for distinctness between varieties of herbage crops	59
Benjamin, L. R. The relative importance of some sources of root-weight variation in a carrot crop	69
CHAUDHARY, M. R. and AGGARWAL, G. C. A simple technique to evaluate the effect of mechanical stress on root growth	79
Mahey, R. K. and Cheema, S. S. Evaluating methods of nitrogen application for efficiency of water use and yield of rainfed barley	81
ELLIS, R. P. and RUSSELL, G. Plant development and grain yield in spring and winter barley.	85
WOOLFORD, M. K. and WILKIE, ANN C. Investigations into the role of specific micro-organisms in the aerobic deterioration of maize silage	97
BUTLER-HOGG, B. W. Growth patterns in sheep: wool growth during weight loss and subsequent compensatory growth	105
EL ATTAL, Z. M., MOUSTAFA, OMAYMA K. and DIAB, SAMIHA A. Influence of foliar fertilizers on the toxicity and tolerance to some insecticides in the cotton leafworm	111
MOUSTAFA, OMAYMA K., EL ATTAL, Z. M. and DOBAN, AMAL F. The role of foliar fertilizers in tolerance of the cotton leafworm to certain insecticides	115
ROBINSON, DOROTHY L. A study of sequential variety selection systems	119
CLUTTERBUCK, B. J. and HODGSON, D. R. Direct drilling and shallow cultivation compared with ploughing for spring barley on a clay loam in northern England	. 127
Braithwaite, G. D. Changes in phosphorus metabolism of sheep in response to the increased demands for P associated with an intravenous infusion of calcium	135

Continued on inside back cover

#### © Cambridge University Press 1984

SUBSCRIPTIONS. Two volumes of three parts are published annually. All orders must be accompanied by payment. The subscription price of volumes 102 and 103, 1984, is £51.00 net (U.S.A. and Canada US \$130.00) per volume (post free); single parts are available at £19.50 net (U.S.A. and Canada US \$51.00) plus postage. Orders or enquiries may be sent to any bookseller or subscription agent, or Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU (U.S.A. and Canada, Cambridge University Press, 32 East 57th Street, New York, N.Y. 10022, U.S.A.). Second class postage paid at New York, N.Y., and at additional mailing offices.