

THE JOURNAL OF AGRICULTURAL SCIENCE

EDITED FOR THE PLANT BREEDING AND ANIMAL NUTRITION RESEARCH INSTITUTES AT CAMBRIDGE,
AND THE ROTHAMSTED RESEARCH INSTITUTES BY

PROFESSOR SIR R. H. BIFFEN, M.A., F.R.S., Cambridge

SIR A. D. HALL, K.C.B., M.A., LL.D., F.R.S., John Innes Horticultural
Institution, Merton Park, Surrey

B. A. KEEN, D.Sc., F.Inst.P., Rothamsted Experimental Station, Harpenden

F. H. A. MARSHALL, Sc.D., F.R.S., Cambridge

SIR E. J. RUSSELL, D.Sc., F.R.S., Rothamsted Experimental Station, Harpenden

PROFESSOR T. B. WOOD, C.B.E., M.A., LL.D., F.I.C., F.R.S., Cambridge

IN CONSULTATION WITH

B. C. ASTON, Department of Agriculture, Wellington, New Zealand

DR C. A. BARBER, C.I.E., School of Agriculture, Cambridge

PROFESSOR B. T. P. BARKER, M.A., Agricultural and Horticultural Research Station, Long
Ashton, Bristol

I. B. POLE EVANS, Department of Agriculture, Pretoria, South Africa

PROFESSOR J. HENDRICK, B.Sc., Marischal College, Aberdeen

SIR T. H. MIDDLETON, K.B.E., C.B., M.A., The Development Commission, London

DR FRANK T. SHUTT, F.I.C., Experimental Farms, Ottawa, Canada

SIR WILLIAM SOMERVILLE, M.A., D.Sc., Oxford

SIR FRANCIS WATTS, K.C.M.G., St Augustine, Trinidad, British West Indies

DR H. J. WHEELER, American Agricultural Chemical Co., Agricultural Service Bureau, 419
Fourth Avenue, New York, U.S.A.

VOLUME XIX 1929

CAMBRIDGE
AT THE UNIVERSITY PRESS

1929

PRINTED IN GREAT BRITAIN

Contents

vii

	PAGE
MATTICK, ELFREIDA C. V. and HALLETT, HOWARD S. The effect of heat on milk. (A) On the coagulability by rennet. (B) On the nitrogen, phosphorus and calcium content. (With two text-figures)	452
PYNE, G. T. The action of viscogen (calcium saccharate) on milk and cream	463
DOUGHTY, L. R., ENGLEDDOW, F. L. and SANSOM, T. K. Investigations on yield in cereals. VI. A. A developmental study of the influence of nitrogenous top-dressing on wheat. B. A measurement of the influence of disease ("take-all") upon the yield of wheat. (With two text-figures)	472
CRANFIELD, H. T. and LING, E. R. Variation in the composition of the milk of an abnormal cow. (With two text-figures)	491
GARDNER, H. W., SMITH, J. HUNTER, REID, J. W. and WILLIAMS, H. R. Some observations on the nitrogenous manuring of grassland. (With one text-figure)	500
STEWART, ROBERT. The availability of the potassium in some Scottish soils	524
BEST, RUPERT JETHRO. A rapid electrometric method for determining the chloride content of soils. (With two text-figures)	533
MILNE, G. The cobaltinitrite (volumetric) method of estimating potassium in soil-extracts	541
MATSON, Lt-Col. J. The effect on lactation of the length of the preceding calving interval and its relation to milking capacity, to age and to other factors of influence	553
THORNTON, H. G. The effect of fresh straw on the growth of certain legumes. (With two text-figures)	563
EASTERFIELD, T. H., RIGG, T., ASKEW, H. O. and BRUCE, J. A. A widespread occurrence of xanthin calculi in sheep. (With Plates II and III)	573
HALL, A. D. Note on the effect of sodium silicate in increasing the yield of barley	586

PART 4 (OCTOBER 1929)

WILLIAMS, RICE. The determination of exchangeable bases in soils. Magnesium, potassium and total bases	589
WISHART, J. and CLAPHAM, A. R. A study in sampling technique: the effect of artificial fertilisers on the yield of potatoes. (With one text-figure)	600

	PAGE
DAVIES, W. MORLEY and DUDLEY, F. J. Experiments in the cultivation of the sugar beet crop in the West Midlands during 1928. A statistical examination of the effect of spacing . . .	619
SUBRAHMANYAN, V. Biochemistry of waterlogged soils. Part III. Decomposition of carbohydrates with special reference to formation of organic acids. (With eight text-figures) . . .	627
SUBRAHMANYAN, V. Determination of soluble carbohydrates, lactic acid and volatile fatty acids in soils and biological media. (With one text-figure)	649
WOODMAN, H. E., DUCKHAM, A. N. and FRENCH, M. H. The value of dried sugar-beet pulp and molasses-sugar beet pulp in the nutrition of swine	656
WOODMAN, H. E., DUCKHAM, A. N. and FRENCH, M. H. The value of whole sugar beet in the nutrition of swine	669
MORISON, C. G. T. The composite character of the soil profile, its relation to soil classification	677
KEEN, B. A. and SCOTT BLAIR, G. W. Plastometric studies of soil and clay pastes. (With six text-figures)	684
CODLING, A. J. and WOODMAN, H. E. Sugar-beet pulp as a source of pectin	701
PETO, R. H. K. and GREENE, H. Water loss at Wad Medani. Part I. (With three text-figures)	715
HARDY, F. A note on the determination of soil organic matter. A wet combustion method	727
HARDY, F. Some aspects and methods of soil survey work	734
EVANS, R. E. Protein and mineral metabolism in pregnant sows on a normal or high calcium diet compared with a calcium-deficient diet. (With one text-figure)	752
EVANS, R. E. The influence of the addition of calcium carbonate to a ration low in lime on the appetite and digestibility of the food in swine	799
HART, R. Studies in the geology and mineralogy of soils. II. Soils of south-east Scotland	802