Biotechnology and its Application to Agriculture

Monograph No. 32

Proceedings of a Symposium, organised by the Society of Chemical Industry in collaboration with The British Crop Protection Council, held at Churchill College, Cambridge 4th-6th September, 1985

Edited by LEONARD G. COPPING and PETER RODGERS

BCPC Publications 2A Kidderminster Road Croydon CR0 2UE



Contents

		Page
	KNOWLEDGEMENTS BREVIATIONS	vii viii
1.	THE STATE OF THE ART	1
	The general implications of biotechnology in the Agricultural Industry D. G. ARMSTRONG	3
	A European view of biotechnology K. SARGEANT	13
	Potential of genetics in agriculture C. SHAW	21
	Future trends in plant breeding P. R. DAY	25
2.	POTENTIAL USES FOR AGRICULTURAL CROPS Sucrose as a fermentation feedstock B. H. KIRSOP — Paper not received	33
	Straw as a fermentation raw material J. M. LYNCH	35
	Starch crops and their uses T. J. PALMER — Paper not received	
3.	ADVANCES IN APPLICATIONS TO CROP AND ANIMAL BREEDING	43
	Herbicide resistant maize through cell culture selection D. SHANER, E. MALEFYT, PAUL ANDERSON	45
	Recent advances in commercial micropropagation K. L. GILES	51
	Advances in protein engineering T. M. KAETHNER and G. M. TONGE	59
	Improving the amino acid content of cereal grains B. J. MIFLIN, M. KREIS, S. W. J. BRIGHT and P. R. SHEWRY	71
	Potential benefits of improved breeding programmes D. E. STEANE	79
	Embryo transfer C. POLGE	89
4.	IMPROVING CROP AND ANIMAL GROWTH	97
	Bovine somatotropin G. GAGLIARDI	99
	Fermentation products as animal feed additives D. W. DUNWELL	111
	Molecular genetics of symbiotic nitrogen fixation A. W. B. JOHNSTON, L. ROSSEN, C. M. SHEARMAN, I. EVANS and J. A. DOWNIE	119
	Azospirillum: a potential biofertiliser for grasses C. ELMERICH C. FOGHER B. PERROUD and H. BOZOUKLIAN	121

5 .	MICROBIAL PRODUCTS IN CROP AND ANIMAL PRODUCTION	127
	Possibilities for using genetic manipulation to produce new bioactive molecules from Streptomycetes D. A. HOPWOOD	129
	Chemistry and biological activity of avermectin derivatives H. MROZIK	133
	Microbial insecticides S. G. LISANSKY	145
	The potential of viruses as pesticides P. F. ENTWISTLE	153
	Vaccines and their applications to the Agricultural Industry	157