

CONTENTS

1 ETHYLENE AND PLANT DEVELOPMENT: AN INTRODUCTION	1
Fred B Abeles, <i>US Department of Agriculture, Agricultural Research Service, Appalachian Fruit Research Station, Kearneysville, West Virginia, USA</i>	
2 METABOLISM OF 1-AMINOCYCLOPROPANE-1-CARBOXYLIC ACID	9
S F Yang, Y Liu, L Su, G D Peiser, N E Hoffman and T McKeon, <i>Department of Vegetable Crops, University of California, Davis, California, USA</i>	
3 STUDIES ON THE ENZYMES OF ETHYLENE BIOSYNTHESIS	23
H Kende, M A Acaster and M Guy, <i>MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, Michigan, USA</i>	
4 THE OXYGEN AFFINITY OF 1-AMINOCYCLOPROPANE-1-CARBOXYLIC ACID OXIDATION IN SLICES OF BANANA FRUIT TISSUE	29
N H Banks, <i>Cambridge University</i>	
5 CARBON DIOXIDE FLUX AND ETHYLENE PRODUCTION IN LEAVES	37
Roger F Horton, <i>Department of Botany, University of Guelph, Ontario, Canada</i>	
6 THE EFFECT OF TEMPERATURE ON ETHYLENE PRODUCTION BY PLANT TISSUES	47
Roger J Field, <i>Plant Science Department, Lincoln College, Canterbury, New Zealand</i>	
7 THE RELATIONSHIP BETWEEN POLLINATION, ETHYLENE PRODUCTION AND FLOWER SENESCENCE	71
A D Stead, <i>Department of Botany, Royal Holloway & Bedford Colleges, Egham, Surrey, UK</i>	

8 THE ETHYLENE FORMING ENZYME SYSTEM IN CARNATION FLOWERS	83
<i>K Manning, Glasshouse Crops Research Institute, Littlehampton, West Sussex, UK</i>	
9 ETHYLENE BIOSYNTHESIS IN <i>PENICILLIUM DIGITATUM</i> INFECTED CITRUS FRUIT	93
<i>Oded Achilea, Edo Chalutz, Yoram Fuchs and Ilana Rot, Department of Fruit and Vegetable Storage, Agricultural Research Organization, The Volcani Center, Bet Dagan 50250, Israel</i>	
10 ETHYLENE BINDING	101
<i>A R Smith and M A Hall, Department of Botany and Microbiology, University College of Wales, Aberystwyth, Dyfed, UK</i>	
11 ETHYLENE BINDING IN <i>PHASEOLUS VULGARIS</i> L COTYLEDONS	117
<i>C J Howarth, A R Smith and M A Hall, Department of Botany and Microbiology, University College of Wales, Aberystwyth, Dyfed, UK</i>	
12 ETHYLENE METABOLISM	125
<i>E M Beyer Jr, E I du Pont de Nemours & Co Inc, Agricultural Chemicals Department, Building 402, Experimental Station, Wilmington, Delaware, USA</i>	
13 ETHYLENE METABOLISM IN <i>PISUM SATIVUM</i> L AND <i>VICIA FABA</i> L	139
<i>A R Smith, D E Evans, P G Smith and M A Hall, Department of Botany and Microbiology, University College of Wales, Aberystwyth, Dyfed, UK</i>	
14 REGULATION OF THE EXPRESSION OF TOMATO FRUIT RIPENING GENES: THE INVOLVEMENT OF ETHYLENE	147
<i>D Grierson, A Slater, M Maunders, P Crookes, Department of Physiology and Environmental Science, University of Nottingham Faculty of Agricultural Science, G A Tucker, Department of Applied Biochemistry and Food Science, University of Nottingham Faculty of Agricultural Science, W Schuch and K Edwards, ICI Corporate Bioscience and Colloid Laboratory, Runcorn, Cheshire</i>	
15 INDUCTION OF CELLULASE BY ETHYLENE IN AVOCADO FRUIT	163
<i>Mark L Tucker, Department of Molecular Plant Biology, University of California, Berkeley, CA 94720, USA, Rolf E Christoffersen, Mann Laboratory, University of California, Davis, CA 95616, USA and Lisa Woll and George G Laties, Department of Biology and Molecular Biology Institute, University of California, Los Angeles, USA</i>	
16 ETHYLENE AND ABSCISSION	173
<i>R Sexton, Department of Biological Science, Stirling University, Stirling, UK, L N Lewis, Molecular Plant Biology, University of California, Berkeley, California, USA and A J Trewavas and P Kelly, Department of Botany, Edinburgh University, Edinburgh, UK</i>	

17 TARGET CELLS FOR ETHYLENE ACTION	197
Daphne J Osborne, <i>Developmental Botany, Weed Research Organization, Oxford</i> , Michael T McManus, <i>Department of Biochemistry, University of Oxford</i> and Jill Webb, <i>Electron Microscopy, Weed Research Organization, Oxford</i>	
18 ETHYLENE, LATERAL BUD GROWTH AND INDOLE-3-ACETIC ACID TRANSPORT	213
J R Hillman, <i>Botany Department, The University, Glasgow, UK</i> , H Y Yeang, <i>Rubber Research Institute of Malaysia, Kuala Lumpur, Malaysia</i> and V J Fairhurst, <i>Botany Department, The University, Glasgow, UK</i>	
19 ETHYLENE AND PETIOLE DEVELOPMENT IN AMPHIBIOUS PLANTS	229
Irene Ridge, <i>Biology Department, Open University, Walton Hill, Milton Keynes, UK</i>	
20 ETHYLENE AND THE RESPONSES OF PLANTS TO EXCESS WATER IN THEIR ENVIRONMENT—A REVIEW	241
Michael B Jackson, <i>Agricultural and Food Research Council, Letcombe Laboratory, Letcombe Regis, Wantage, Oxfordshire, UK</i>	
21 ETHYLENE AND FOLIAR SENESCENCE	267
Jeremy A Roberts, <i>Physiology and Environmental Science</i> , Gregory A Tucker, <i>Applied Biochemistry and Food Science</i> and Martin J Maunders, <i>Physiology and Environmental Science, University of Nottingham Faculty of Agricultural Science</i>	
22 ETHYLENE AS AN AIR POLLUTANT	277
David M Reid and Kevin Watson, <i>Plant Physiology Research Group, Biology Department, University of Calgary, Alberta, Canada</i>	
23 SOURCES OF ETHYLENE OF HORTICULTURAL SIGNIFICANCE	287
Fred B Abeles, <i>US Department of Agriculture, Agricultural Research Service, Appalachian Fruit Research Station, Kearneysville, West Virginia, USA</i>	
24 EVALUATING THE PRACTICAL SIGNIFICANCE OF ETHYLENE IN FRUIT STORAGE	297
Michael Knee, <i>East Malling Research Station, East Malling, Maidstone, Kent, UK</i>	
25 ETHYLENE IN COMMERCIAL POST-HARVEST HANDLING OF TROPICAL FRUIT	317
F J Proctor and J C Caygill, <i>Tropical Development and Research Institute, Gray's Inn Road, London, UK</i>	
26 RESPIRATION AND ETHYLENE PRODUCTION IN POST-HARVEST SOURSOP FRUIT (ANNONA MURICATA L)	333
J Bruinsma, <i>Department of Plant Physiology, Agricultural University,</i>	

	<i>Wageningen, The Netherlands and R E Paull, Department of Botany, University of Hawaii at Manoa, Honolulu, Hawaii, USA</i>	
27 THE EFFECT OF HEAVY METAL IONS ON TOMATO RIPENING		339
	<i>Graeme E Hobson, Royston Nichols and Carol E Frost, Glasshouse Crops Research Institute, Littlehampton, West Sussex, UK</i>	
28 POST-HARVEST EFFECTS OF ETHYLENE ON ORNAMENTAL PLANTS		343
	<i>R Nichols and Carol E Frost, Glasshouse Crops Research Institute, Littlehampton, West Sussex, UK</i>	
29 SIGNIFICANCE OF ETHYLENE IN POST-HARVEST HANDLING OF VEGETABLES		353
	<i>S P Schouten, Sprenger Instituut, Wageningen, The Netherlands</i>	
30 RELATIONSHIP BETWEEN ETHYLENE PRODUCTION AND PLANT GROWTH AFTER APPLICATION OF ETHYLENE RELEASING PLANT GROWTH REGULATORS		363
	<i>K Lürssen and J Konze, Bayer AG, Pflanzenschutz, Anwendungstechnik, Biologische Forschung, Leverkusen, FRG</i>	
31 COMMERCIAL SCALE CATALYTIC OXIDATION OF ETHYLENE AS APPLIED TO FRUIT STORES		373
	<i>C J Dover, East Malling Research Station, East Malling, Maidstone, Kent, UK</i>	
32 LOW ETHYLENE CONTROLLED-ATMOSPHERE STORAGE OF McINTOSH APPLES		385
	<i>F W Liu, Cornell University, Ithaca, New York, USA</i>	
33 A COMMERCIAL DEVELOPMENT PROGRAMME FOR LOW ETHYLENE CONTROLLED-ATMOSPHERE STORAGE OF APPLES		393
	<i>G D Blanpied, James A Bartsch and J R Turk, Cornell University, Ithaca, New York, USA</i>	
APPENDIX		405
LIST OF PARTICIPANTS		407
INDEX		413