

# Contents

Contents .....	i
Foreword.....	iii
1 Introduction.....	1
1.1 Definition and species diversity .....	1
1.2 Role of plants yielding non-seed carbohydrates.....	1
1.2.1 Geographic distribution .....	1
1.2.2 Nutritional aspects .....	2
1.2.3 Quality aspects.....	3
1.2.4 Other uses .....	5
1.2.5 Root and tuber crops compared with cereals.....	5
1.2.6 Perennial crops.....	5
1.2.7 Sweetening agents of plant origin .....	5
1.3 Botany.....	6
1.3.1 Taxonomy.....	6
1.3.2 Growth and development.....	6
The growth cycle .....	6
Carbohydrate accumulation.....	8
Ripening .....	8
1.4 Ecological conditions .....	9
1.4.1 Climatic factors.....	9
Light .....	9
Temperature.....	9
Water .....	10
Excess of water.....	10
Shortage of water.....	11
1.4.2 Soil factors.....	11
Soil types .....	11
Acidity.....	11
Salinity.....	11
1.5 Agronomy.....	12
1.5.1 Cropping systems .....	12
1.5.2 Propagation.....	12
1.5.3 Husbandry.....	13
Nutrient removal and immobilization .....	13
Crop rotation.....	13
Crop protection .....	14
1.6 Harvesting and post-harvest handling .....	14
1.6.1 Sugar cane.....	14
1.6.2 Root and tuber crops.....	14
1.6.3 Sago palm .....	14
1.6.4 Palm tapping.....	14
1.7 Genetic resources.....	15
1.8 Prospects.....	15
1.8.1 Non-seed carbohydrates as industrial raw material.....	16
1.8.2 Non-seed carbohydrates in energy cropping .....	17
References .....	17

2	Alphabetical treatment of species.....	19
	<i>Arenga pinnata</i> (Wurmb) Merrill.....	20
	<i>Borassus flabellifer</i> L.....	25
	<i>Colocasia esculenta</i> (L.) Schott.....	29
	<i>Dioscorea</i> L.....	34
	<i>Ipomoea batatas</i> (L.) Lamk.....	44
	<i>Manihot esculenta</i> Crantz.....	49
	<i>Metroxylon sagu</i> Rottboell.....	56
	<i>Musa</i> L. (plantain and cooking banana).....	61
	<i>Nypa fruticans</i> Wurmb.....	67
	<i>Saccharum officinarum</i> L.....	72
	<i>Solanum tuberosum</i> L.....	79
	<i>Xanthosoma</i> Schott Melet.....	86
	Glossary.....	92