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Kays, S.J., Nottingham, S.F.: **Biology and Chemistry of Jerusalem Artichoke *Helianthus tuberosus* L. -** CRC Press, Taylor and Francis Group, Boca Raton - Abingdon - Oxon - New York 2008. 478 pp. ISBN 10-1-4200-4495-8

Jerusalem artichoke (*Helianthus tuberosus* L.) is one of rich plant sources for inulin and other fructooligosaccharides {as *e.g.* yacon [*Smallanthus sonchifolius* (Poepp. *et* Endl.) H. Robinson]} that may provide dietary health benefits for obesity, diabetes, and several other health issues and with its possible use for biofuels is drawing tremendous recent interest. With its ready cultivation and minimal pest and disease problems, Jerusalem artichoke is an underutilized resource that possesses the potential to meet major health and energy challenges. "Biology and Chemistry of Jerusalem Artichoke" is a comprehensive, up-to-date book, which presents the unique biological and chemical properties of this crop. Citing a diverse cross-section of references, it reviews the history, classification, morphology, and anatomy of the plant. It details inulin chemistry addressing its properties and structure, extraction, and modification using microbes, enzymes, and a wide range of chemical processes. The book examines the use of Jerusalem artichokes as a biofuel and the role of inulin derived from the crop in combating obesity and diabetes, as well as promoting bone, blood, bowel, and immune health. A comprehensive chapter addresses genetic resources, breeding, breeding methods, hybridization, and the heritability of important traits. The book details developmental biology in terms of maximizing yield and determining resource allocation as well as controlling pests and disease. It concludes with practical information on agronomic methods, storage, the economics of crop production, and future prospects for utilization. This book provides the most comprehensive resource to date on this extremely useful crop and could serve as a valuable single reference source. The book focuses on Jerusalem artichoke as a source of inulin production and presents an up-to-date review of research on inulin and other fructooligosaccharides (FOS), and their derivatives with healthy and beneficial effects against diabetes and obesity. The authors provide industrial applications of Jerusalem artichoke, as well as its use as a feedstock for the production of biofuel. They address genetic resources, breeding, and the heritability of important traits and explain developmental biology within the context of maximal yield and resource allocation as well as offer information on agronomic methods, storage, economics, and future prospects for utilization. The book is divided into fourteen chapters detail dealing with all aspects of this crop – beginning from its nomenclature, identification, origin and history, distribution, following morphological differences between cultivars and clones. Significant chapter is devoted to tuber chemical composition, inulin and FOS chemistry, methods of their isolation, extraction, purification, fractionation, analysis, drying and storage, sources of insulin, uses for native and fractionated insulin, microbial and enzymatic modification of insulin, chemical modification of inulin and value in human and animal diet. In the other part the use of biofuel biomass, direct combustion, and biological conversion is discussed. Other chapters inform a reader about genetic resources, breeding and cultivars, breeding programs, cytology, interspecific hybrids, controlled crosses, traditional breeding, breeding techniques, flowering time, manipulation, irradiation, selection criteria, selection sequence, transgenic plants, genetic resources, molecular genetics, cultivars and clones. There is also in detail described fructan metabolism, additional metabolic pathways, yield, growth analysis and modelling, environmental factors affecting yield, agronomic practices, planting date, planting, weed control, fertilization, irrigation, harvesting and handling, as well as different pests and diseases, insect pests, molluscs, nematodes and other pests, fungal, bacterial and viral diseases characteristic for the Jerusalem artichoke. On the basis of 25 years running of their own research work with this plant and an extensive bibliography, the authors discuss propagation, tubers, rhizomes, tissue culture, slips, cuttings, seed developmental biology, resource allocation, and yield, developmental stages, photo-synthesis, respiration, assimilate allocation strategy, carbon transport, sink strength in relation to allocation, assimilate allocation and redistribution, storage options, storage losses and alterations in composition during storage, controlled atmosphere storage, effect of irradiation and economics and future prospects for artichoke utilizing. Thus, this book could be a very useful source of up-to-date information for both, experimental botanists, biochemists and physiologists, as well as for specialists, who are interested in the breeding, cultivation and many-sided utilization of this crop.

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