Sustainability of the Sugar and Sugar-Ethanol Industries

Edited by **Gillian Eggleston**

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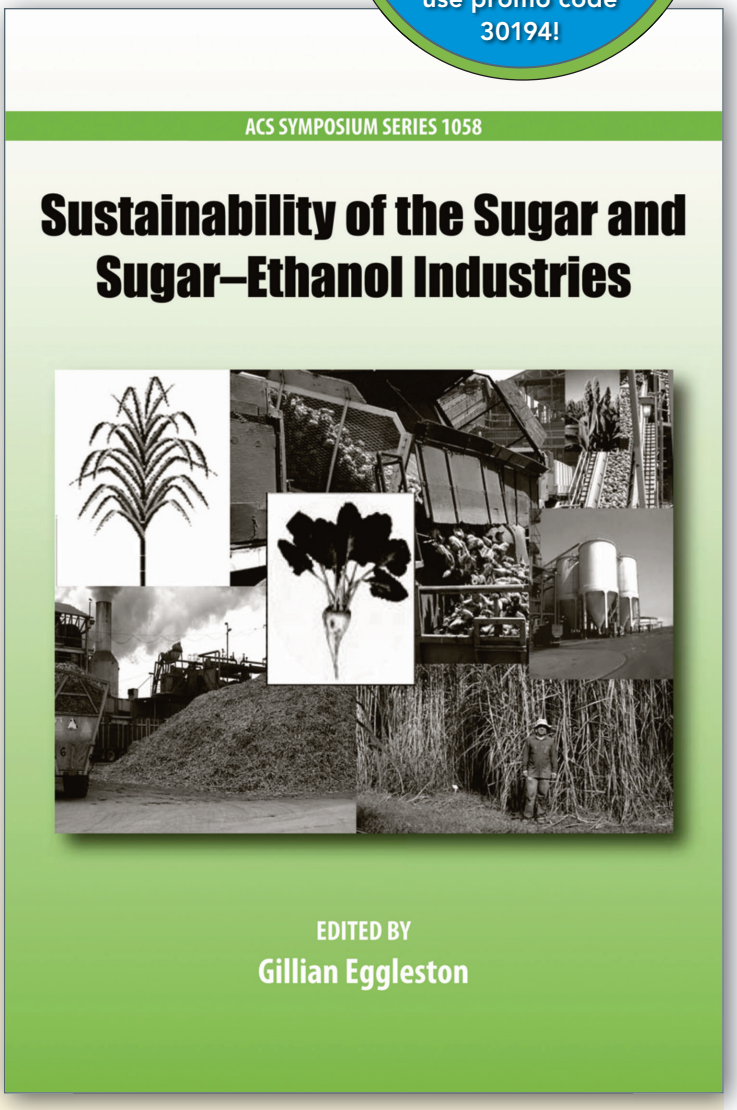
This book provides an increasing awareness, understanding, and implementation of the recent great and dramatic advances in both the worldwide sugar and sugar-ethanol industries. Surplus sugar on the world market, competition from high-intensity sweeteners, fluctuating prices, demand for production of high quality raw sugars, government policies, water- and energy-intensive factories and refineries and, in particular, the current worldwide impetus to produce alternatives to petroleum-based fuels, are putting pressure on the sugar industry to diversify and add value for sustainability. All biomass from sugarcane, sugar beet, and sweet sorghum plants, including leaves and tops, are being intensely investigated for utilization, including cellulosic ethanol production and cogeneration of heat and bioelectricity in some countries. It is expected that in the next few years sugar will be the "new oil" because sugar is superior feedstock for the production of platform chemicals for a wide range of industrial products. Sugar crops are excellent carbohydrate feedstocks because of their availability, and because they are amongst the plants giving the highest yields of carbohydrates per hectare. The significant potential of sugar crops as food and fuel ethanol (bioenergy) crops is currently driving rapid expansion of production areas throughout the world. This book highlights the successful sustainable efforts in sugar and sugar-ethanol industries around the world, emphasizing both production and processing practices as well as new measurements of sustainability and innovations.



Dr. Gillian Eggleston is a Lead Scientist/ Research Chemist with over 25 years of experience in carbohydrate chemistry and industrial sugar processing. She has conducted and led research on industrial sugar degradation reactions, sucrose loss measurements across industrial unit processes, the use of advanced clarification systems in raw sugar manufacture, sugarcane deterioration, industrial enzyme applications, and effects of sugarcane trash on processing.

May 2011 320 pp.
9780841225985 Hardback ~~$150.00~~ / **$120.00**

OXFORD
UNIVERSITY PRESS