

Innovative Uses of Agricultural Products and Byproducts



Library of Congress Cataloging-in-Publication Data

Names: Tunick, Michael, editor. | Liu, LinShu, editor.

Title: Innovative uses of agricultural products and byproducts / editors, Michael H. Tunick, Drexel University, Department of Food & Hospitality Management, College of Nursing & Health Professions, Philadelphia, Pennsylvania, LinShu Liu, Eastern Regional Research Center, Agricultural Research Service, United States Department of Agriculture, Wyndmoor, Pennsylvania ; sponsored by the ACS Division of Agricultural and Food Chemistry, Inc.

Description: Washington, DC : American Chemical Society, [2020] | Series: ACS symposium series ; 1347 | Includes bibliographical references and index.

Identifiers: LCCN 2020023135 (print) | LCCN 2020023136 (ebook) | ISBN 9780841237155 (hardcover OP) | ISBN 9780841237117 (ebook) | ISBN 9781713889441 (pod)

Subjects: LCSH: Farm produce. | Agricultural wastes. | Agricultural industries--By-products. | Agricultural wastes as fuel. | Agricultural wastes as feed.

Classification: LCC TD930 .I55 2020 (print) | LCC TD930 (ebook) | DDC 660/.282--dc23

LC record available at <https://lccn.loc.gov/2020023135>

LC ebook record available at <https://lccn.loc.gov/2020023136>

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

Copyright © 2020 American Chemical Society

All Rights Reserved. Reprographic copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Act is allowed for internal use only, provided that a per-chapter fee of \$40.25 plus \$0.75 per page is paid to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. Republication or reproduction for sale of pages in this book is permitted only under license from ACS. Direct these and other permission requests to ACS Copyright Office, Publications Division, 1155 16th Street, N.W., Washington, DC 20036.

The citation of trade names and/or names of manufacturers in this publication is not to be construed as an endorsement or as approval by ACS of the commercial products or services referenced herein; nor should the mere reference herein to any drawing, specification, chemical process, or other data be regarded as a license or as a conveyance of any right or permission to the holder, reader, or any other person or corporation, to manufacture, reproduce, use, or sell any patented invention or copyrighted work that may in any way be related thereto. Registered names, trademarks, etc., used in this publication, even without specific indication thereof, are not to be considered unprotected by law.

PRINTED IN THE UNITED STATES OF AMERICA

Contents

Preface	ix
1. Chemicals from Vegetable Oils, Fatty Derivatives, and Plant Biomass	1
Gobinda Karmakar, Pranab Ghosh, Kirtika Kohli, Brajendra K. Sharma, and Sevim Z. Erhan	
2. Preparation of Xylan Esters with the Use of Selected Lewis Acids	33
Atanu Biswas, H. N. Cheng, Michael Appell, Roselyne F. Furtado, Maria S. R. Bastos, and Carlucio R. Alves	
3. Deriving Biofuels and Value-Added Co-Products from <i>Sorghum bicolor</i>: Prospects in Biorefinery Applications and Product Development	43
Ryan J. Stoklosa	
4. Biosynthesis and Applications of Microbial Glycolipid Biosurfactants	63
Richard D. Ashby and Daniel K. Y. Solaiman	
5. Roles of Green Polymer Materials in Active Packaging	83
Tony Z. Jin and LinShu Liu	
6. Synthetic Platform for Controlled Delivery of 1-MCP: An Effective Approach to the Protection of Crops and Fresh Produce	109
Majher I. Sarker, LinShu Liu, Tasnuva Shahrin, Xuetong Fan, and Peggy Tomasula	
7. Pectin-Derived Vehicle for the Controlled Delivery of Bioactives	129
Karley K. Mahalak, Fang Yan, and LinShu Liu	
8. The Character of Queso Chihuahua	141
Diane L. Van Hekken, Michael H. Tunick, and John A. Renye	
Editors' Biographies	161

Indexes

Author Index	165
Subject Index	167