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Zainul Akmar Zakaria

Editor

Sustainable Technologies for the Management of Agricultural Wastes

 Springer

Editor

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Preface

Agriculture has been the main industrial sector for many countries around the world providing millions of job to the population and is the main source of income for those countries. Nevertheless, with the increasing demand for agricultural produce, huge amounts of agricultural waste are also produced. Those agricultural wastes, also loosely termed as biomass, have huge potential to be volarized into various products such as biochemicals, biofuels and biomaterials through different physical, chemical and biological approaches mainly due to the their high carbon contents.

However, without proper management, those wastes (both liquid and solid) pose a serious threat to the environment notably from their slow degradation. Current waste management approaches are effective but would normally require a huge capital investment and are labour-intensive. They also generate potentially hazardous by-products. The above concerns prompt the need to have an alternative approach which is cheaper and easier to handle and imposes minimum adverse impact to environment.

This book provides relevant and up-to-date technologies on the utilization of various types of agricultural waste, as a direct means of properly managing its abundance. The potential of using waste materials obtained from the palm oil industry, used cooking oil, maize plantations, citrus-based plants and the tea-planting sector for the production of useful and high-value materials such as pyroligneous acid and bio-oil (Chaps. 1 and 2), biochar (Chap. 3), ferulic acid (Chap. 4) and biocontrol agents (Chaps. 5, 6, 7, 8, and 9) has been discussed. In some of the chapters, proper case studies are also included to further enhance the understanding of the readers on the subject matter highlighted. It is worth noting that even though majority of the chapters included in this book revolve around laboratory-based investigations, they have been carefully deliberated by the authors to justify their commercial feasibility which is a very important component in any research and development (R&D) ventures.

This comprehensive volume is most useful to anyone involved in agricultural waste management, green chemistry and agricultural biotechnology. It is also recommended as a reference work for all agriculture and biotechnology libraries.

Johor Bahru, Malaysia
September 2017

Zainul Akmar Zakaria

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