Zhongqi He • Hailin Zhang
Editors

Applied Manure and Nutrient Chemistry for Sustainable Agriculture and Environment

Springer
Contents

1 Animal Manure Production and Utilization in the US ............................................. 1
   Hailin Zhang and Jackie Schroder

2 Residual Veterinary Pharmaceuticals in Animal Manures and Their Environmental Behaviors in Soils .................................................. 23
   Weiping Song and Mingxin Guo

3 Changes in Nutrient Content and Availability During the Slow Pyrolysis of Animal Wastes ................................................. 53
   Minori Uchimiya

4 Soil Amino Compound and Carbohydrate Contents Influenced by Organic Amendments ................................................................. 69
   Zhongqi He, Daniel C. Olk, and Heidi M. Waldrip

5 Nitrogen Mineralization in Soils Amended with Manure as Affected by Environmental Conditions ............................................. 83
   Dexter B. Watts and H. Allen Torbert

6 Soil Enzyme Activities as Affected by Manure Types, Application Rates, and Management Practices ............................................. 99
   Veronica Acosta-Martínez and Heidi M. Waldrip

7 Phosphatase Activities and Their Effects on Phosphorus Availability in Soils Amended with Livestock Manures .................. 123
   Heidi M. Waldrip and Veronica Acosta-Martínez

8 Variety and Solubility of Phosphorus Forms in Animal Manure and Their Effects on Soil Test Phosphorus ................................ 141
   Paulo H. Pagliari

9 Phytate in Animal Manure and Soils: Abundance, Cycling and Bioavailability ................................................................. 163
   Courtney D. Giles and Barbara J. Cade-Menun
10 Phosphorus Forms and Mineralization Potentials of Alabama Upland Cotton Production Soils Amended with Poultry Litter ........................................... 191
Irenus A. Tazisong, Zachary N. Senwo, Barbara J. Cade-Menun, and Zhongqi He

11 Chemistry and Application of Industrial By-products to Animal Manure for Reducing Phosphorus Losses to Surface Waters ........................................... 211
Chad J. Penn and Joshua M. McGrath

12 Nutrient Chemistry of Manure and Manure-Impacted Soils as Influenced by Application of Bauxite Residue ........................................... 239
Jim J. Wang and Lewis A. Gaston

13 Investigation of Compound-Specific Organic-Inorganic Phosphorus Transformation Using Stable Isotope Ratios in Phosphate ........................................... 267
Deb P. Jaisi, Ruth E. Blake, Yuhong Liang, and Sae Jung Chang

14 Chemical Characteristics of Custom Compost for Highbush Blueberry ........................................... 293
Dan M. Sullivan, David R. Bryla, and Ryan C. Costello

15 Distribution and Biodegradability of Water Soluble Organic Carbon and Nitrogen in Subarctic Alaskan Soils Under Three Different Land Uses ........................................... 313
Mingchu Zhang, Aiqin Zhao, and Zhongqi He

16 Remote Sensing of Nutrient Concentrations of Soils and Crops in Biosolid Amended Soils ........................................... 333
B.B. Maruthi Sridhar, Fengxiang X. Han, and Robert K. Vincent

17 Cotton Production Improvement and Environmental Concerns from Poultry Litter Application in Southern and Southeastern USA Soils ........................................... 355
Haile Tewolde and Karamat R. Sistani

About the Editors ........................................... 371

Index ........................................... 373