Handbook of Bioenergy Crops
A Complete Reference to Species, Development and Applications
By N. El Bassam

'The] most authoritative and rich source of information in biomass. It can be considered as a milestone and will be instrumental in promoting the utilization of biomass for human welfare in decades to come.'
Prof. Dr. Rishi Kumar Behl, University of Hisar, Haryana, India

£150.00
Hardback

March 2010 • 544 pages • 246 x 189mm • ISBN 9781844078547

Biomass currently accounts for about 15 per cent of global primary energy consumption and is playing an increasingly important role in the face of climate change, energy and food security concerns.

Handbook of Bioenergy Crops is a unique reference and guide, with extensive coverage of more than 80 of the main bioenergy crop species. For each it gives a brief description, outlines the ecological requirements, methods of propagation, crop management, rotation and production, harvesting, handling and storage, processing and utilization, then finishes with selected references. This is accompanied by detailed guides to biomass accumulation, harvesting, transportation and storage, as well as conversion technologies for biofuels and an examination of the environmental impact and economic and social dimensions, including prospects for renewable energy.

This is an indispensable resource for all those involved in biomass production, utilization and research.

'This book enlightens the vital economic and social roles of biomass to meet the growing demand for energy.'
Dr. Qingguo Xi, Agricultural Institute of Dongying, Shandong, China

'The author's decade-long expertise and dedication makes this publication unique. Global in scope, the standards of judgment and accuracy are high for a book that will become the biomass bible and reference for future generations.'
Prof. Preben Maegaard, Director, Nordic Folkecenter for Renewable Energy and Chairman, World Council for Renewable Energy (WCRE)

CONTENTS

Part I: Fuel and Feed the World
1. Global Energy Production, Consumption and Potentials of Biomass
2. Bioenergy Crops versus Food Crops
3. Transportation Biofuels
4. Primary Biomass Productivity, current yield potentials, Water and Land availability

5. Harvesting, Logistic and Delivery of Biomass

6. Technical Overview: Feedstocks, Types of Biofuels and Conversion Technologies

7. Environmental Impact

8. Economic and Social Dimensions

9. Integrated Bionergy Farms and Rural Settlements

**Part II: 10. Energy Crops Guide covers:**

- Aleman Grass (Carib Grass)
- Alfalfa
- Algae
- Annual Ryegrass
- Argan Tree (Ironwood)
- Babassu Palm (Babaçu)
- Bamboo
- Banana
- Black Locust
- Broom (Ginestra)
- Buffalo Gourd
- Cardoon
- Cassava
- Castor Oil Plant
- Coconut Palm
- Common Reed
- Cordgrass
- Cotton
- Cuphea
- Date Palm
- Eucalyptus
- Giant Knotweed
- Giant Reed
- Groundnut
- Hemp
- Jatropha (Physic Nut)
- Jojoba
- Kallar Grass
- Kenaf
- Kudzu
- Leucaena (Horse Tamarind)
- Lupins
- Meadow Foxtail
- Miscanthus
- Neem Tree
- Oil Palm
- Olive Tree
- Perennial Ryegrass
- Pigeonpea
- Poplar
- Rape
- Reed Canarygrass
- Rocket
- Root Chicory
- Rosin Chicory
- Safflower
Safou
Salicornia
Sheabutter Tree
Sorghum
Sorrel
Soybean
Sugarbeet
Sugarcane
Sunflower
Sweet Potato
Switchgrass
Tall Fescue (Reed Fescue)
Tall Grasses
Timothy
Topinambur (Jerusalem Artichoke)
Water Hyacinth
White Foam
Willow

Part III Additional Bioenergy Crops

11. Ethanol Crops
   Barley
   Maize
   Potato
   Rice
   Wheat

12. Oil Crops
   Flax
   Linseed

13. Biogas from Crops

14. Hydrogen and Methanol Crops

15. Underutilized and unexploited Crops

Appendices

ABOUT THE AUTHOR

Prof. Dr. N. El Bassam is the Director of International Research Centre for Renewable Energy (IFEEP) in Germany.