

## Book Received

Geller, K.E. and K.J. Wilson. *Nitrogen Fixation in Tropical Cropping Systems*. Wageningen Agricultural University, the Netherlands, 1991. £30 (\$57) ISBN 0-851-98-671-4.

Soil fertility is the overriding constraint to food production in the tropics and yet in many developing countries fertilizers are unavailable or beyond the reach of subsistence farmers. The biological fixation of atmospheric nitrogen is the only way that plants can manufacture their own fertilizer and is the main input of nitrogen in many tropical cropping systems. This book provides a comprehensive review of the main nitrogen fixing grain crops, fodder plants and trees in the tropics and how the inputs of nitrogen can be most efficiently utilized for sustainable agricultural production.

### Contents include:

#### Part I: Introduction

- Tropical environments: climates, soils and cropping systems
- N<sub>2</sub>-fixing organisms in the Tropics
- The process of N<sub>2</sub>-fixation
- Assessment of the role of nitrogen fixation.

#### Part II: Tropical Crops and Cropping Systems

- Cereal crops and grasses: free-living and root associated N<sub>2</sub>-fixing bacteria
- Wetland rice: cyanobacteria, *Azolla* and green manures
- Grain legumes
- Pasture improvement: legume introduction
- Plantation crops: the use of understory legumes and shade trees
- Legumes in multiple cropping: crop rotations, green manures and intercrops
- Agroforestry: N<sub>2</sub>-fixing trees in integrated crop production

#### Part III: Optimizing Nitrogen Fixation

- Environmental constraints to N<sub>2</sub>-fixation
- Past approaches: successes and failures
- Future benefits: an ecological approach to agriculture

*It will therefore interest a wide range of students, research workers and professionals in tropical soil science and agronomy, as well as those concerned specifically with nitrogen fixation.*