Plant Nutrient Management in Hawaii’s Soils
Approaches for Tropical and Subtropical Agriculture

Today’s approach to crop production considers not only the effects of fertilizer applications on crop yield and quality but also includes awareness of the potential of fertilizer nutrients to adversely affect the environment. Managing crop nutrients deliberately and carefully takes on special significance in Hawaii, where imported nutrient inputs are costly and the environment—particularly the underground aquifer and coastal waters—is vulnerable to pollution.

This book contains a distillation of decades of CTAHR research on soils, fertilizers, and crop nutrient needs, written for the lay reader and intended to provide a solid base of knowledge for the serious agriculturist. While the text makes reference to Hawaii’s crops and soil conditions, its basic information is transferrable to similar tropical and subtropical locations throughout the world.

158 pages, 16 pages in color

Contents

Managing fertilizer nutrients to protect the environment and human health
Sampling and analysis of soils and plant tissues
Essential nutrients for plant growth: nutrient functions and deficiency symptoms
Recommended plant tissue nutrient levels for some vegetable, fruit, and ornamental foliage and flowering plants in Hawaii
Use of information from soil surveys and classification
How fertilizer recommendations are made
Interpreting soil nutrient analysis data: definition of “low,” “sufficient,” and “high” nutrient levels
Collection of calibration data for interpreting soil and plant tissue analyses
Predicting soil phosphorus requirements
Soil acidity and liming
Plant tolerance of low soil pH, soil aluminum, and soil manganese
Inorganic fertilizer materials
Biological nitrogen fixation: nature’s partnership for sustainable agricultural production
Mycorrhizal fungi and plant nutrition
Organic soil amendments for sustainable agriculture: organic sources of nitrogen, phosphorus, and potassium
Plant-parasitic nematodes and their management
Soil and water salinity

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