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NUTRIENT MANAGEMENT SUPPORT SYSTEM (NuMaSS)

Name : NuMaSS

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NuMaSS is a tool that diagnoses soil constraints and selects appropriate management practices, based on agronomic, economic and environmental criteria for location specific conditions. NuMaSS integrates three existing nutrient decision support systems: Acid Decision Support System (ADSS), Nitrogen Decision Support System (NDSS) and the Phosphorus Decision Support System (PDSS). The three systems are integrated as modules into one system with a shared interface.

NuMaSS consists of 5 programmatic sections:

1. Geography: distinguishes between humid / tropical, wet / dry and semi-arid
2. Diagnosis: provides an early indication whether there is a nutrient management problem diagnoses soil constraints. There are 4 subsections:
 - intended crop (name, target yield and AI-saturation must be provided)
 - previous cropping
 - soil order (USDA taxonomy). Default values for soil data is available
 - plant: plant analysis, nutrient deficiency symptoms, indicator plants- The result of the diagnosis is the likelihood of an acidity, nitrogen or phosphorus constraints
3. Prediction: organic application, lime application, nutrient application
4. Economics
5. Results

The required inputs vary per module:

ADSS	NDSS	PDSS
soil order	The module uses an extensive database	Intended crop
crop critical % Al saturation	intended crop	Soil test P method
exchangable Al	intended crop yield	Soil test P-value
Effective cation exchange capacity	plant N	Percent clay content
bulk density	amount of organic amendment	Fertilizer type
% clay or textural class	amount of residues	Application method Application depth