How to manage soil fertility

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Applying nutrients to the crop is essential in managing soil fertility so the plants grow and develop normally. A number of crop problems can be related to inefficient management of nutrients and nutrient imbalances in the field.

Site-Specific Nutrient Management

Site-specific nutrient management (SSNM) enables farmers to dynamically adjust fertilizer use, by supplying optimum amounts of nutrients at critical time points in the crop's growth to produce high yields.

In SSNM, farmers tailor their nutrient management strategy to the specific conditions of their field.

The following are steps in SSNM:

STEP 1 Establish an attainable yield target

Identify estimated yield based on location and season. Consider factors such as climate, rice cultivar, and crop management.

The yield target determines the total amount of nutrients that must be taken up by the crop.

STEP 2 Effectively use existing nutrients

Indigenous nutrients which comes from the soil, along with organic materials, crop residues, manures and irrigation, need to be managed properly to achieve optimal crop nutrient uptake.

Read: Use crop residues as mulches | How to make a compost | What are cover crops

STEP 3 Apply fertilizer to fill in other nutritional needs of the crop

NPK fertilizers are applied to supplement indigenous nutrients.

The quantity of application is determined by the target yield and the amount of nutrients needed by the crop.

To assess the crop's nutrient needs, use the Leaf Color Chart.

Fact sheets: Nitrogen (N) | Phosphorus (P) | Potassium (K) | Zinc (Zn)

Go to web app: Rice Crop Manager

Read: for researchers and scientists - SSNM explained | SSNM in detail

Fact sheets: for farmer-managed research - Addition plots | Nitrogen split applications | Nutrient omission plots

Crop Manager

Rice Crop Manager

Rice Crop Manager (RCM) is a computer- and mobile phone-based application that provides extension agents and farmers with advice on crop and nutrient management matching their particular farming conditions.

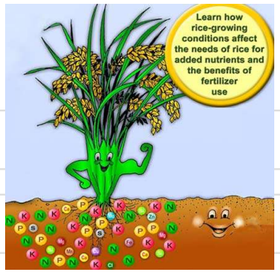
Location-specific guidelines are currently available in Bangladesh, China, India, Indonesia, the Philippines, and West Africa.

Go to web app: Rice Crop Manager | RCM Tutorial

Nutrient Teacher for Rice

Nutrient Teacher for Rice is a teaching tool on RCM. This app is made for students and instructors of introductory courses in soil science and crop science. It can also be used by researchers.

It shows how information on season, crop establishment, variety, growth duration of rice, yield, residue management, soil fertility, and use of organic materials as sources of nutrients affect rates of nitrogen (N), phosphorus (P), and potassium (K) fertilizer.



Go to web app: Nutrient Teacher for Rice

Did this page help you?

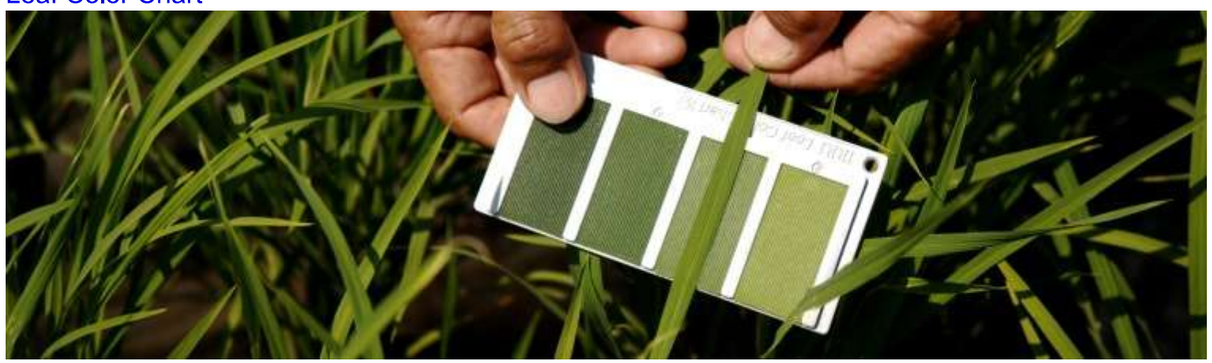
Cover crops

Growing cover crops help suppress weeds and enrich the soil.
Read more »

Deficiencies and toxicities

Nutrients are important in rice crop growth and development. Having too much or too less of the nutrients can affect the yield.
Read more »

Leaf Color Chart



Plants need optimum amounts of fertilizers in order to develop properly. Use the Leaf Color Chart (LCC) to estimate the rice crop's nitrogen needs.
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