

# Nutrient Expert for Wheat and Hybrid Maize: Novel Tools for Large-scale Adoption of SSNM in India

Site-specific nutrient management (SSNM) is an oft-repeated terminology in the field of nutrient management. This approach provides scientific principles for optimally supplying crops with nutrients as and when needed for specific fields in a particular cropping season. The SSNM approach is, however, a knowledge-intensive technology that requires information on specific local conditions for crop yield, crop residue management, past fertilizer use, input of nutrients from other external sources as well as the nutrient supplying capacity of the soil. Such knowledge requirements have slowed the wide-scale promotion and adoption of SSNM by the farmers. The need for more rapid uptake of the technology by farmers led IPNI to consolidate the research into simple delivery systems, such as *Nutrient Expert* for Wheat and Hybrid Maize that enable farmers to rapidly implement SSNM.

The *Nutrient Expert* for Wheat and Hybrid Maize are new, computer-based decision support tools developed to assist local experts to quickly formulate fertilizer guidelines for the above crops grown in India. The software, developed by IPNI, is based on the principles of SSNM and allows scientists and extension experts to jointly formulate novel nutrient management strategies that are expected to help farmers increase their yield and profit.

The software utilizes information provided by a farmer or a local expert to suggest a meaningful yield goal for his location and develop a fertilizer management strategy required to attain the yield goal. The required information about the production system is gathered through a set of simple, easily answerable questions that analyses the current nutrient management practices and develops guidelines on fertilizer management (and more) that are tailored for a particular location (i.e. growing environment). The software also does a simple profit analysis comparing costs and benefits between the farmer's current practice and the recommended alternative improved practice.

The *Nutrient Expert* tool was designed in a way that it can be used as a learning tool—providing quick helps, instant summary tables and graphs, plus allowing a great amount of

**Nutrient Expert for Wheat**  
Version 1.0

Settings About Help Exit

First time user? Working in a new location? Make sure to have the 'Settings' right!

Nutrient Expert for wheat helps you to:

- evaluate current nutrient management practices
- determine a meaningful yield goal based on attainable yield
- estimate fertilizer NPK rates required for the selected yield goal
- translate fertilizer NPK rates into fertilizer sources
- develop an application strategy for fertilizers (right rate, right source, right location, right time), and
- compare the expected or actual benefit of current and improved practices.

To start, click a button

Current FFP & Yield → SSNM Rates → Sources & Splitting → Profit Analysis

**Nutrient Expert for Hybrid Maize**  
Version 1.01 (February 2010)

Settings About Help Exit

First time user? Working in a new location? Make sure to have the 'Settings' right!

Nutrient Expert for Hybrid Maize helps you to:

- develop an optimal planting density for your location
- evaluate current nutrient management practices
- determine a meaningful yield goal based on attainable yield
- estimate fertilizer NPK rates required for the selected yield goal
- translate fertilizer NPK rates into fertilizer sources
- develop an application strategy for fertilizers (right rate, right source, right location, right time), and
- compare the expected or actual benefit of current and improved practices.

To start, click a button

Current NM Practice → Planting Density → SSNM Rates → Sources & Splitting → Profit Analysis

flexibility in navigating through the modules in the software.

In conclusion, the *Nutrient Expert* for Wheat and Hybrid Maize in India help to:

- develop an optimal planting density for a location (Hybrid Maize);
- evaluate current nutrient management practices;
- determine a meaningful yield goal based on attainable yield;
- estimate fertilizer NPK rates required for the selected yield goal;
- translate fertilizer NPK rates into fertilizer sources;
- develop an application strategy for fertilizers (right rate, right source, right time, right place);
- compare the expected or actual benefit of current and improved practices. **ICRISAT**