



## **NEWSFLASH : Improving Wheat Yield in India with the user-friendly and robust *Nutrient Expert*<sup>®</sup> tool**

May 31, 2013. Penang, Malaysia – According to the Fertilizer Association of India, wheat covers approximately 29 million hectares of land with an annual production of 81 million tonnes between 2009 and 2010 in India. There are significant differences in yield among the wheat-producing states, with Punjab recording yield highs of 4.3 t/ha and Bihar, 2.1 t/ha. Yield gaps also exist between farmer fertilizer practices (FFP) and NPK plots managed by researchers. This represents an opportunity for farmers to increase wheat yield with improved nutrient management.

*Nutrient Expert*<sup>®</sup> is a novel, computer-based decision support tool developed by the International Plant Nutrition Institute (IPNI) that works in accordance with the 4R Nutrient Stewardship concept using the principles of site-specific nutrient management to help crop advisors formulate fertilizer guidelines for individual farmers. The 4R concept promotes the sustainability of agricultural systems by applying the right source of nutrient, at the right rate, at the right time, and in the right place. Using wheat data compiled by IPNI from 33 locations in Asia, an algorithm was devised for calculating N, P and K requirements for wheat, based on attainable yield and yield response to nutrients.

Field evaluations of *Nutrient Expert*<sup>®</sup> for wheat in 2010-11 were conducted by IPNI at six sites under conventional tillage and three sites practising conservation agriculture in the Indo-Gangetic Plains. Fertilizer recommendations from *Nutrient Expert*<sup>®</sup> for wheat were tested against FFP and State recommendations. *Nutrient Expert*<sup>®</sup> recommendations showed increased economic benefit (gross return above fertilizer costs) across all sites despite the additional fertilizer use, especially K, increasing yield by 0.9 t/ha over FFP and 0.3 t/ha over state recommendations in areas with conventional tillage; and 0.8 t/ha over FFP and 0.5 t/ha over state recommendations with conservation agriculture.

The yield improvement observed with *Nutrient Expert*<sup>®</sup> for wheat was a direct result of balanced NPK application based on crop need. Where existing recommendations merely provided a 'one size fits all' solution for fertilizer application, *Nutrient Expert*<sup>®</sup> for wheat made location-specific recommendations, based on decision rules that considered the varying conditions of climate, soils and cropping systems in the diverse growing environments.

Developed in collaboration with CIMMYT and local stakeholders including scientists, extension agents and crop advisors from government and private organizations, *Nutrient Expert*<sup>®</sup> for wheat is a user-friendly tool to implement 4R Nutrient Stewardship by applying the principles of site-specific nutrient management in wheat fields to increase productivity and profitability.

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### **About IPNI**

The International Plant Nutrition Institute (IPNI) is a not-for-profit, science-based organization dedicated to the responsible management of plant nutrition for the benefit of people. Through cooperation and partnerships with respected institutions around the world, IPNI adds its strength to agronomic research, education, demonstrations, training, and other endeavors. Best management practices for nutrient stewardship encourage the concept of 4Rs - applying the right nutrient source, at the right rate, at the right time, and in the right place. To learn more about IPNI, please visit: [www.ipni.net](http://www.ipni.net)

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