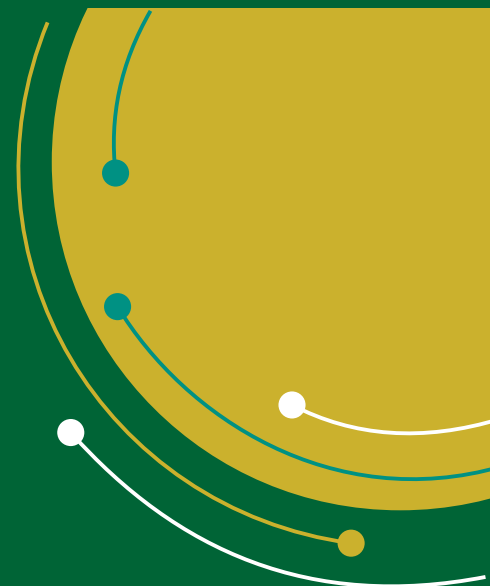
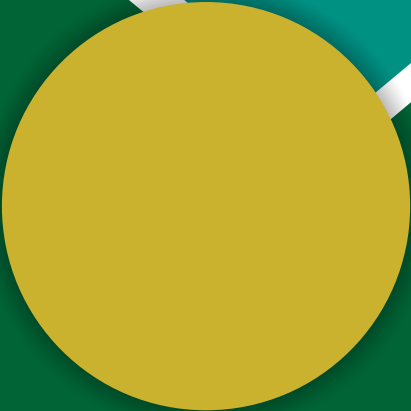


Multi-micronutrient Foliar Feeding Technology for High Quality Crop Production



Muhammad Yaseen

Soil Fertility and Plant Nutrition,
Institute of Soil & Environmental Sciences,
University of Agriculture, Faisalabad



Micronutrients play an active role in the plant metabolic processes. Decrease in availability of micronutrients in soils and their limited uptake by plants due to alkaline and calcareous soil nature has widened the gap between potential yield and average farmer's obtained yield of a crop. To narrow down this gap, foliar feeding of micronutrients emerged as an innovative technology as it can be 10 to 20 times more efficient than soil application. However, this efficiency is not always achieved in actual practice due to unfavorable weather and improper formulation and application techniques.

Therefore, judging what foliar material to apply, when to apply and how to apply are important principles to make best use of this technique. The addition of bio-stimulant to micronutrients formulation is effective to maximize feeding efficiency of foliar spray.

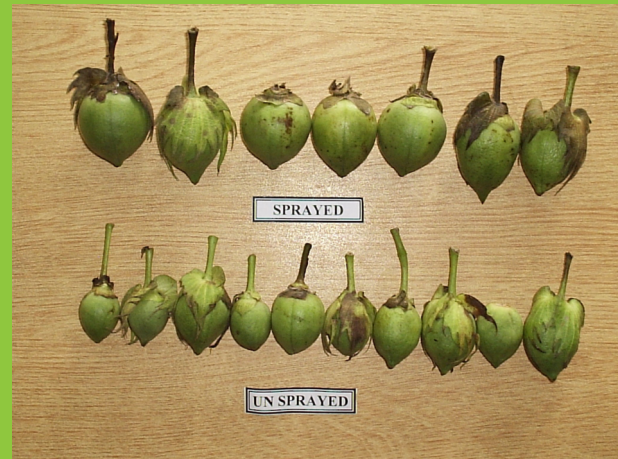
Demonstration trials were extensively conducted on farmer's fields of nine villages at Toba Tek Singh. Foliar feeding was supplemented with farmer's soil applied fertilizers which was taken as control. Multinutrients foliar feeding spray contained 4.7% Zn, 2% Fe, 1% B, 2% Mn and 0.3% Cu amended with bio-stimulant and surfactant. This spray was applied at rate of 500, 1000 and 1500 mL acre⁻¹ in splits on wheat and cotton crops without disturbing farmer's followed agronomic practices. First split of spray was applied after 50 days of plant growth while 2nd split was applied 15 days after the 1st spray. Differences in growth and yield parameters of wheat and cotton crops were recorded between sprayed and unsprayed plots.

Application of 1500 mL acre⁻¹ foliar spray increased wheat grain and seed cotton yields greater than 25% due to improvement in growth and yield contributing parameters in both crops as compared to control. Similarly, maximum uptake of macronutrients (N, P & K) and micronutrients (Fe, Cu, B, Mn & Zn) by wheat grains was observed in this treatment indicating production of higher yields probably due to efficient uptake of nutrients. Therefore, results on all sites concluded that application of multinutrients foliar spray

at the rate of 1500 mL acre⁻¹ was found most effective; however it was closely followed by the application rate of 1000 mL acre⁻¹. Comparative results on growth parameters of wheat and cotton between sprayed and unsprayed plots were shown to mass gatherings of farmers of project and surrounding areas by holding farmer's field days. The product was registered as *Uni-Micropower*.



Increase in Seed cotton yield up to 25%



➤ Increase in tillers = 21-27% ➤ Increase in grain yield > 25%

یونی مائیکرو پاور کے پتوں پر سپرے کے ذریعے فصلوں کی پیداوار میں اضافے کے مختلف مراحل



یونی مائیکرو پاور کے پتوں پر سپرے سے فصلوں کی پیداوار میں 25 فیصد تک اضافہ ممکن ہے