

Role of Micronutrients in Balanced Nutrient Management



CHALLENGE:

Despite a continuous rise in fertilizer use in Pakistan, crop productivity per unit area is almost stagnant. Though multiple factors may be responsible for this worrisome situation, the role of soil-plant nutrient deficiencies and/or imbalances cannot be ruled out. Thus, there was need to introduce micronutrient in balanced nutrient management for sustaining and improving crop productivity in the country.

INTERVENTION:

Identified and established field-scale deficiencies of micronutrients [boron (B), zinc (Zn) &/or iron (Fe)] in cotton, wheat, maize, potato, sorghum, rapeseed and groundnut; followed by demonstration of **highly cost-effective yield increases** (8-40% over control) with micronutrient fertilization.

For example, systematic and extensive nutrient indexing of farmers' grown cotton and associated soils revealed that **50% of the fields were deficient in boron (B) and 40% in zinc (Zn)**. Increase in seed cotton yield, i.e., ~8-15% was demonstrated with B + Zn application in extensive experiments conducted at farmers' fields. Average **value: cost ratio (VCR) of B+ Zn use was 10:1 to 25:1**.

OUTCOME:

Consequently, this technology has been recommended in cotton, by Punjab and Sindh Agriculture Department and NFDC, and is being adopted by many cotton growers. *Potential increase in productivity with B + Zn, applied on 50% of the deficient cotton areas of Pakistan, worth a significant increase in farmers' income.*