



Effect of contrasting tillage at early growth stage of maize.

plots is expected to cause more yield penalty in the spring crop because of shorter recovery time compared to winter maize. Due to longer duration of winter maize, the mineralisation of the immobilised N might have helped the crop as the physiological stages of N requirement (days after planting for V3 to Vt) occur later than the spring crop. Besides, the average early growth time temperature was higher for spring maize than winter maize. The major phase of N uptake in maize starts at the V3 stage of the crop. Comparatively higher ambient temperature during V3 stage of the crop in spring maize might have caused higher microbial immobilisation of indigenous N and therefore, decreased N availability to the spring crop as compared to the winter crop—leading to more yield penalty.

Maize yields in P or K omission plots were higher in ZT systems as compared to CT plots. In general, tillage was expected to cause greater mineralization, and release of P and K from soil minerals as well as organic phases, leading to higher plant availability of these nutrients in the CT plots.

However, release of P and K due to tillage may not be very significant under the prevalent aerobic conditions during maize establishment to override more efficient utilisation of these nutrients under the ZT condition (Timsina et al., 2010). In K omission plots, the contribution of K from crop residues in the ZT system probably helped to increase yield as compared to CT plots. The increased yield in P-omitted ZT plots might be related to higher mineralisation and more efficient utilisation of the indigenous P in presence of higher N and K, but more studies are needed to confirm this effect.

Summary

Results from the farmer field trials in different maize-growing environments of eastern India showed high variability in nutrient supplying capacity of soils. Both spring and winter maize showed higher yield in ZT than the conventionally grown crop. Omission of nutrients in contrasting tillage systems in spring maize suggest greater availability of P and K, but lower availability of N in ZT plots as compared to CT. Lower availability of N in ZT was not apparent in winter maize, which is probably related to growth duration and ambient temperature during the early growth stage of the crop. **ICSA**

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Crop Nutrient Deficiency Photo Contest Entries Due by December 11



December 11, 2012, is the deadline for entries in the annual IPNI contest for photos showing nutrient deficiencies in crops. An individual can submit an entry for each of the four nutrient deficiencies categories: nitrogen (N), phosphorus (P), potassium (K), and other (i.e. secondary nutrients and micronutrients).

Preference is given to original photos with as much supporting/verification data as possible. Cash prizes are offered to First Place (USD 150) and Second Place (USD 75) in each of the four categories, plus a Grand Prize of USD 200 will be awarded to the photo selected as best over all categories. Entries can only be submitted electronically to the contest website: www.ipni.net/photocontest. **ICSA**

