

Comparison of Soil Phosphorus Tests for Assessing Plant Availability of Phosphorus in an Ultisol Amended with Water-Soluble and Phosphate Rock Sources

Abstract

This work reports on soil phosphorus (P) test calibrations in triple superphosphate (TSP)– and phosphate rock (PR)–fertilized soils for cost-effective fertilizer recommendations. Results showed that separate calibrations are required for TSP and PR fertilizers for conventional soil tests. Use of critical P levels (CPLs) established for TSP in PR recommendations leads to erroneous application of PR while it incurs unnecessary application costs. The iron oxide–impregnated paper was insensitive to P sources and would be the most appropriate soil test in integrated nutrient systems

Keyword: phosphate rock, phosphorus bioavailability, phosphorus soil tests calibration