

On-Field Ohio

Management Matters

What Can It Do?

On-Field Ohio provides a long-term, average estimate of field-scale, edge-of-field phosphorus (P) runoff and erosion risk. On-Field Ohio allows farmers to prioritize time and resources to make effective management decisions.

How Does It Work?

Example Field Inputs: Blount Silt Loam with 3% slope steepness

Compare the rotation average On-Field Ohio results for corn/bean rotations across:
2 crop management scenarios (A & B) representing varying levels of soil disturbance

CMS A: Fall chisel, spring disk & field cultivate plant corn grain, no-till plant soybeans

CMS B: No-till plant corn grain, no-till plant soybeans

3 Soil test P levels (15, 50, 150 mg/kg, Mehlich3-P)

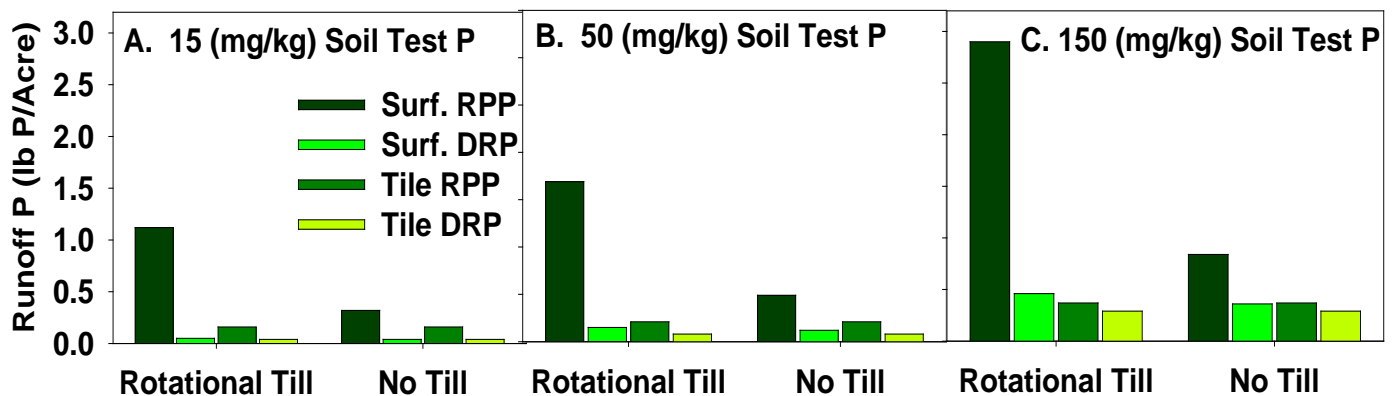
Example Field Outputs:

Erosion:

CMS A, Rotational Tillage: 2.2 ton/acre/yr

CMS B, No-Till: 0.43 ton/acre/yr

Figure 1. Surface and Tile particulate bound P (RPP) and dissolved P (DRP) in lb P/A



How Can It Help?

The Power is in the ability to compare erosion and P runoff outcomes across crop management scenarios and soil test P levels, as illustrated in Figure 1.

- 80.5% reduction in erosion by moving from CMSA to CMSB due to reduced tillage.
- 71% reduction in surface particulate bound P runoff, across soil test P levels due to reduction in erosion moving from CMSA to CMSB.
- Surface dissolved and tile runoff are most strongly influenced by soil test P levels. Figure 1 illustrates that moving from a soil test P level of 15 to 150 mg/kg results in:
 - Surface: 9x increase in surface dissolved P runoff
 - Tile: >7x increase in tile dissolved P, >2x increase in tile particulate bound P