# ON-FIELD OHIO

## Sample Data Analysis

This activity is provided as an alternative for completing the full On-Field Ohio activity using the web-based tool. This is a sample for analyzing the data and comparing practices without the time required to run the different scenarios.

### Management Practice Scenarios

This data came from a comparison between two different management practices on the same field. Analyze the data from each and determine which practice is better for reducing P loss.

**Sample 1**

Franklin County

Lewisburg-Crosby complex, 2-6 percent slopes

Rotation template: corn nt (no-till) Drill CC (cover crop) rye, Soybean nt (no-till)

| A Sample 1 | CY 1 | CY 2 | Rotation Average |
|---|---|---|---|
| Erosion (t/a/yr) | 1.301734254 | 0.726335631 | 1.014034942 |
| Soil Tillage Intensity Rating (STIR) | 5.475 | 3.0375 | 4.25625 |
| Mehlich 3 P (ppm) | 42.85714286 | 42.85714286 | 42.85714286 |
| Surface Particulate P (lb/A) | 1.053793804 | 0.68032574 | 0.867059772 |
| Tile Particulate P (lb/A) | 0.217705725 | 0.217705725 | 0.217705725 |
| Surface Dissolved P (lb/A) | 0.12815114 | 0.127307529 | 0.127729334 |
| Tile Dissolved P (lb/A) | 0.08030976 | 0.08030976 | 0.08030976 |
| Surface Dissolved P due to Fert. App. (lb/A) | 0 | 0 | 0 |
| Surface Dissolved P due to Man. App. (lb/A) | 0 | 0 | 0 |
| Total P Loss (lb/A) | 1.479960428 | 1.105648754 | 1.292804591 |

**Sample 2**

Franklin County

Lewisburg-Crosby complex, 2-6 percent slopes

Rotation template: Fall Chisel, sp disk, fcult corn Drill CC rye, Soybean, nt

| B Sample 2 | CY 1 | CY 2 | Rotation Average |
|---|---|---|---|
| Erosion (t/a/yr) | 6.660321835 | 1.828199706 | 4.24426077 |
| Soil Tillage Intensity Rating (STIR) | 109.475 | 3.0375 | 56.25625 |
| Mehlich 3 P (ppm) | 49.28571429 | 49.28571429 | 49.28571429 |
| Surface Particulate P (lb/A) | 4.653666902 | 1.440927495 | 3.047297199 |
| Tile Particulate P (lb/A) | 0.228039997 | 0.228039997 | 0.228039997 |
| Surface Dissolved P (lb/A) | 0.165951326 | 0.181058074 | 0.1735047 |
| Tile Dissolved P (lb/A) | 0.090052229 | 0.090052229 | 0.090052229 |
| Surface Dissolved P due to Fert. App. (lb/A) | 0 | 0 | 0 |
| Surface Dissolved P due to Man. App. (lb/A) | 0 | 0 | 0 |
| Total P Loss (lb/A) | 5.137710454 | 1.940077795 | 3.538894124 |

| Combined Samples | CY 1-A | CY 1-B | CY 2-A | CY 2-B | Rotation Average - A | Rotation Average - B |
|---|---|---|---|---|---|---|
| Erosion (t/a/yr) | 1.301734254 | 6.660321835 | 0.726335631 | 1.828199706 | 1.014034942 | 4.24426077 |
| Soil Tillage Intensity Rating (STIR) | 5.475 | 109.475 | 3.0375 | 3.0375 | 4.25625 | 56.25625 |
| Mehlich 3 P (ppm) | 49.74285714 | 49.28571429 | 49.74285714 | 49.28571429 | 49.74285714 | 49.28571429 |
| Surface Particulate P (lb/A) | 1.121306383 | 4.653666902 | 0.723911635 | 1.440927495 | 0.922609009 | 3.047297199 |
| Tile Particulate P (lb/A) | 0.228778565 | 0.228039997 | 0.228778565 | 0.228039997 | 0.228778565 | 0.228039997 |
| Surface Dissolved P (lb/A) | 0.148740756 | 0.165951326 | 0.147761605 | 0.181058074 | 0.148251181 | 0.1735047 |
| Tile Dissolved P (lb/A) | 0.090766262 | 0.090052229 | 0.090766262 | 0.090052229 | 0.090766262 | 0.090052229 |
| Surface Dissolved P due to Fert. App. (lb/A) | 0 | 0 | 0 | 0 | 0 | 0 |
| Surface Dissolved P due to Man. App. (lb/A) | 0 | 0 | 0 | 0 | 0 | 0 |
| Total P Loss (lb/A) | 1.589591967 | 5.137710454 | 1.191218067 | 1.940077795 | 1.390405017 | 3.538894124 |

**Sample Analysis**

1. Compare the values in the chart above. Which rotation and management strategy results in less P loss? What activity accounts for the difference?

2. If the field is 85 acres, how much P is lost over the course of each two-year rotation?

3. What advice would you give a farmer about how to reduce their P loss? Describe your advice in terms of a claim (what action should be taken), evidence (data as a result of action) and reasoning for the action (science behind the data).