

Phosphorus Management Practices

Phosphorus (P) movement in fields occurs mostly from soil erosion and surface runoff. The rate of movement is influenced by factors including topography, soil mineralogy, pH, erodibility, infiltration, amount & intensity of rainfall, cropping systems, and the presence or absence of soil conservation practices. All fields do not contribute equally to phosphorus losses on a farm.

Phosphorus from agricultural sources can enter water bodies in either or both of two forms (1) dissolved phosphorus in runoff comprised mostly of (inorganic) orthophosphate which is immediately available for uptake by algae in water, and/or (2) particulate phosphorus attached to sediment-bound (soil and organic matter) particles. Though not immediately available for plants, it can be a long term source of P for aquatic growth.

To fully assess the environmental risk of phosphorus transport to water bodies requires information that, at present, is not readily available. While additional research will lead to better forecasts, the following practices are already known to curtail phosphorus losses:

- Establish and maintain buffer strips at the point where water leaves the field.
- Minimize water erosion and the off-site transport of sediment.
- Incorporate or inject manure where possible without destroying crop residue levels for erosion control.
- Match manure nutrient applications to crop needs. This will minimize the potential for excessive soil test phosphorus build up.
- Grow high yielding, high phosphorus removing crops on fields with already high soil test phosphorus to reduce test levels.

Following is a partial list of practices proven to reduce nutrient loading to water bodies:

Tillage

Reduced Till

No-Till

Vegetative

Filter Strips

Windbreaks

Riparian buffers

Field Borders

Contour Farming

Stripcropping

Structural

Grassed Waterways

Terraces

Diversion

Grade Stabilization Structure

Sediment Retention Dam