



# AEM Tier 2 Worksheet

## Fertilizer Management

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### Glossary

**Appropriate Soil Test Lab:** A lab that makes fertilizer recommendations for NY which are based on a research program that continuously calibrates its recommendations.

**Current Soil Tests:** A soil test taken within the past three years.

**Distance of the Flow Path:** The length runoff water can flow over any watercourse, excluding any length the water flows over a non-vegetated surface.

**Eutrophication:** The process of nutrient enrichment and basin-filling of a lake.

**Fertilizer:** Any organic or inorganic material of natural or synthetic origin which is added to soil to supply plant nutrients.

**Waterbody:** A lake, reservoir, pond, river, continuously-flowing stream, continuously-flowing spring, wetland, estuary or bay.

**Watercourse:** Water flowing over a non-vegetated channel to a waterbody.

### Background

Fertilizer management based on soil tests, realistic crop yields and crop nutrient needs can enhance crop productivity and farm profitability while decreasing fertilizer costs. Proper fertilizer application method, rate, and timing maximize the uptake of nutrients by the crop and minimize nutrient loss to the environment.

Nutrients in fertilizers can leach to groundwater or be carried by runoff into surface water, degrading water quality. Excessive nitrate concentrations in drinking water can negatively affect human and animal health. Phosphorus transported to surface waters can cause blooms of algae and eutrophication. Excess potassium in feed or water can cause animal health problems.

A sound and comprehensive nutrient management plan should account for nutrients from prior land use practices and manure applications, incorporate conservation practices that control erosion and manage runoff, and address fertilizer storage, equipment calibration and record keeping.

### Agricultural Water Quality Principle:

Plant nutrients should be applied so that rate, timing and method of application enhances optimum economic returns while protecting water quality.

<b>AEM Tier 2 Worksheet: Fertilizer Management</b>		<b>Potential Concern</b>		
<b>Factors Needing Assessment:</b>	Lower 1	2	3	Higher 4
<b>What is the rate of application?</b>	Fertilizer rate is recommended by an appropriate soil test lab. <b>AND</b> Soil tests are current. All other nutrient sources are accounted for (i.e.-crop residues and manure). <b>AND</b> Proper soil pH is maintained.			Fertilizer rate is not based on soil tests. <b>OR</b> Other nutrient sources are unaccounted for. <b>OR</b> Proper pH is not maintained.
<b>What is the timing of application?</b>	Nutrients are applied as close to the period of maximum nutrient uptake as possible.			Fertilizer is applied during the non-growing season.
<b>When and how is fertilizer applied to row crops?</b>	Some of the nitrogen (except for legumes) and most, if not all, of the phosphorus is placed in a band-placed starter fertilizer.			All fertilizer is applied pre-planting.
<b>How is application equipment maintained?</b>	All fertilizer application equipment, including planters, is well-maintained and calibrated annually.	All fertilizer application equipment, including planters, is well-maintained, but is calibrated less than annually.	All fertilizer application equipment, including planters, is well-maintained but not calibrated.	Fertilizer application equipment is not maintained or calibrated.

<b>AEM Tier 2 Worksheet: Fertilizer Management Continued</b>		<b>Potential Concern</b>		
<b>Factors Needing Assessment:</b>	<b>Lower 1</b>	<b>2</b>	<b>3</b>	<b>Higher 4</b>
<b>What is the distance of the flow path from fertilizer storage to the nearest surface waterbody or water well?</b>	Greater than 500 ft. <b>OR</b> None stored on the farm.	200 – 500 ft.	100 – 199 ft.	Less than 100 ft.
<b>What type of fertilizer storage facility is used for dry formulations?</b>	Weatherproof storage on impermeable floor (i.e. – sealed concrete).			Non-weatherproof storage on a permeable floor (i.e. – gravel or dirt).
<b>What type of fertilizer storage facility is used for liquid formulations?</b>	Impermeable secondary containment (i.e. – curbs or dikes present to contain leaks).	Secondary earthen containment exists. Most of spill can be recovered.		No secondary containment exists. Spills cannot be contained.

## Other

1. Do you have a nutrient management plan for your entire farming operation?

Does it meet NRCS Standards and/or Cornell recommendations?