

# SMART Nutrient Management

## Save Money and Protect Water Quality



### Did You Know?

- ▶ **You could save an average of nearly \$30 per acre on fertilizer costs with a Nutrient Management Plan.**

Fertilizer costs have more than doubled over the past year. Implementing a Nutrient Management Plan (Natural Resources Conservation Service (NRCS) Conservation Practice Standard 590) on acreage receiving excess nutrients can **save anywhere from \$23.77 to \$49.76 per acre – that’s an average of about \$29.28/acre in net savings** (according to USDA data as of April 2022). A Nutrient Management Plan is a document showing how you should manage nutrients to maximize their economic benefits while minimizing their environmental impacts.

- ▶ **USDA is increasing assistance for nutrient management practices, including precision agriculture.**

This includes streamlining the application process for certain NRCS conservation programs, using existing tools, and standing up new initiatives to expand the availability of nutrient management assistance for producers. Visit [farmers.gov/global-food-insecurity](https://farmers.gov/global-food-insecurity) to learn more.

- ▶ **Your crops may not need as much fertilizer as you think. Test to be sure.**

Your soil may already have many of the nutrients your crops need – particularly if you utilize organic nutrients such as animal manures or compost, plant cover crops or practice conservation tillage, no-till, or other soil health practices. Testing your soil, organic nutrient source, and plant tissue, and applying nutrients according to the soil or crop needs, saves you money on fertilizer and improves water quality.

- ▶ **All types of operations can benefit from nutrient management planning.**

All types of operations can save money on fertilizer costs with nutrient management planning. Many of the tools for nutrient management planning don’t require a big investment. Using methods like soil and organic nutrient source testing, in-season plant tissue testing, spreader calibration, enhanced efficiency fertilizer products and split application are some of the low-cost ways to better manage your nutrients.

### What is Nutrient Management?

It’s the management of nutrients and soil amendments to maximize their economic benefit while minimizing their environmental impact. Proper nutrient management considers several factors when applying commercial fertilizers, manure, soil amendments, and organic by-products to agricultural land while also addressing associated risk of applying nutrients in protecting local air, soil, and water quality.

### SMART Nutrient Management Planning

A SMART Nutrient Management Plan includes the 4Rs of nutrient stewardship (the **right Source, right Method, right Rate** and **right Timing**) and emphasizes smart activities to reduce nutrient loss by **Assessment** of comprehensive, site-specific conditions.

### Get Assistance with Nutrient Management Planning

NRCS, a Technical Service Provider (TSP), or a Crop Consultant can help you develop a site-specific nutrient management plan for your farming operation. Contact NRCS at your local USDA Service Center for assistance in obtaining and implementing a nutrient management plan at [farmers.gov/service-center-locator](https://farmers.gov/service-center-locator).



Source

### WHAT TYPE OF NUTRIENTS SHOULD I USE?

- Choose the right nutrients for your crop and current soil nutrients.
- Choosing commercial fertilizer or manure depends on whether your crop is ready to take nutrients immediately (crops are already growing) or needs a delayed uptake (seeds were just planted).
- Choosing the right type of nutrients also depends on what type of nutrients your soil or plant already contains, which is one reason why testing is so important.



Method

### HOW AND WHERE SHOULD I APPLY?

- Place nutrients near the root zone where the plant can easily access them.
- Specific sites may require nutrients to be incorporated into the soil to reduce the risk of nutrient loss in runoff events. In conservation tillage or no-till systems, nutrient placement with the planter or injection via a no-till, low disturbance application tool are effective methods for nutrient incorporation.
- If a broadcast method is utilized, some sites may benefit from a low intensity incorporation of manure or fertilizer following the application.
- If incorporation or injection are not practical, combine in-field conservation practices with edge-of-field practices to reduce nutrient losses.



Assessment

### WHAT ARE THE SITE-SPECIFIC CONDITIONS?

- A certified nutrient management planner can analyze your site-specific land conditions, perform a nutrient loss risk assessment (including for runoff or leaching losses at areas within the field) and draft a nutrient management plan that is tailored to your land.
- Nutrient management should assess your other management and conservation practices (such as cover crops, no-till, or conservation tillage) and their effect on nutrient requirements, utilization and loss.
- Testing and analysis can tell you what nutrients are already present in the soil, soil amendment, or plant to determine what nutrients are needed.



Rate

### HOW MUCH DO I NEED?

- Many factors affect the amount of nutrients you need, so testing is the best way to find out. Have your soil, organic nutrient source, and plants tested so you know whether you need to add nutrients and how much.
- If you are practicing conservation tillage or no-till, cover crops, or other soil health practices, your soil may not need as much fertilizer as you think, because those practices naturally increase soil organic matter and soil biological processes, making more nutrients available for your crops.
- Variable rate application technology can improve nutrient efficiency by delivering appropriate amounts to the specific needs of varying soil and crop conditions across the field.



Timing

### WHEN SHOULD I APPLY?

- Nutrients should be applied when the crop demand is highest, but weather, seasonal conditions and other factors should also be considered.
- Split time of application (side dressing) and advanced technologies can be used to more precisely time nutrients for efficient crop uptake.
- Precision guidance systems allow you to apply fertilizer to actively growing crops.