

SECTION 2

NUTRIENT MANAGEMENT PLANNING FOR YOUR FARM

Nutrient management planning is the concept of planning your nutrient inputs to meet the nutrient needs of the crops you have on your field/pasture in an economically and environmentally beneficial way. What is the purpose of nutrient management planning? The goal of a nutrient management plan (NMP) is to apply crop nutrients in a way that will achieve agronomic yield while at the same time, protect the environment.

What do nutrient management plans consist of? The answer is “it depends.” Every NMP is farm and field specific. The nutrient application rate will vary from field to field, even on the same farm. How do you determine the rate of nutrient application to your fields and why is it important to apply nutrients at the correct rate needed by the crop? First, it makes economic sense to only apply the needed nutrients because of the high cost of fertilizers. Secondly it’s environmentally responsible to balance inputs and outputs on your fields and pastures. If nutrients are over applied, there is an increased risk of nutrient loss into surface water bodies which leads to water quality problems. And let’s face it, if your fertilizer is washed off into the creek, that’s money down the drain. The tool to assist you in making sound economic and environmental decisions is your nutrient management plan.

Nutrient management plans are required on larger animal feeding operations but are useful on all farming operations, regardless of size. Perhaps the simplest form of a NMP is a soil test report which will give you a snapshot of what nutrients are currently available in your soil for crop uptake and what nutrient deficiencies you may need to supplement for with chemical or organic fertilizers. Chemical fertilizers can be purchased and blended to meet the nutrient needs of the crop very closely. The likelihood of over application of nutrients when using chemical fertilizers is less than with organic fertilizer as it is not economically feasible to over apply purchased nutrients.

In addition to applying nutrients at rates recommended by your soil test, proper timing of application is also critical. Nutrients should be applied when the nutrients are needed by the crop and when weather conditions are favorable. Again, it boils down to economics: the more time there is between when nutrients are applied and crop demand, the higher the risk of losing some of those nutrients from the system which may significantly impact yield. Also, if the ground is frozen, covered in ice or snow, hydraulically saturated, or if a rainfall event is forecasted within 24-48 hours, the risk of losing those nutrients, along with your money, is higher.

When using organic fertilizers such as animal manure or compost, nutrient management plans become more complex. Since livestock does not provide us with a perfectly blended manure fertilizer, it becomes a balancing act to try to achieve the needed amount of nutrients such as nitrogen (N) without over applying other nutrients such as phosphorus (P). In nutrient management plans where organic fertilizers are used, additional steps are taken to put management decisions in place to keep applied nutrients on the land and out of the water.

There are several parameters that must be known and management decisions to be made for each individual field before a nutrient management plan can be developed including: what crop(s) will be grown in that field for a full year; what plant available nutrients are already in the soil (soil test); what additional nutrients need to be applied to achieve desired yields (soil test report recommendations); what is the nutrient content of the fertilizer source (manure tests); and where are environmentally sensitive areas located (wells, creeks, lakes, drainage ditches, sink holes, etc.).

Once these decisions are made, this information is used to determine the risk of P loss from each field. This is done using a tool call the Georgia Phosphorus Index. This tool has 3 main inputs: Phosphorus source (P source), Phosphorus transport (P transport), and best management practices (BMPs). P source is where the phosphorus is coming from, which includes phosphorus already in the soil and in all fertilizer sources (both organic and chemical). P source also takes into consideration how fertilizer nutrients are managed and applied. P transport factors include things that affect the movement of phosphorus across the landscape such as soil characteristics, topography, ground cover, depth to water table, etc. Last, but not least, are BMPs. BMPs are practices put in place to reduce the transport of nutrients to surface water such as filter strips, riparian buffers, fencing surface water, etc.

So how do you get a nutrient management plan for your farm? NMPs are not that complex and on unregulated operations, you can do them yourself. There are numerous entities that can help you complete a NMP for your farming operation including the Georgia Soil & Water Conservation Commission, the Natural Resources Conservation Service, the UGA Cooperative Extension Service and private consultants who have been certified as nutrient management planners. However, the key to successful nutrient management planning is for you, as the farmer/operator, to play a very active role as the plan is being developed. It is also important to remember that these are not static documents. NMPs are very useful in helping you determine what is and isn't working on your farm. So keep records and modify your plan and farm management as needed to achieve both economic and environmental improvement over time.



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