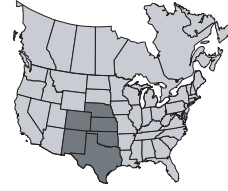


NEWS & VIEWS

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High Fertilizer Prices: What to Do?

RECENTLY, fertilizer prices have been higher and supplies of some nutrients have been tight. Yet most realize, and research continues to confirm, the critical role of fertilizer use in profitable crop production. The result: an increased emphasis on efficient use of nutrients that helps accomplish grower goals. Here are some suggestions for keeping fertilizer bills as low as possible without compromising the yield that brings much needed profit.

Account for Nutrient Supplies Already in the Soil

How much of each nutrient do you currently have in your soil? Take advantage of what's already there. When fertilizer costs increase and supplies tighten, soil test results provide the best guidance for deciding which nutrients should be applied and how much of each to use. If soil test levels of phosphorus (P) and potassium (K) are high, there is little chance that an economic response to these nutrients (beyond a starter band) will occur in the year of application. In such cases, producers can take advantage of existing soil nutrient supplies. However, this approach must be done with the understanding that supplies will need to be replenished later to avoid future nutrient deficiencies and associated revenue losses.

Taking nitrogen (N) credits for previous crops is an important part of buying only what's needed. Many people also forget that with some crops, like alfalfa, lower N application rates may be justified for crops planted up to 2 years after plow-down.

An often overlooked, but effective tool is the soil nitrate test. This test helps producers account for the nitrate already present in their soils. If levels are high enough, freshly applied N rates can be reduced...in some cases substantially. This test is particularly useful where manure applications have been made, yields were poor, or growing conditions were dry. The test is especially appropriate after drought.



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Account for Nutrient Supplies on the Farm or Nearby

If you have access to manure, whether it's from a feedlot, dairy, or your own operation, use it as effectively as possible. The current economic and supply conditions may increase the justifiable distance that manure can be hauled. Also be sure and check the nutrient content of the manure and the rate at which it is applied, so you can calculate how much of each nutrient is being put on. If spreader calibration and manure testing have seemed too time consuming or too expensive to deal with in the past, there is no better time than now to reconsider.

If manure application equipment is dated, it may be time to run the numbers and see if updated equipment can be justified. In some cases, manure application rates can be reduced and still meet crop needs, allowing manure to be a nutrient source on more acres. It's also a good idea to record the places within a field where manure is applied. This can be accomplished with flags or global positioning system (GPS) receivers and software.

Time Nutrient Applications for Highest Efficiency

Spring N applications provide N at a time closer to crop need, reducing the chances for N loss. However, spring applications can also carry higher logistical risks, since conditions may be wetter than the fall. In some areas, fall N applications can be effective if they are made when soil temperatures drop below 50 degrees (F) and remain there. Nitrification inhibitors can also reduce or eliminate N losses from fall to spring.

Splitting the total N rate across various times in the season can increase N recovery by the crop. Several options exist. A pre-plant application combined with an in-season sidedress application is common for crops such as corn and cotton. Multiple applications of N through center pivot or drip irrigation is an excellent option where available.

Whenever possible, manure applications should be made close to the time of crop need...usually in the spring.

Place Nutrients for Greatest Efficiency

Generally, banded nutrient applications provide higher first-year recovery of applied P and K than do broadcast applications. Consequently, some universities suggest rate



reductions when nutrients are applied in this manner. If short-term economic decisions dictate banding P and K at rates less than those of crop removal, producers and advisers may want to build in a plan for replenishing soil nutrient supplies in the future, when economic conditions improve. In fields with longer-term management strategies, a combination of a banded application with a broadcast application has the best chance for maximizing yields. Bands placed near the seed provide early season access to nutrients, while overall higher fertility levels in the bulk soil provides access to nutrients by the whole root system later in the season. This approach has worked well for both corn and wheat. Soybeans generally respond best to broadcast applications, but some research in ridge-till and no-till systems shows soybeans to be quite responsive to banded applications.

Allocate Money to the Right Nutrients

In times like these, many emphasize that N needs must come first. Before jumping to this conclusion, soil test levels of a field or field area must be examined. In the worst case, it may be found that N, P, and K are all in short supply. When this happens, crop response to any single nutrient will be limited if only that nutrient is applied. For instance, when P levels are low, the plant has a reduced supply of stored energy. Without enough energy, the plant is not effective in absorbing limited soil N, P, or K supplies. In such cases, if recommended rates of each nutrient cannot be afforded, it is best to apply at least some of each nutrient, rather than focus on one nutrient alone. As an example, banding low rates of P near the seed can provide additional energy needed by the plant to help it take advantage of K and N. This balanced approach will maximize the effectiveness of all applied nutrients.

Prioritize Fields and Areas Within Fields

Allocating nutrient funds across the farm should be based not only on soil tests but also on economic evaluations of each field or field area. What is the break-even cost of production for each field in a farming operation? Which fields consistently make money, which ones are hit or miss,

and are there some that are just a drag on the business? Spending time looking at how fields have performed over time may help farmers and advisers focus resources on the money makers. The goal of such an analysis is to ensure that consistently profitable fields have the nutrients they need to maintain production and revenue levels. With the advent of precision agriculture, this evaluation can be brought to a higher level of resolution, extending the concepts to areas within a field, rather than the entire field.

Examine Yield Goals

Since many nutrient recommendations are based on yield expectations, setting realistic yield goals is important. One way to set realistic expectations is to look back at previous years' performance, to get an idea of what typically happens, given specific levels of crop stress. Averages of several years of yields are often useful guideposts in establishing appropriate goals.

Re-examine the Basis for Nutrient Recommendations

Are your nutrient recommendations based on the best science available? University research and publications generally set the standard for science-based nutrient management decisions. How do currently-used recommendations compare to these? If modifications or different approaches are being used, is there good information behind them? It may be time to look at the most recent scientific information, like university guidelines, to see how current management practices compare.

Summary

When funds are limited and supplies are tight, it is paramount that nutrients be used as efficiently as possible to accomplish grower goals. Efficient use is possible only when informed decisions can be made. **Keeping soil test information up-to-date, identifying profitable fields or field areas, using all nutrient sources available, and adopting nutrient management practices grounded in proven scientific principles assure the greatest chances for success.** ■

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Looking for More?

For additional information and tools related to decision-making on fertilization and cost concerns, visit our website at www.ppi-ppic.org.



An article titled "Nourishing the 2006 Crop... Will We Get It Done?" by PPI Senior Vice President and North American Program Director Dr. Paul Fixen addresses the current concerns about fertilizer prices and cost cutting. There is also a folder at the website called "Fertilizer Economics for 2006... Tools for Management", which has information on various regions and cropping systems.