

Fertilization for the 2009 Crop in Light of the 2008 Growing Season

The 2008 growing season will not soon be forgotten. The prolonged wet and cool conditions in the spring made it challenging to get crops planted. Acres that were planted early and didn't drown with the later rains are doing well. Other areas had to be replanted or planted late. Yet another challenge was the crusting of soil surfaces in some areas and the large variability in crop emergence. Many acres were "mudded in," creating compaction and variability in the growth of the crop. Finally, topographic position in the field also made a large difference for crops this year. Crops planted in uplands and side slopes are generally looking better than those in low-lying areas. All these factors will undoubtedly contribute to significant yield variability and equally variable nutrient removal.

As we start to plan fertilizer programs for the 2009 crop year, there are a few points to keep in mind. Due to the large in-field variability that is already evident, or will become evident once yields are determined, we can expect to see areas of the field where "typical" removal of phosphorus (P), potassium (K), and other nutrients has occurred, while in other areas, where yields were lower, less nutrient removal will likely take place. Regardless of the yield, with the high rainfall amounts we had this year, it is unlikely that there will be much nitrogen (N) carryover, if any, for the following crop. This is especially true for low areas of the field that were flooded and where N was more susceptible to be leached or denitrified. Likewise, in coarse-textured (sandy) soils, some K and sulfur may have been lost through leaching during the wetter-than-normal spring. Except for those very specific soils, though, K (as well as P) that was not used by the crop in 2008 can be expected to be available next year.

Traditionally, fertilizer rates are established on the basis of soil test information and the average yield across a field. This year, due to the variability in nutrient removal, using variable rate technology along with yield data and updated site-specific soil sample information may be one of the best options for guiding fertilizer applications and minimize overall fertilization costs for the 2009 cropping season. An easy and practical way to calculate P and K removal from yield by the crop in a given area is by multiplying the yield monitor data (in bushels) by the amount of nutrient removed per bushel. A corn crop typically removes 0.43 pounds of P_2O_5 and 0.28 pounds of K_2O per bushel of yield, while a soybean crop removes 0.85 pounds of P_2O_5 and 1.30 pounds of K_2O per bushel of yield. These values will be consistent regardless of how high or low the yield of the crop might have been.

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ADDITIONAL THOUGHTS:

Regardless of the growing conditions on your farm this year, if you farm fields with variable soil types and/or variable yields, the concept of applying variable rate fertilizer based on yield results rather than soil types is an idea worth considering. As you strive to maximize the benefit of your input dollars it makes sense to apply a higher rate of fertilizer where you harvested the highest yield, not on the poorest soil, where you probably harvested the lowest yield. Visit with your Michlig Ag crop consultant about this concept and our ability to VRT apply fertilizer to maximize the effectiveness of your investments.

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