

UNDERSTANDING THE NEED FOR PHOSPHORUS AND POTASSIUM

I've spent nearly 40 years promoting sound nutrient management planning, and I still can't figure out why it is so difficult for some folks to accept the fact that phosphorus (P) and potassium (K) are essential to successful crop production.

Along with nitrogen (N), P and K are called 'primary' nutrients because plants require them in large quantities. Most soils can't supply enough P and K to meet the needs of high yielding crops without supplemental fertilization. Agronomically, they are essential. Economically, they can make the difference between farmer profit and loss.

There are several factors farmers and their advisers should consider when developing P and K fertilization plans and deciding the appropriate rates to use.

- **As long as crops are responsive to P and K**, crop and/or fertilizer price makes little difference in the amounts that should be applied. Cutting back or cutting out P and K use results in lost yields and profits.
- **Although N is usually the first limiting nutrient** for crops such as corn, wheat, and cotton, it doesn't work in isolation. Science-based P and K fertilization, in balance with N, results in increased N use efficiency. In other words, the crop is able to use a higher percentage of applied N.
- **In addition to boosting N use efficiency**, P and K protect the environment. By helping to increase the amount of N getting into the crop, they help keep soil N levels lower, reducing the potential for damage to groundwater quality from excess soil nitrate-N.
- **Adequate P and K also contribute to improved crop quality, as well as overall improved crop health.** Quality is becoming a more important aspect of food production as its relationship to human health and disease suppression is better understood.

This fall is an ideal time to commit to a more cost effective, profitable, and environmentally friendly nutrient management plan. That plan should include the proper use of P and K. Begin its implementation by arranging for soil samples to be taken and analyzed this fall and winter. **Only then will you be able to begin to understand the importance of P and K in crop production.**



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