



Agri-Facts[®]

Where will soil fertility levels be after the 2009 growing season?

Fluctuating crop prices, high fertilizer prices, and weather that prevented application has caused growers to cut back on fertilizer applications. In fact, in 2009 growers applied nearly 50 percent less potassium and cut phosphorus by 20 to 30 percent. While the 2009 crop has yet to be measured, yields have been excellent the past three to five years. This has been possible because crops have been able to draw nutrients from the soil bank. But drawing on reserves can't go on forever. Just where will soil fertility levels be after the 2009 growing season?

This summer, the International Plant Nutrition Institute (IPNI) released information which evaluated the average soil nutrient balance for phosphorus (P) and potassium (K) on a county-by-county basis. The report compares the soil nutrient levels of P and K added through commercial fertilizer and manure to the amount of these nutrients removed in harvested grain from 2006-2008. The IPNI information shows many areas were at or below the critical level for these key nutrients even before the fertilizer cut backs of 2009.

To optimize yields, particularly when new, high-yielding genetics are involved, fertility levels must be maintained. And, to do so, it will be important to conduct soil tests immediately after harvest to find out exactly where soil nutrient levels are for each field.

A soil test is an important investment because it helps compare the soil nutrients available to what the crop needs to reach the desired yield goal and yield potential. This information also should be used to properly balance the entire nutrient profile – that means N, P and K, then important micro nutrients such as sulfur and zinc.

Proper nutrient balance is important because K interacts with essential plant food nutrients to 'regulate' many essential plant processes. Without K, plants can't optimize uptake of available N. So, the money spent on N may be wasted.

Likewise, adequate P is necessary for higher yields and improved grain quality because P also improves the plants' ability to use all available nutrients. Without adding P fertilizers to balance nutrition, plant uptake of N is reduced. Again, nitrate levels in the soil increase, and some of the investment in N is lost.

Planning for the 2010 crop will be underway soon. Soil testing to determine the soil nutrient levels along with careful attention to proper ratios of key nutrients will help ensure the fertilizer applied is available to and used as efficiently as possible by the crop.

For more information on soil testing, properly balancing soil fertility and plant nutrition, visit www.Back-to-Basics.net.

Dan Froehlich, Ph. D.
Director of Agronomy
Mosaic Company
3033 Campus Drive, Suite E490
Plymouth, MN 55441
Telephone: (763) 577-2800
Fax: (763) 577-2978
Cell: (612) 730-1210
E-Mail: dan.froehlich@mosaicco.com