



Laboratories, Inc.

Duane Schlieman, Agronomy Services

New Ulm, MN Nevada, IA Bismarck, ND

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Fertility Trends

There are many variables that influence changes in soil fertility. Our seasonal growing conditions along with soil-type, drainage, and management are often dominant factors in crop production. Likewise, the increases in corn production will place added demand on our soil nutrient reserves, and over time, have potential to impact our crop health.

The graphs off to the right illustrate the overall trends at MVTL since 2003. The bars represent the percent of soils that are very low (blue), low (red), medium (yellow), high (aqua), and very high (purple) according to university guidelines. For example, the purple bar represents soil test data that's considered very high, plus, shows a 10% drop in potassium and zinc levels from 2006 into 2007.

Droughty conditions can readily impact the availability of soil nutrients, and we often see this with lower K (and other micronutrients) levels in our clay soils. Secondly, consecutive years with high crop nutrient removal may also be showing signs of impacting our overall nutrient reserves. Third, fertilizer prices have been higher, and therefore, *some* applications have been reduced to help control input costs.

Good fertility management becomes *most* recognized under extreme conditions, and the 2007 crop observations support this. Crop health goes hand in hand with good fertility.

Mineralizable-N:

MVTL will continue to work with ongoing "Mineralizable-N" studies using the PBN (Phosphate-borate) test to estimate N supplying capabilities. Soils have varying degrees of (available) mineralizable-N, and again, we expect to see soil-type, drainage, and management history have a direct impact. Though organic matter alone may have a relationship to the total nitrogen trend, it has proven to be an unreliable indicator of mineralization since only 2-5% of the organic matter is actually mineralized through the growing season. The ability to measure and quantify these levels of mineralizable-N can be a good management tool-along with nitrate tests.

