

Fertilization Facts— Fall 2002



Soil Test Summary Shows Need for Increased Soil Sampling – Why Not This Fall?

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THE SUMMARY OF OVER 2.5 MILLION SOIL SAMPLES collected in fall 2000 and spring 2001, assembled by the Potash & Phosphate Institute (PPI) with the cooperation of the majority of public and private soil testing laboratories, provided an overview of the current pH, phosphorus (P), and potassium (K) fertility status in North America. Several key points emerged from the summary.

- The percentage of soil samples testing medium or lower in P and K is increasing in several important farming states and provinces.
- Crop P and K removal is exceeding inputs in many fields.
- There is a greater need to identify crop, pasture, and forest acreage requiring improved nutrient management through increased soil sampling.

In several regions, soils have been “mined” of nutrients for several years, to the point that they may be incapable of supplying P and K at rates required for efficient plant uptake and profitable production. If a farmer does not have recent samples (last two to three years), or if past samples are of questionable quality, then this fall would be a good time to focus on collecting quality soil samples to represent individual farm management units.

The PPI soil testing summary showed that sampling intensity (A/sample) varied greatly among geographic regions, and was probably related to farm size, field size, and crops grown (**Figure 1**). Based on the PPI summary report (which did not include all soil samples collected):

- The North American average was about 166 A/sample
- The highest sampling intensity was in Georgia, New Hampshire, and North Carolina at 22 A/sample
- The lowest sampling intensity was in Wyoming at nearly 3,000 A/sample
- Some leading corn or soybean states had sampling intensities ranging from 66 to over 100 A/sample.

Site-specific or precision agriculture technologies have been increasingly used to geo-reference soil

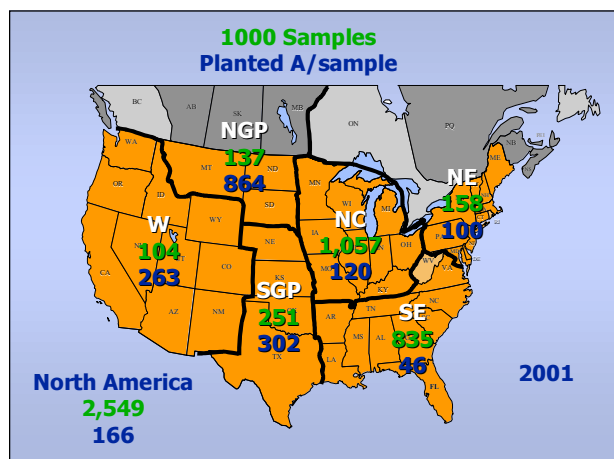


Figure 1. Soil sampling density in the 2001 summary (from *Soil Test Levels in North America—Summary Update*. 2001. PPI/PPIC/FAR).

samples in recent years, such that an individual sample may represent no more than about 2.5 A/sample. In spite of this tendency, **Figure 2** illustrates that many farmers and crop advisers can improve their sampling intensity to better characterize soil fertility levels and crop fertilization needs.

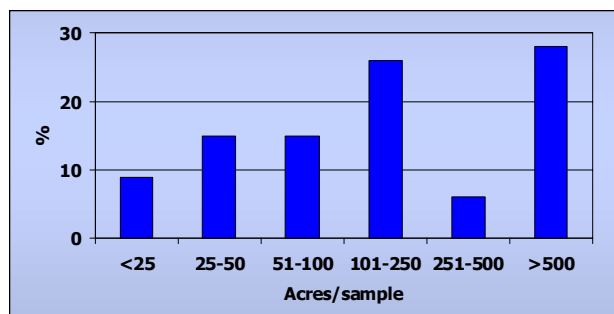


Figure 2. Frequency distribution of soil sampling intensity in North American states and provinces during fall 2000 and spring 2001.

Quality in soil sampling, soil analysis, and recommendations is more important now than in the past because of increased global competition, a stressed farm economy, and the need for heightened environmental stewardship. We have the opportunity to:

- make significant improvements in our sampling intensity and sample quality;

- identify yield-limiting nutrient levels in many fields and sub-field areas;
- improve the prioritization of nutrient inputs where they will be most cost-effective;
- and identify field areas where no further nutrient inputs may be presently needed, to enhance environmental stewardship.

This fall would be a great time to take crop, pasture, and forest nutrient management to the next level through improved soil sampling. Plan to collect quality soil samples to ensure your crops get the nutrients required for the maximum crop output and the lowest cost per

unit of production. Consult your crop adviser, soil testing lab, or Land Grant university for specific guidance in collecting and submitting samples for analysis. ■

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