AGRI-BRIEFS
AGRONOMIC NEWS ITEMS

From Agronomists of the
Potash & Phosphate Institute (PPI)
655 Engineering Drive, Suite 110
Norcross, Georgia 30092-2843 USA
Phone (770) 447-0335

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RECORD YIELDS MEAN RECORD NUTRIENT REMOVAL IN CORN-SOYBEAN ROTATIONS

Harvest in 2004 was marked by record-breaking yields in many areas of North America. State-average yields were up more than 50% in some areas of the country. Nationally, corn yields were up nearly 13% from last year, while soybean yields in 2004 were over 25% higher than in 2003. These higher-than-expected yields require that nutrient management plans be updated to account for the greater quantities of phosphorus and potassium removed by crop harvest.

The Midwest provides many examples of the impacts of higher yields on nutrient removal this year. In Indiana and Illinois, corn yields in 2004 averaged 10 to 15% higher than 2003, while soybean yields averaged 36% higher. Iowa saw a spectacular 51% increase in soybean yield in 2004. Corn removal rates of phosphorus and potassium ranged, in the Northcentral region, from 46 to 77 pounds of P_2O_5 per acre and 34 to 54 pounds of K_2O per acre. Nutrient removal rates by soybeans in this region were 26 to 43 pounds of P_2O_5 per acre and 46 to 74 pounds of K_2O per acre.

Yields, combined with nutrient removal rates by each crop in 2004 showed, in many cases:

- **soybeans removed more potassium per acre than corn**
- **corn removed more phosphorus per acre than soybeans**

What do these greater nutrient removal rates in 2004 mean to future management decisions?

Here are some tasks that will need to be performed in the coming year:

- Re-calculate historical average yields used in nutrient management planning.
- Re-evaluate soil sampling schedules. Consider sampling fields more often to gain a better sense of how soil test levels are changing over time in response to management practices and seasonal fluctuations in crop removal.
- Consider sampling corn and soybean grain for nutrient content. Doing so will give you insight into nutrient removal rates occurring in your area, under your management practices and environmental conditions.
- Make any needed adjustments in nutrient application rates.

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For more information, contact Dr. T. Scott Murrell, Northcentral Director, PPI, 3579 Commonwealth Road, Woodbury, MN 55125. Phone: (651) 264-1936. E-mail: smurrell@ppi-far.org.

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