

NEWS & VIEWS

A regional newsletter published by the
Potash & Phosphate Institute (PPI) and the
Potash & Phosphate Institute of Canada (PPIC)



Dr. C.S. (Cliff) Snyder,
Southeast Director
October 2006

Improving Wheat Yields with Knowledge of Major Nutrient Requirements

NOT many years ago, soft red winter wheat growers were pleased with yields ranging from 40 to 50 bu/A. Today, they are disappointed if several of their fields do not yield more than 80 to 90 bu/A, or if the farm average yield dips below 60 to 70 bu/A.

Over the past decade or so, average wheat yields in several southeastern states have continued their upward trend because of improved varieties and improved management (**Figure 1**). Most soft red winter wheat growers now expect yields in their best fields to be as much as twice as high as those achieved just a few years ago.

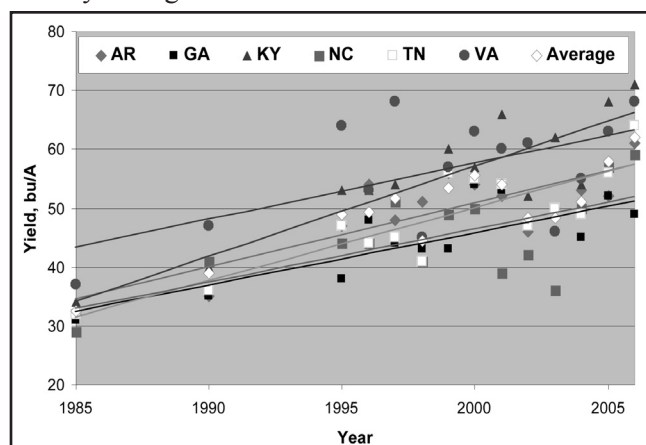


Figure 1. Wheat yields in southeastern states.

University and industry agronomists conducting variety tests and plant nutrition studies have docu-

mented wheat yields above 100 to 130 bu/A in recent years. If wheat yields in these studies---and those yields achieved by progressive farmers---are compared with the recent state average yields, it is obvious there is a large yield gap.

Could inadequate plant nutrition be contributing to part of this yield gap? The only way to be certain that wheat plants receive adequate nutrition is to: 1) start with a good soil sampling program, 2) follow the nutrient recommendations based on the soil test results, 3) use locally or regionally calibrated guidance for appropriate nitrogen (N) rates, sources, and application timing, and 4) follow up with plant nutrient analysis to monitor or evaluate the success of the plant nutrition program.

As farmers work with their crop advisers in planning wheat management programs for the fall of 2006, they may wish to consider the rules-of-thumb for nutrient uptake and nutrient removal by wheat. A 70-bu/A wheat crop may take up over 130 lb of N, 47 lb of P_2O_5 , and 140 lb of K_2O . On average, a bushel of wheat contains about 1.15 lb of N, 0.55 lb of P_2O_5 , and 0.34 lb of K_2O .

Using known nutrient uptake values and average yield data collected by the USDA National Agricultural Statistics Service (NASS) for several southern



Agronomic market development information provided by:
Dr. C.S. (Cliff) Snyder, Southeast Director
Potash & Phosphate Institute (PPI)
P.O. Drawer 2440, Conway, AR 72033-2440
Phone: (501) 336-8110; Fax (501) 329-2318
E-mail: csnyder@ppi-far.org
Website: www.ppi-ppic.org/southeast

states, we can estimate nutrient uptake or nutrient demand. The resulting values demonstrate a sizeable increase in nutrient uptake or demand in the last two decades (**Figure 2**).

As wheat yields have increased in the southern states, nutrient removal has also risen (**Figure 3**). This means that more nutrients have been removed from each wheat field...and from the soil...than in previous years.

These increased yield facts...and the nutrient uptake and removal estimates...clearly illustrate the need to pay close attention to soil fertility and required nutrient application rates.

Growers and their crop advisers should select wheat varieties that are adapted to their soils, crop-

ping environments, and management skills. Then, they should make sure that a successful plan is in place to achieve the goals and to meet the crop's nutrition requirements. Plan to fertilize the wheat crop for success, and implement the nutrient management plan with skilled management to help capitalize on decent wheat prices.

Be effective and efficient in applying plant nutrients this season. Crop advisers, agricultural consultants, and Extension agents can provide more specific soil fertility and plant nutrition recommendations for wheat.

For additional wheat nutrition information, visit the PPI Southeast Region website:

www.ppi-ppic.org/southeast.

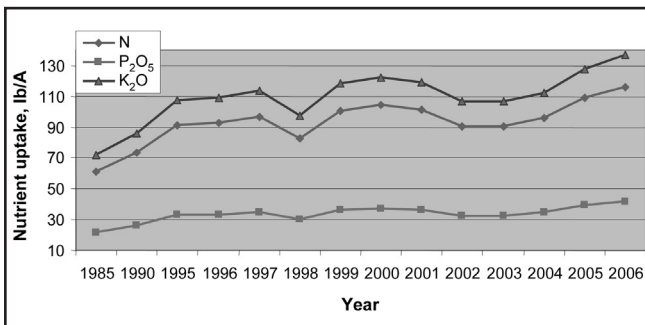


Figure 2. Nutrient uptake by wheat, based on average yields from Arkansas, Georgia, Kentucky, North Carolina, Tennessee, and Virginia.

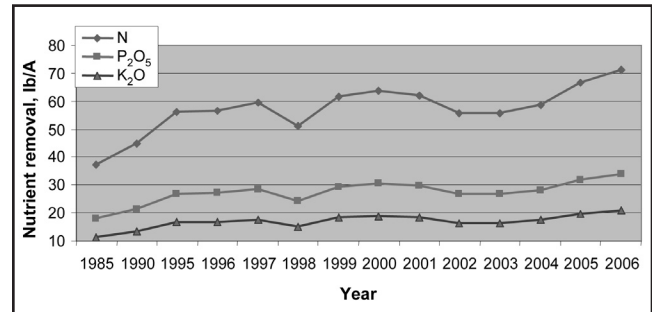


Figure 3. Nutrient removal by harvested wheat, based on average yields from Arkansas, Georgia, Kentucky, North Carolina, Tennessee, and Virginia.

NEWS & VIEWS

Southeast
October 2006

PRESORTED STANDARD
U.S. POSTAGE
PAID
Atlanta, GA 30329
Permit No. 1355



Potash & Phosphate Institute (PPI)
655 Engineering Drive, Suite 110
Norcross, GA 30092-2837