

High fertilizer prices are causing many farmers to ask “do I really need to spread potash and phosphate this year”. The answer to this question is not simple; blindly cutting back fertilizer rates can be detrimental to crop yields and profitability. To determine rates of potash and phosphates to apply this year farmers need to take into consideration soil test levels, previous crop yields, and yield goals for 2006. Soil fertility planning based on soil testing to estimate residual nutrient levels, along with crop removal estimates, will not only move us closer to maintaining long-term soil fertility, but also help us achieve maximum production potential (Johnston, PPI 2002). Soil testing for P and K gives us an indication of the amount of P and K available for plant growth in the soil. According to Tri-State fertilizer recommendations soil tests below the critical level should be considered as indicating a soil that is nutrient deficient for crop growth. When soil test levels are below the critical level, the soil is not able to supply the P and K requirements of the crop. Tri-State critical soil test levels for P are 15 ppm while the critical level for ppm K = $75 + (2.5 \times \text{CEC})$. Soil test levels for P and K should be in the medium to high range to avoid yield loss. Encourage farmers to also soil test for soil pH to ensure pH is around 6.5 to help improve nutrient availability when growing corn and soybeans. We recommend soil sampling every two years. To improve the accuracy of your soil test, we suggest pulling soil samples by soil type. GPS Soil testing according to soil type allows us to more accurately depict the nutrient levels in addition to applying variable rate fertilizer when needed. The use of variable rate technology allows us to apply to proper rates of P and K across the field instead of using blanket recommendation for an entire field.

We need to encourage farmers to consider crop removal rates in addition to soil test levels when they plan their fertilizer programs. Corn and soybean yields are being reported as above average in many areas this year. We also need to take into consideration that record yields were achieved in 2004. According to Tri-State fertilizer recommendations, a bushel of corn removes .27 lb. of K_2O and .37 lb. of P_2O_5 . This year there have been several reports of corn yields near 200 bushel per acre. If the average corn yield was 200 bushel per acre crop removal rates would be 54 lb. of K_2O (90 lb. of 0-0-60) and 74 lb. of P_2O_5 (142.3 lb. of 11-52-0). A bushel of soybean removes 1.4 lb. of K_2O and .80 lb. of P_2O_5 . If the average soybean yield was 50 bushel per acre crop removal rates would be 70 lb. of K_2O (116.7 lb of 0-0-60) and 40 lb. of P_2O_5 (76.9 lb. of 11-52-0). Therefore in two years of above average crops in a corn/soybean rotation crop removal rates may add up to around 200 lb of 0-0-60 and 220 lb of 11-52-0. In summary, before cutting back fertilizer rates take into consideration soil test levels, crop removal rates, and the use of variable rate technology.