

points fell below the target range. The differences between P recommendations and optimum P rates were substantial when P requirements were high.

The University of Idaho has developed a revised P fertility guide for potatoes (**Table 2**). The primary changes included in the revised recommendations are 1) raising the soil P sufficiency level from 15 to 20 ppm NaHCO_3 -extractable P, 2) making the adjustment for percent free lime linear across all lime levels (10 lb P_2O_5 for each 1 percent increase in free lime), 3) recommending a starter application of 80 to 100 lb $\text{P}_2\text{O}_5/\text{A}$, and 4) providing an adjustment for yield goal based on differences in crop P removal.

Figure 2 compares the new P fertilizer recommendations to the results of the CFEP trials. The revised recommendations are in reasonably good agreement

with the optimum P rates. Much of the variability may be due to the fact that the intervals between P rates for most of the trials were greater than 50 lb $\text{P}_2\text{O}_5/\text{A}$. Additional data from on-farm research and traditional small-plot fertilizer trials were also used to validate the revised recommendations.

The CFEP program provides good information that can be utilized to evaluate where we are in soil and tissue test correlation. It is also a means to interact with grower groups and the fertilizer industry in developing meaningful and usable guidelines. The program will continue into the foreseeable future, adjusting to current needs. **BC**

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Alabama: Phosphorus Availability from Phosphate Rock as Enhanced by Water-Soluble Phosphorus

The objective of the study was to distinguish phosphorus (P) availability from the soil, central Florida phosphate rock (PR) and triple superphosphate (TSP) so that P uptake by crops from the PR in the presence of TSP could be estimated. Radioactive ^{32}P was used as a tracer.

Three sets of silt loam samples were mixed with (1) ^{32}P solution and PR, (2) ^{32}P -tagged TSP and (3) ^{32}P -tagged TSP and PR at a 50:50 ratio. Phosphorus rates were 0, 12.5, 25, 50, 100 and 200 parts per million (ppm). An additional rate of 400 ppm was prepared for treatment (3).

Corn and cowpea were planted, then harvested after 42 and 45 days, respectively.

The effectiveness of P source in terms of increasing dry matter yield and P uptake was $\text{TSP} > (\text{PR} + \text{TSP}) > \text{PR}$ for corn and $\text{TSP} = (\text{PR} + \text{TSP}) > \text{PR}$ for cowpea. Uptake of P from PR in the presence of TSP was higher than when PR was applied alone, indicating an enhancement effect on PR uptake by the TSP. **BC**

Source: S.H. Chien, R.G. Menon and K.S. Billingham. 1996. Soil Sci. Soc. Am. J. 60:1173-1177.