



PKalc Software Checks Nutrient Balance

“Toolbox” is a new feature on the PPI/PPIC website which holds downloadable software tools for improved nutrient management.

The newest tool is called PKalc (v.1.12), a simple nutrient balance calculator which helps users determine if phosphorus (P) and potassium (K) nutrient additions are keeping up with removal by crops. It is an Excel spreadsheet which enables development of a multi-year, multi-crop nutrient budget. PKalc was originated as part of a project supported by a grant from USDA-Cooperative State Research, Education, and Extension Service (CSREES), through the Initiative for Future Agriculture and Food Systems (IFAFS).

Users of PKalc input crops grown and yields, plus a list of nutrients added (fertilizer and manure). The program then estimates total crop nutrient removal and calculates total nutrient additions and the resulting net balance of P and K. Default crop removal coefficients can be changed if the user prefers. The estimated net P and K balances are intended to get farmers and their consultants thinking about whether or not fertilization programs are

The screenshot shows the PKalc software interface with three main sections: Additions, Removals, and Balance. Each section contains a table with columns for Date, Name, Source, Rate, Unit, Product quantity, Percent, and Nutrients added. The Additions table shows inputs for Phosphorus and Potassium from various sources like Fertilizer and Manure. The Removals table shows outputs for the same nutrients from crops like Wheat, Soybean, and Corn. The Balance section at the bottom shows the net change for each nutrient, with Phosphorus having a net change of -140 and Potassium having a net change of 40.

meeting goals.

Detailed user instructions are included as pop-up comments within the spreadsheet. A Quick Start Guide and Power Point slide set also provide background information and selected state-level data.

PKalc and other useful programs can be accessed at:

www.ppi-ppic.org/toolbox. **BC**

in petioles than Russet Burbank at any given stage of growth (**Figure 1**). It is possible that its root system is more capable of extracting P from the soil. Petiole P increased with each increment of applied P, particularly in the early season. The two P sources did not differ in their effect on petiole P. The application of P did not affect most processing characteristics, including fry color. It reduced specific gravity slightly, by about 0.001.

In summary, we found that liming can increase tuber Ca and specific gravity, but does not increase P uptake at this soil pH. However, results could differ in soils of lower pH.

Applied P, even under high soil P con-

ditions, can boost yield profitably, without influencing processing quality. The two potato cultivars differed considerably in their response to applied P. The greatest opportunity for improving P utilization lies in genetic improvement and cultivar choice. **BC**

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