

**TABLE 2.** Coefficient of variation for samples collected across the whole field, the hot spot, and the non hot spot areas in each field.

Field ID	CV			Reduction in CV (whole field - non hot spot)
	Whole field	Hot spot	Non hot spot	
	%			
1	112.3	66.2	59.2	53.1
2	190.9	126.6	56.2	134.7
3	116.6	83.3	37.5	79.1
4	107.1	47.7	90.5	16.6
5	58.1	58.3	24.6	33.5
6	57.1	60.2	47.0	10.1
7	114.9	83.1	27.7	87.2
8	75.4	33.1	50.0	25.4
9	90.9	64.5	54.1	36.8
10	58.6	46.0	52.6	6.0
11	69.6	47.0	75.8	-6.2
12	99.4	80.1	87.1	12.3
<b>Average</b>	<b>95.9</b>	<b>66.3</b>	<b>55.2</b>	<b>40.7</b>

field area. However, as **Table 2** demonstrates, they contribute greatly to soil test P variability. When attempting to collect a soil sample, including cores from hot spot areas inflates results beyond what is representative of the majority of the field. Collecting cores only from the less variable non hot spot areas increases

the probability that a representative sample can indeed be collected. It also increases the chances that fertilizer recommendations based on the soil sample will be appropriate for the majority of the field area.

### Conclusion

Reviewing old field photos is useful for determining where farmsteads were and where high concentrations of nutrients are now likely to be. When taking a composite sample, avoiding the collection of cores in close proximity to a farmstead or abandoned farmstead will result in more representative samples and more

accurate fertilizer recommendations. **BC**

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## PKalc Software Checks Nutrient Budgets

**T**oolbox” is a feature on the PPI/PPIC website which holds free downloadable software tools for improved nutrient management.

One useful tool is called PKalc (v.1.13), a simple nutrient budget 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 developing 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 budget of P and K. Default crop removal coefficients can be changed if the user prefers. The estimated net P and K budgets are intended to get farmers and their consultants thinking about whether or not fertilization programs are 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 for free at:

>[www.ppi-ppic.org/toolbox](http://www.ppi-ppic.org/toolbox)<. **BC**