

# PKalc Version 1.13 Quick Start Guide

## I. Adjusting the security level in Microsoft Excel

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1. *Start Microsoft Excel 97, 2000, or XP.*  
In Windows, click **Start | Programs | Microsoft Excel**.
2. *Set security level to medium so that the macros in the spreadsheet can function.*  
On the Standard Toolbar, click **Tools | Macro | Security**. In the Security dialog box, select the **Security Level** tab and select **Medium**.

## II. Customizing PKalc

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1. *Open the PKalc spreadsheet.*  
On the Standard Toolbar, click **File | Open** and locate the file **PKalc version 1.13**. Click **Open**. The **Main** page appears.
2. *Enable macros.*  
Before PKalc opens, a Microsoft Excel dialog box appears. Select **Enable Macros**. This spreadsheet has been proven virus free by Norton AntiVirus using the latest set of virus definitions (4/2003).
3. *Add phosphorus (P) and potassium (K) products.*
  - a. Click the **Add Nutrients** button on the startup page.
  - b. Under **P/K nutrient source**, type in up to 15 products that contain P and/or K.
  - c. Select an appropriate **Source type** for each product, using the drop-down menu. The appropriate units for that source type will be automatically entered in the **Analysis units** column.
  - d. Enter the P<sub>2</sub>O<sub>5</sub> and/or K<sub>2</sub>O analysis of each product, using the units specified under **Analysis units**.
  - e. Once all P and/or K sources have been entered, click **Main**.
4. *Create a list of crops and customize P and K removal rates.*
  - a. Click **Add Crops** on the **Main** page.
  - b. Under **Crop** create a list of crops grown in your area by choosing one crop from each drop-down list, up to the number of crops you wish to consider.
  - c. If you want to use some pre-defined crop lists, click one of the buttons to the right of **Quick Lists**.
  - d. The amount of P<sub>2</sub>O<sub>5</sub> or K<sub>2</sub>O removed per harvest **Unit** will be that estimated by PPI/PPIC (shown under **PPI removal coefficients**) unless you enter your own under **User-defined removal coefficients**. If you do enter your own, understand that you assume responsibility for the effect on the calculations.
  - e. Once all crops have been entered, click **Main**.
5. *Save your customized PKalc spreadsheet.*  
Click **File | Save As**, select a location to save the file, and type in any name other than PKalc version 1.13. If you want to exit Excel, click **File | Exit** on the Standard Toolbar. Otherwise, continue to the next section.

### III. Using PKalc to calculate P and K nutrient balances

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1. **Open the customized version of PKalc.**

If you quit Excel, open the customized version of PKalc you created in the previous section. Click **File | Open**, locate the customized PKalc version and click **Open**.
2. **Define a project.**
  - a. Click **File | Save As**, select a location to save the file, and type in a name descriptive of the field or field area which you are going to examine.
  - b. In the box to the right of **Project**, type in the name of the field or field area.
  - c. Type in the beginning and ending calendar dates (MM/YYYY) in the boxes to the right of **Period from** and **to**. For the next crop year's planning, the time period should begin with a P and/or K nutrient application and end just after this season's crop harvest, before any more P and/or K nutrients are added.
3. **Enter P/K nutrient applications to the field or field area.**
  - a. Click the **Edit** button to the left of **Total additions**.
  - b. Under **Date**, enter the dates (MM/YYYY) of up to 15 P/K nutrient additions.
  - c. For each addition, under **P/K nutrient source**, select from the customized nutrient list you created in the previous section.
  - d. Under **Source rate**, enter the rate of nutrient product applied, using the units specified under **Rate units**.
  - e. The rate of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O applied (lb/acre) is calculated for each application and totaled under **Nutrients added**.
  - f. Once all of the additions have been entered for the time period considered, click **Main**. The total additions of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O are displayed to the right of the **Total additions** label.
4. **Enter crop harvests to calculate estimated P/K nutrient removals.**
  - a. Click the **Edit** button to the left of **Total removal**.
  - b. Under **Date**, enter the date (MM/YYYY) of each crop harvest occurring within the time period of interest, up to 10 entries.
  - c. Under **Crop**, select the crop harvested from the customized list of crops created in the previous section.
  - d. Under **Yield**, enter the yield associated with each crop harvest from the field or field area considered, using the harvest units specified under **Unit**.
  - e. The estimated rate of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O removed (lb/acre) is calculated for each crop harvest and totaled under **Nutrients removed**.
  - f. Once all of the harvests have been entered for the time period considered, click **Main**. The estimated total removals of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O are displayed to the right of the **Total removal** label.
5. **Save your project if you want to be able to return to it for further analysis.**
6. **Evaluate P/K balances.**
  - a. On the **Main** page, the difference between **Total additions** and **Total removal**, termed estimated net change, are displayed to the right of the label **Est. net change**.
    - i. If the estimated net change is positive, then P or K may be being built up in the soil (indicated under the **Comments** label on the Main page).
    - ii. If the estimated net change is negative, then P or K may be being mined from the soil.
    - iii. If the estimated net change is zero, then P or K may be balanced.
  - b. **IMPORTANT:**

The estimated net change is an estimate only. Larger positive or negative numbers provide greater confidence that build up or mining situations exist. Smaller estimates carry less confidence. The amount of P/K removed per harvest unit of crops can vary widely, so cautious interpretations should be used.
7. **Print a project.**
  - a. On the Main page, click **Print Project** to print an itemized list of P/K additions and removals.
  - b. On the Main page, click **Print Crop List** to print the customized list of crops and P/K removal coefficients.