



**Process For Determining Phosphorous (P) or Potassium (K) Needs**

- 1) What is the square-footage of your bed? (**bed top in feet x bed length in feet**)
  
- 2) Convert the area of your bed to acres. One acre = 43,560ft<sup>2</sup> (**bed square footage [Question 1]/43,560**).
  
- 3) Refer to your soil sample to determine the parts per million (ppm) for P or K (use Weak Bray/Bray-P1 for P)
  - a. Soil test results for Phosphorus =
  
  - b. Soil test results for Potassium =
  
- 4) Choose a few crops you intend to grow. Using the tables provided determine how much Phosphorus is needed.

Crop	Existing P (sample)	P Needed
	ppm	Lb P <sub>2</sub> O <sub>5</sub> /Acre
		Lb P <sub>2</sub> O <sub>5</sub> /Acre
		Lb P <sub>2</sub> O <sub>5</sub> /Acre

- 5) Use the Potassium table to look up those same crops.

Crop	Existing K (sample)	K Needed
	ppm	Lb K <sub>2</sub> O/Acre
		Lb K <sub>2</sub> O/Acre
		Lb K <sub>2</sub> O/Acre

- 6) Using the Cover Crop Calculator, determine how many pounds of product you would need to meet your P and K requirements for one of the crops above.
  - a. Go to *Nutrients Provided* tab
  - b. Experiment with different numbers in the yellow column for desired products
  - c. Match the P or K needed column with your nitrogen needed from amendment figure (from table above)

Crop	P <sub>2</sub> O <sub>5</sub> Needed	Product	Lb of Product/Acre
		Bone Meal	
		Fish Meal	
		Soy Meal	



Crop	K <sub>2</sub> O Needed	Product	Lb of Product/Acre
		Sulfate of Potash Magnesia	
		Muriate of Potash	
		Chicken Manure	

7) Choose a few of the above P and K amendments and determine how many pounds of each to apply to a bed.

**(bed area in acres [answer to question 2]) x (lb product needed [answers to question 6])**

EXAMPLE: If one bed is 0.0137 acres and requires 146lb bone meal/acre, then:

$$0.0137 \times 146\text{lb} = 2\text{lbs bone meal/bed}$$

Crop	Product	NPK	Lb of Product/Bed
			lb N/bed
			lb N/bed
			lb N/bed
			lb N/bed

### Micronutrients Recommendations

These numbers are based on information obtained from Mark Thomassen with Marion Ag.

Element	Abbreviation	Target (ppm)	Notes
Calcium	Ca	Based on Mg	Get Mg over 120ppm then look to have Ca about 75% of Percent Cation Saturation; commonly applied as limestone, dolomite, or gypsum; necessary for plant structure and against deficiencies like blossom end rot.
Magnesium	Mg	120 min	Commonly applied as dolomite lime; key element in photosynthesis.
Sulfur	S	20-60	Commonly applied through gypsum (pH neutral), elemental sulfur (lowers pH), or other forms; limited in PNW soils; water soluble.
Zinc	Zn	?	Requires Mehlich 3 lab analysis.
Manganese	Mn	?	Requires Mehlich 3 lab analysis.
Boron	B	1	Commonly applied as Solubor or Granubor; important for beets & brassicas, in particular; water soluble; <i>can be toxic to plants if over-applied</i> ; see Minnesota Guide for more specific Boron application figures by crop.