FORSYTH COMMUNITY GARDENING

Soil Test Interpretation Worksheet (3 pages)

This worksheet is designed to help you use your NCDA soil test report to make good decisions about soil amendments and fertilizers for your vegetable garden. For more information, please see: http://tinyurl.com/FCGHealthySoil, especially "Soil Test Interpretation and Soil Management." *(Revised 09/2017.)*

Name: _____ Garden: _____ Bed: _____ Square feet (length x width): _____

pH (measure of acidity or alkalinity)

1) **Where does your pH fall with respect to the optimum range of 6.2 – 6.7 (for vegetables)? Circle one:**

Very Low (acidic)	Slightly Low	Optimum	Slightly High	High (alkaline)
< 6.2	6.2 - 6.4	6.4 – 6.8	6.8 – 7.0	> 7.0

2) If your pH is low, what is the lime recommendation? _____ **lbs/1000 ft^2**
Calculate how much lime you need to apply based on the size of your garden bed:

$$\text{lbs lime needed} = \frac{(\text{lbs lime for } 1000 \text{ ft}^2) \times (\text{square footage of garden bed})}{1000 \text{ ft}^2}$$

Use this space to calculate lbs lime for your garden bed:

★ **I need to apply _____ lbs of lime to my garden bed.**

3) If your pH is high, be sure not to add any lime or amendments that would raise the pH. Consider planting crops that tolerate high pH: asparagus, beets, cabbage, cauliflower, celery, carrots, lettuce, and spinach.

Nutrients: Nitrogen (N), Phosphorous (P), Potassium (K)

Nitrogen: Add N based on crop needs, minus N that will be released from soil organic matter:

1) **Circle the crop you plan to plant next year and the recommended N addition (in lbs N/ 1000 ft^2).**
Note: These recommendations assume a modest release of N from soil organic matter. You may need more N if you have not added any organic matter to your soil in recent years, and less N if you regularly use compost and cover crops.

Light feeder	Medium feeder	Heavy feeder
(e.g., beans, peas, radishes)	*(e.g., carrots, Cucurbits)*	*(e.g., tomatoes, peppers, Brassicas)*
0.5 lb N/ 1000 ft^2	**1.0 lb N/ 1000 ft^2**	**1.5 lb N/ 1000 ft^2**

Phosphorous and Potassium: On your soil test, phosphorous (P) and potassium (K) indicies of 50 – 70 are optimum. P and K recommendations are shown in the "N-P-K" fertilizer recommendations. However, you can calculate the recommended amount for each nutrient and apply the same quantity using organic materials.

Example: If the N-P-K Fertilizer Recommendation is "20 lbs/ 1000 ft^2 of 5-10-5," this means 20 lbs of a fertilizer that is 5% N, 10 % P, and 5 % K, by weight. Therefore:

- ✓ The recommended amount of P is: 20 lbs x 10 % = 2 lbs P / 1000 ft^2
- ✓ The recommended amount of K is: 20 lbs x 5 % = 1 lb K / 1000 ft^2

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2. Nutrients: Nitrogen (N), Phosphorous (P), Potassium (K), Continued

2) **What is the Phosphorous Index (P-I)? _____**. This is (circle one): < 50 Deficient | 50 – 70 Optimum | > 70 Excessive

If deficient, what is the P recommendation? **_____ lbs P/ 1000 ft^2**

3) **What is the Potassium Index (K-I)? _____**. This is (circle one): < 50 Deficient | 50 – 70 Optimum | > 70 Excessive

If deficient, what is the K recommendation? **_____ lbs K/ 1000 ft^2**

4) Fill in this table of nutrient and fertilizer needs, following the steps outlined below the table:

★ **I need to apply these amounts of nutrients (N, P, and K) and fertilizers to my garden bed:**

Nutrient	(a) Lbs NUTRIENT for 1000 ft^2	(b) lbs NUTRIENT for my garden bed	(c) Type of Fertilizer(s)	(d) lbs FERTILIZER for my garden bed
N				
P				
K				

a) Write in the amounts (lbs) of each **nutrient** needed for 1000 ft^2, noted in #1 - #3 (above).

b) Calculate the amounts (lbs) of each **nutrient** needed for your garden bed. Use this formula:

$$\text{lbs nutrient} = \frac{(\text{lbs nutrient for } 1000 \text{ ft}^2) \times (\text{square footage of garden bed})}{1000 \text{ ft}^2}$$

Use this space to calculate lbs of each nutrient needed for your garden bed:		
lbs N =	lbs P =	lbs K =

c) Use the table on the next page to choose which **fertilizer(s)** you will use to supply the nutrients you need.

d) Calculate the amount (lbs) of each **fertilizer** needed based on its nutrient content (provided in the table). Use this formula:

$$\text{lbs fertilizer} = \frac{(\text{lbs nutrient for garden bed})}{\% \text{ nutrient in fertilizer}}$$

Use this space to calculate lbs of each fertilizer you checked for your garden bed:		

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Check which organic fertilizers you will use to supply the nutrients your garden bed needs. Remember, if you have excessive P and/or K, do NOT apply any amendments with those nutrients until the excess is used by crops.

✓	Fertilizer	Notes and Recommendations on when to use this amendment:
Amendments that add mainly N *(may use in all cases, and use* **only** *these amendments when P and K are excessive)*		
	Legume cover crop (specify):	• Crimson Clover, Hairy Vetch, or Winter Peas are over-wintering legumes. These may supply most crop N needs (esp. Hairy Vetch and Winter Peas). • Cowpeas are a summer legume. These may supply ⅓– ½ of crop N needs.
	Blood meal	• Contains: 12 % N, 1.5 % P, 0.6 % K
	Other:	
Amendments that add N, P, and K *(use* **only** *when both P and K are deficient). Note that manure-based compost contains much more P relative to N than crop plants need, so use it sparingly.*		
	Dairy manure compost	• Nutrient contents vary; Contains about: 0.6 % N, 0.1 % P, 0.4 % K
	Horse manure/bedding compost	• Nutrient contents vary; Contains about: 0.4 % N, 0.2 % P, 0.5 % K
	Poultry manure compost	• Nutrient contents vary; Contains about: 1.1 % N, 1.6 % P, 1.0 % K
	Alfalfa meal	• Contains: 3.0 % N, 1.0 % P, 2.0 % K
	Fish emulsion	• Contains: 5.0 % N, 2.0 % P, 2.0 % K
	Other:	
Amendments that add only N and P *(use when P is deficient and K is excessive)*		
	Bone meal	• Contains: 0.7-4 % N, 11-34 % P
	Fish meal	• Contains: 10 % N, 4 % P
	Other:	
Amendments that add mainly K *(use when P is excessive and K is deficient)*		
	Greensand	• Contains: 1-2 % P, 5% K. Availability is slow.
	Other:	

3. Organic Matter

a) **What is the %HM? _____**. *If it is < 1.0%, your total organic matter levels may be low.*

b) All gardeners should add organic matter every year, *especially* in soils with %HM < 1.0% and/or sandy soils. However, you should only apply organic matter that will not over-load your soil with nutrients.

★ **I will apply these sources of organic matter to my garden bed (keeping in mind my soil P and K):**

✓	Amendment	Notes and Recommendations on when to use this amendment:
	Cover Crop(s) (specify):	• Appropriate in all soils. Over-wintering, grass/ legume mixtures add the most organic matter. *Example: Rye/ Hairy Vetch/ Winter Pea.*
	Composted leaves & yard waste	• Appropriate in all soils. Nutrient content is modest and well-matched to the needs of crop plants.
	Composted manure	• Appropriate ONLY where P and K are deficient, or at the low end of optimum.
	Other (specify):	