Soil Test Interpretation Worksheet (3 pages)

This worksheet is designed to help you focus on important indicators of soil health on your NCDA soil test report, learn the condition of your soil, and make good decisions about soil amendments. For more background and guidance on organic soil amendments, please see the resources at: http://tinyurl.com/FCGHealthySoil. The first link, "Soil Test Interpretation and Soil Management: A Guide for Community Gardens," is a good starting point.

Name: _____ Garden: _____ Bed: _____

1. pH (measure of acidity or alkalinity)

a) **What is the pH?** _____

b) **Where does your pH fall with respect to the optimum range of 6.2 – 6.7? 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

c) **If your pH is very low or slightly low, what is the lime recommendation?** _____ lbs/1000 square feet
Calculate how much lime you need to apply based on the size of your garden bed. (See the "Soil Test Interpretation Guide" for an example calculation):

d) **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.

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

Nitrogen: There is no reliable test to determine how much N is available for plants since N changes forms quickly in the soil. Gardeners add N based on crop needs, minus the N that will be released from soil organic matter over the season.

a) **Circle the crop you plan to plant next year and the recommended N addition (in pounds of 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, mulch, 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) levels are reported as indicies -- a number on a relative scale representing nutrient availability to crops. 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 % (0.10) = 2 lbs P / 1000 ft^2
- ✓ The recommended amount of K is: 20 lbs x 5 % (0.05) = 1 lb K / 1000 ft^2

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

b) **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/ 1000 ft^2

c) **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/ 1000 ft^2

d) **Summarize the amount of each nutrient (N, P, and K) you need to apply to this bed.** You ONLY need to add P or K if your P-index or K-index is below 50. If your P- and K-indicies are above 50, there is no need to add more.

_____ lbs N/ 1000 ft^2 _____ lbs/ 1000 ft^2 _____ lbs/ 1000 ft^2

e) **Use the table below to check which amendment(s) you will use to supply the nutrients checked above.** If you have excessive P and/or K, do NOT apply any amendments with those nutrients until the excess is used by crops.

✓	Amendment	Notes and Recommendations on when to use this amendment:
Amendments that add mainly N *(use in all cases, and use* **only** *these amendments when P and K are excessive)*		
	Legume cover crop (specify):	• Try to use legumes as your main N source. They add N and organic matter without adding other nutrients you may have enough of (e.g., P, K). • Examples: Crimson Clover or Hairy Vetch (over-wintering), Cowpeas (summer) • Legumes can be mixed with grass cover crops for greater organic matter additions (e.g., Rye for the over-wintering niche, Buckwheat or Japanese Millet in summer).
	Feather meal	• Contains: 11-15 % N
	Blood meal	• Contains: 12 % N, 1.5 % P, 0.6 % K
	Other:	
Amendments that add N, P, and K *(use when both P and K are deficient)*		
	Composted manure	• These amendments add N, P, and K. • They are appropriate ONLY where P and K are deficient, or at the low end of optimum. • Manure-based compost contains much more P relative to N than crop plants need, so use it sparingly.
	Alfalfa meal	
	Cottonseed meal	
	Fish emulsion	
	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	• K availability is slow
	Other:	

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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.

Keeping in mind your soil P and K results, use the table below to check appropriate methods to add organic matter to this bed.

✓	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. *Examples: Rye/ Crimson clover, Rye/ Hairy vetch.*
	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):	• What are the nutrient contents? _____ % N _____ % P _____ % K • Is this appropriate given your soil nutrient levels?