

Soil Test Report—Vegetables

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Sample ID	GARD1
Date	2023-02-17
Fertilizer Preferences	Organic
Fertilizer Rate	Lbs. and oz. per 100 sq. ft.

Narrative

I recommend a standard application of nitrogen this coming spring. Nitrate-nitrogen levels are currently low, and typically begin low each spring due to leaching from seasonal rains. Sulfate-sulfur is at moderate levels. Some of this will likely leach from the soil with seasonal winter rainfall. Additional sulfur will be provided this coming year from the breakdown of soil organic matter and sulfate fertilizer.

Levels of potassium are slightly below optimal in the soil. I recommend adding potassium fertilizer to raise levels in the soil to the optimum level.

Phosphorus is at optimal levels and should easily meet the needs of your vegetables.

Soil organic matter is very high in the soil at 12.1%. High soil organic matter can have benefits such as increased water and nutrient holding capacity. If not already, consider growing overwintering cover crops as a practice. This can help build organic matter levels in the soil. Cover crops can also help 'bank' nutrients for future years, by capturing nutrients at the end of the year that might otherwise be lost from leaching due to winter rainfall.

Soil pH is at 6.4 and is below the optimal range for most vegetables (6.5-7.5). An application of limestone will be needed to raise soil pH this spring into this range.



Results

	Results	Rating	Short Interpretation	Recommendation
Nitrate-Nitrogen	6 ppm	Low	Soil nitrate-nitrogen is very low. This is typical for this time of year since nitrate-nitrogen leaches out of the soil with seasonal rains. A standard annual application of nitrogen will be needed this spring.	Add a standard application of nitrogen fertilizer next spring.
Phosphorus	56 ppm	Optimal	Current levels should easily meet the needs of your vegetables.	No action needed.
Potassium	184 ppm	Slightly below optimal	Your vegetables would benefit from additional potassium.	Add potassium fertilizer.
Calcium	12.7 meq/100 g	Sufficient	Calcium levels are adequate (>5 meq Ca/100 g).	No action needed.
Magnesium	1.9 meq/100 g	Sufficient	Magnesium levels are adequate (>1 meq Mg/100 g).	No action needed.
Sulfate-Sulfur	15 ppm	Medium	Soil sulfate-sulfur is at moderate levels. Sulfate-sulfur tends to be low this time of year due to the leaching effect of seasonal rains. Additional leaching is likely through the remainder of winter.	Sulfur will be provided from the breakdown of soil organic matter and sulfate fertilizer.
Soil pH	6.4	Below optimal	Soil pH is below the optimal range for most vegetables (6.5-7.5).	Add limestone to raise soil pH.
Organic Matter	12.1%	Very high	High organic matter can have benefits for soil health such as increased nutrient and water holding capacity.	No action needed.



Recommended Fertilizers

Fertilizer	Nutrients Added	Amount	When to Apply
Bloodmeal (12-0-0) or Feathermeal (12-0-0)	Nitrogen	2-3 lbs. per 100 sq. ft. (1-1.5 lbs per 100 sq. ft. 4-6 weeks later, for high nitrogen demanding vegetables)	At planting time for first/main application. Incorporate through tilling. For second application for high nitrogen demanding vegetables, apply 4-6 weeks later. Mix into the first few inches of the soil. Take care not to disturb establishing roots.
Potassium sulfate (0-0-50) 18% S, a.k.a. (potash of sulfate)	Potassium, Sulfur	7 oz. per 100 sq. ft.	At same time listed above for the first application of bloodmeal/feathermeal.
Agricultural lime, a.k.a. calcitic lime or calcium carbonate (70-score lime)*	Calcium	9 lbs. and 3 oz. per 100 sq. ft..	Apply next spring, timed at least 1-2 weeks apart from nitrogen fertilizer application. Mix well into the top 6 inches of soil through tilling.

*This recommended rate assumes you are using limestone of a certain lime score, which measures its strength in changing your soil pH. If you use limestone of a different strength, contact me to recalculate the rate.

**If you use no-till or reduced-till practices, do not apply this amount of lime. Please contact me for an alternative approach, involving surface application of smaller amounts of lime over multiple years.





Extra Information—Fertilizers

Note on NPK rating

In the recommendations on this page, nutrient concentrations for fertilizers are reported in terms of NPK ratings. These are given in parentheses, and represent (N-P-K). N stands for **Nitrogen**, P for **Phosphorus**, and K for **Potassium**. Each number stands for the percent concentration of each nutrient. For example, feathermeal has **12% nitrogen**, but **0% phosphorus** and **0% potassium**. Its NPK rating is (12-0-0).

It's essential to pay close attention to these concentrations, so you apply the correct amount of nutrients, and don't over- or underapply. For other nutrients, the NPK rating may be modified. For example, magnesium sulfate (Epsom's salts), contains 13% sulfur and 10% magnesium. This may be written as (0-0-0-13S-10Mg). Alternatively, the nutrient concentrations may simply be written out by percentage (13% sulfur, 10% magnesium).

Please note:

- If you wish to use an alternate form of fertilizer or the same fertilizer but of a different strength, please let me know so I can update the application rate.
- The above fertilizers are recommended on a rate basis. You will need to multiply the rates above by the total area of your garden or field to calculate the correct amount of fertilizer to apply. (**Example: 100 lbs. fertilizer per acre x 2 acres = 200 lbs. fertilizer**)