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Lab No.: 91629

SOIL ANALYSIS RESULTS

Date Reported: 04/12/2021

Send To: 51209	GARFIELD COUTNY EXTENSION DREW WALTERS 1001 RAILROAD AVE RIFLE, CO 81650

Hans Burken
Agronomist

Results For:	LINDA HELMICH	**Invoice No.:**	634587
Field ID:	MAIN	**Date Received:**	04/09/2021
Sample Identification:	MIDDLE	**Sample Depth:**	0-8"

GARDEN - VEGETABLES

		Acidic / Neutral / Alkaline (4.0 — 5.0 — 6.0 — 7.0 — 8.0)
Soil pH	7.7	

		Very Low / Low / Medium / High / Very High
Nitrate Nitrogen (NO3-N), ppm	6	
Organic Matter, %	10.3	
Phosphorus (P), ppm	607	
Potassium (K), ppm	536	
Sulfur (S), ppm	76	
Calcium (Ca), ppm	6280	
Magnesium (Mg), ppm	506	
Sodium (Na), ppm	86	
Zinc (Zn), ppm	54.4	
Iron (Fe), ppm	176	
Manganese (Mn), ppm	59.0	
Copper (Cu), ppm	2.3	

		Suitable / Caution / Warning
Soluble Salts (EC), mmho/cm	0.42	
Excess Lime (i)	HI	

Cation Exchange Information:
CEC = 31 meq/100g

% H	% K	% Ca	% Mg	% Na
0	4	81	14	1

Fertilizer Recommendations (lbs. per 1000 Sq. Ft) **GARDEN - VEGETABLES**

Nitrogen	1.2
Phosphorus (P_2O_5)	0.0
Potassium (K_2O)	0.0
Zinc	0.0
Sulfur	0.0
Manganese	0.0
Copper	0.0
Magnesium	0.0

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CAUTION: The current soluble salt level is elevated above nomal levels. Growth and development salt sensitive plant species may be affected. Soluble salts may accumulate because of minerals that are naturally present in the irrigation water or because the internal soil drainage is restricted and prevents accumulated salts from being leached below the plant root zone. Check for soil drainage restrictions (like soil compaction or soil layers). Check the quality of water used for irrigating. . Soil test routinely to monitor changes in soluble salt levels.

***"Soluble salts"** are a measurement of the comparative amount of minerals dissolved in the soil water. Excess soluble salts restrict the ability of the root system to extract water from the soil. Plant species differ in their ability deal with excess soluble salts. Elevated soluble salts may provide an additonal stress to growing plants if other problems are observed.*

EXCESS LIME - WARNING: "Excess lime" refers to the comparative presence of very fine lime particles in the soil as NO, LO, or HI. High excess lime, an alkaline soil pH, and high soil nitrate levels often contribute to "iron deficiency chlorosis (IDC)". IDC is caused by an imbalance of iron within the plant. The severity of IDC is different among plant species, varities, or hybrids.

POTENTIAL TREATMENTS: Applying 2 to 3 lb of elemental sulfur, 12 to 18 lb of ferric sulfate, or 15 to 20 lb. of aluminum sulfate per 1000 sq. ft. can help increase soil acidity, lower soil pH, and reduce IDC problems. Overapplying these materials will increase the likelihood of problems from soluble salts or excessively low pH. Suggest applying the acidifying material in early fall and incorporating into the soil when feasible. Water the treated area well during growing season. Collect soil samples in the following fall to monitor soil pH changes to make adjustments as needed.

GARDEN VEGETABLES - Some suggested nitrogen application schedules

Crucifers (broccoli, cabbage, cauliflower): Sidedress about half of the required nitrogen about one to two weeks after planting. Apply the remainder of the required nitrogen about two weeks before harvest.

Leafy greens

- **Lettuce, spinach, mustard:** Broadcast the required nitrogen before planting and incorporate into the soil.
- **Kale, collards:** Sidedress the required nitrogen when plants reach one-third size.

Legumes (beans, peas): Apply the required nitrogen before or at planting.

Perennials (asparagus, rhubarb): Apply about one-third of the required nitrogen to established plantings before the spears appear in spring. For asparagus, apply the remainder of the required nitrogen at the end of harvest. For rhubarb, sidedress the remainder of the nitrogen requirement in late spring or early summer.

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Root crops

- **Carrots, radish, beets, turnips**: Broadcast the the rquired nitrogen before or at planting.
- **Onions**: Sidedress the required nitrogen at two to three weeks after emergence.
- **Potatoes**: Apply the required nitrogen about three to four weeks after emergence when plants are 6 to 8 inches tall.

Sweet corn: Band about a third of the required nitrogen at planting. Sidedress the remainder of the rquired nitrogen when the corn plants are 8 to 12 inches tall. Make a second sidedress application in sandy soils about two weeks later.

Transplants (tomatoes, peppers, eggplant): Use a starter solution at planting. Sidedress the required nitrogen when when fruits are about one inch in diameter.

(Each 1 pound of nitrogen per 1000 square feet is equivalent to about ¼ ounce of actual nitrogen per 100 feet of row when banded. For example: about 2½ ounces of a 10-0-0 fertilizer will provide ¼ ounce of nitrogen.)
The suggested nitrogen application schedules assume quick-release fertilizer materials. The application timing must be adjusted when using slow-release fertilizers and when using manure or other organic materials.)

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