

Introduction to Section 16 (16e - Irrigation Water, Soil & Plant Tissue Analysis/Guide for Chile)

1	Producer: Farm in San Miguel County, NM Crop: Green and Red Chile Yield: Irrigation Water: 24"
2	Tillage Operations: To be evaluated and discussed at workshop; is applying manure to chile field.
3	Soil Texture: Loamy Sand Soil Structure: to be determined at Workshop Aggregate Stability: to be determined at Workshop

4	Nutrients ON = Organic Nitrogen mineralized	Irrigation Water Analysis (ppm x 0.227 x 24" = lb./ac.)		Soil Analysis 0-6" depth ppm x 2.18 = lb/ac (6" depth)		Nutrient Inputs (recommendations)	Plant Tissue Analysis Note: N is kjeldahl nitrogen & Sulfur is total Sulfur		Should I Apply Nutrients?	Conservation Practices to consider for achieving sustainability
		ppm or mg/l	Pounds per Acre	ppm or meq/l	Pounds per Acre or (VL, L, M, H, & VH)	Pounds per Acre	% or ppm & Rating (low - high)	Sufficiency Range (leaf: middle of terminal shoot)	- Yes (Y) No (N) - Maintenance (M) - Not Sure (?) - Other (O)	
5	Organic Matter			1.1%	23,980.0 lbs.					♥ Cover Crops ♥ Crop Rotations ♥ Manure or Compost ♥ Minimum-Till (No-Till); Residue mgt. ♥ IWM ♥ Soil Amendments (e.g. gypsum) ♥ IPM
6	N mineralized			ON	25.0 lbs.	Manure			Applies manure	
7	Nitrate-Nitrogen	0.05	0.27	50 ppm	109.0 lbs High	N	5.22%	3.0 - 5.0%	No	
8	Phosphorus			26.5 ppm	High	P ₂ O ₅	0.32%	0.3 - 0.5%	No	
9	Potassium	1.7	9.3	91.0 ppm	Very High	K ₂ O	5.43%	2.5 - 5.0%	No	
10	Sulfate-Sulfur	9.2	50.1	not	analyzed	none	0.42%	%	O: gypsum?	
11	Calcium	44.9	244.62	16.3 meq/l	Very Low	none	1.74%	0.9 - 2.5%	O: gypsum?	
12	Magnesium	3.65	19.9	3.5 meq/l	Very Low	none	0.49%	%	?:	
13	Zinc			not	analyzed	none	25.0 ppm	ppm	O: manure	
14	Iron	1.85	10.08	not	analyzed	none	97.0 ppm	ppm	O: manure	
15	Manganese	0.18	0.98	not	analyzed	none	49.0 ppm	ppm	O: manure	
16	Copper			not	analyzed	none	8.0 ppm	ppm	O: manure	
17	Boron	Not	analyzed	not	analyzed	none	35.2 ppm	ppm	O: manure	
18	Molybdenum					none	not	analyzed	O: manure	
19	Sodium	2.53	13.78	2.9 meq/l	use SAR		0.01%		Not applicable	
20	Chloride	2.4	13.08				Not	analyzed	Not applicable	
21	Bicarbonate	100.1	545.34							
22	Carbonate	0	0							

Additional Assessments to Consider in evaluating your Cropping System (soil pH, free lime & CEC)

- Electrical Conductivity of Irrigation Water (ECiw) = 0.172 mmhos/cm
- Sodium Adsorption Ratio (SAR) from water test = 0.10 & pH = 7.62
- Refer to Irrigation Water Quality Guidelines (Sect.2) for infiltration assessment (No Infiltration problems observed). Total Dissolved Solids = 109.0 mg/l. Soluble salts applied = 593.83 lb./ac./yr.
- ECe (EC of Soil Saturation extract) = 2.49 mmhos/cm & pH = 7.5
- Sodium Adsorption Ratio (SAR) from soil test = 0.9
- Refer to Crop Salt Tolerance Table (Section 2) to evaluate for potential yield reduction. (NOTE: yield loss is about 10% when ECe is 2.2 mmhos/cm; i.e., salinity from manure and/or shallow water table)

Refer to the NRCS Nutrient Uptake Tool: <http://npk.nrcs.usda.gov/> for calculating NPK removal by crop

rudy.garcia.2009

Agronomy Tech Note 76 (<http://www.nm.nrcs.usda.gov/technical/handbooks/iwm/nmiwm.html>)