Section 16 of 22 (16i – Irrigation Water, Soil and Plant Tissue Analysis Guide – Apples Example)

1	**Producer:** Dineh College, NM **Crop:** Apples (Golden Delicious) **Yield:** bu. /ac **Irrigation Water:** 30 ac-in (No. of irrigations =?)									
2	**Tillage Operations:** minimum tillage									
3	**Soil Texture:** Sandy Clay Loam **Soil Structure:** Granular **Aggregate Stability:** Good									
4	**Nutrients**	Irrigation Water Analysis (ppm x 0.23 x 30" = lb./ac.)		Soil Analysis 0-6" depth ppm x 1.9 = lb/ac (6" depth)		Nutrient Inputs (recommend-ations)	Plant Tissue Analysis Note: N is kjeldahl nitrogen & Sulfur is total Sulfur		Should I Apply Nutrients? - Yes (Y) No (N) - Maintenance (M) - Not Sure (?) - Other (O)	Conservation Practices to consider for achieving sustainability
	ON = Organic Nitrogen mineralized	ppm or mg/l	Pounds per Acre	ppm or mg/Kg	Pounds per Acre (VL, L, M, H, &VH)	Pounds per Acre	% or ppm & Rating (low - high)	Sufficiency Range (leaf: middle of terminal shoot)		
5	Organic Matter			1.32 %	25,080				O: Manure?	♥ Cover Crops
6	N mineralized			ON	30.0	Manure?			O: Manure?	
7	Nitrate-Nitrogen	Not	Analyzed	14.35	27.3 M	50 N	2.04 %	1.9 – 2.3%	Y: split apply	
8	Phosphorus			2.7	5.1 VL	90 P_2O_5	0.09 %	0.09 – 0.40%	Y: spring	♥ Crop Rotations
9	Potassium	2.1	14.5	57.0	108.3 M	30 K_2O	1.37 %	1.2 -1.8%	M: Manure?	
10	Sulfate-Sulfur	36.2	249.8	Not	Analyzed	none	0.11 %	0.20 - 0.40%	?: water stress?	♥ Manure or Compost
11	Calcium	63.7	439.5	729.5	1,386 H	none	1.84 %	0.8 – 1.6%	N: high levels	
12	Magnesium	10.7	73.8	70.4	133.8 H	none	0.50 %	0.25 – 0.45%	N: high levels	
13	Zinc			1.02	1.9 H	none	32 ppm	20 – 50 ppm	N: sufficient	♥ Minimum-Till (No-Till); Residue mgt.
14	Iron	Not	Analyzed	5.42	10.3 H	none	174 ppm	50 – 200 ppm	N: sufficient	
15	Manganese	Not	Analyzed	3.29	6.3 H	none	97 ppm	25 – 135 ppm	N: sufficient	
16	Copper			0.6	1.14 M	none	6 ppm	6 - 12 ppm	O: water stress?	
17	Boron	0.14	0.97	Not	Analyzed	none	25.9 ppm	30 – 50 ppm	O: water stress?	♥ IWM
18	Molybdenum					none	Not analyzed	> 0.1 ppm	O: water stress?	♥ Soil Amendments (e.g. gypsum)
19	Sodium	28.7	198.0	181.2	use SAR		Below Det. L.	Range needed	O: don't apply	
20	Chloride	8.5	58.7				not analyzed	Range needed	O: don't apply	
21	Bicarbonate	129.4	892.9							
22	Carbonate	0	0							♥ IPM

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

- Electrical Conductivity of Irrigation Water (ECiw) = 0.501 mmhos/cm
- Sodium Adsorption Ratio (SAR) from water test = 0.88 & pH = 8.17
- Refer to Irrigation Water Quality Guidelines for infiltration assessment. Total Dissolved Solids = 331 mg/l (soluble salts applied = 2,284 lb./ac./yr.)
- ECe (EC of Soil Saturation extract) = 3.7 mmhos/cm & pH = 7.5 Sodium Adsorption Ratio (SAR) from soil test = 1.72
- Refer to Crop Salt Tolerance Table to evaluate for potential yield reduction and salinity management considerations/options

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

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