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

1	**Producer:** Eastern, NM	**Crop:** Sorghum (Milo)	**Yield:** 105 Bushels	**Irrigation Water:** 18" (Ref. NM Irrigation Guide)
2	**Tillage Operations/Crop Rotations:** ?			
3	**Soil Texture:** Loam	**Soil Structure:** Granular	**Aggregate Stability:** Poor (used slake test)	

4	Nutrients ON = Organic Nitrogen mineralized	Irrigation Water Analysis (ppm x 0.23 x 18" = lb./ac.) ppm or mg/l	Pounds per Acre	Soil Analysis 0-6" depth ppm x 1.93 = lb/ac (6" depth) ppm or mg/Kg	Pounds per Acre (VL, L, M, H, & VH)	Nutrient Inputs (recommendations) Pounds per Acre	Plant Tissue Analysis Note: N is kjeldahl nitrogen & Sulfur is total Sulfur % or ppm	Sufficiency Range (collect second leaf from top)	Should I Apply Nutrients? - Yes (Y) No (N) - Maintenance (M) - Not Sure (?) - Other (O)	Conservation Practices to consider for achieving sustainability
5	Organic Matter			0.86 %	16,598.0 L				O: Manure?	♥ Cover Crops
6	N mineralized			ON	21.0	Manure?			O: Manure?	
7	Nitrate-Nitrogen	not	analyzed	10.05	19.4 M	120 N	3.14 %	3.3 – 4.0 %	Y: Split apply	
8	Phosphorus			19.8	38.2 M	80 P_2O_5	0.26 %	0.20 – 0.35 %	M: spring apply	♥ Crop Rotations
9	Potassium	8.3	34.4	69.0	133.0 H	K_2O	1.94 %	1.4 – 2.5 %	O: Manure?	
10	Sulfate-Sulfur	9.7	40.2	not	Analyzed	?	0.17 %	No rating %	?: not sure	
11	Calcium	31.5	130.4	45.3	87.4 VL	?	0.24 %	0.30 – 0.60 %	?: Gypsum	♥ Manure or Compost
12	Magnesium	29.3	121.3	23.5	45.4 L	?	0.15 %	0.20 – 0.50 %	?: Ag Epsom	
13	Zinc			1.26	2.4 H	none	30.0 ppm	15 – 30 ppm	N: no	♥ Minimum-Till (No-Till); Residue mgt.
14	Iron	not	analyzed	8.32	16.1 H	none	273.0 ppm	65 – 100 ppm	N: no	
15	Manganese	not	analyzed	8.56	16.5 H	none	28.0 ppm	8 – 190 ppm	N: no	
16	Copper			1.02	2.0 H	none	23.0 ppm	2 – 7 ppm	N: no	
17	Boron	not	analyzed	not	analyzed	none	7.3 ppm	1 – 10 ppm	N: no	♥ IWM
18	Molybdenum					none	not	analyzed	N: no, pH good	♥ Soil Amendments (e.g. gypsum)
19	Sodium	48.1	199.1	58.0	use SAR		Below Det.	limit	n/a	
20	Chloride	35.8	148.2				not	analyzed	n/a	
21	Bicarbonate	217.8	901.7							
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) = 0.602 mmhos/cm
- Sodium Adsorption Ratio (SAR) from water test = 1.48 & pH = 7.44
- Refer to Irrigation Water Quality Guidelines for infiltration assessment. Total Dissolved Solids = 359 mg/l (soluble salts applied = 1,486.3 lb./ac./yr.)
- ECe (EC of Soil Saturation extract) = 0.57 mmhos/cm & pH =6.5 Sodium Adsorption Ratio (SAR) from soil test = 1.74
- 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

rudy.garcia.2009

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