

## Carbon, Nitrogen, and Sulfur Testing in Soil/Plant Tissue

**Sample Preparation:** Samples may be prepared by passing the material through a 18 mesh sieve. If you are analyzing the sample on a dry basis, dry the sample in an oven at 85 C for approximately 2 hours (105°C for soils).

### Instrument Settings:

<i>Lance Delay:</i>	20 seconds
<i>Furnace:</i>	1350 C (1450°C for moist soils)
<i>Calibration:</i>	LECO or NIST Plant or Soil Standard
<i>Aliquot Loop Size:</i>	10cc
<i>Nominal Sample Weight:</i>	0.2 - 0.8 grams (sample dependent)*
<i>Analysis Time:</i>	~4 min.



**Special Modification to Unit:** None

**Procedure:** Weigh sample directly into the ceramic crucible and record the weight into the microprocessor. Place 1 gram of combustion catalyst, 502-321 COM-CAT, on top of the sample. Mix sample and catalyst with a spatula. Place the crucible into the autoloader rack or manually begin the analysis.

### Typical Results:

Sample	Soil				Grass				
	Weight (grams)	% C	% N	% S	Weight (grams)	% C	% N	% S	
#1	0.8245	2.67	0.175	0.033	#1	0.2358	39.27	3.67	0.300
#2	0.8407	2.67	0.175	0.034	#2	0.2214	39.37	3.69	0.289
#3	0.8387	2.56	0.160	0.030	#3	0.2183	39.21	3.70	0.289
#4	0.8568	2.57	0.169	0.033	#4	0.2341	38.91	3.67	0.289
#5	0.9493	2.55	0.167	0.032	#5	0.2330	39.16	3.71	0.296
#6	0.8587	2.68	0.176	0.035	#6	0.2267	38.96	3.68	0.286
<b>Average:</b>	<b>2.62</b>	<b>0.170</b>	<b>0.033</b>		<b>Average:</b>	<b>39.15</b>	<b>3.69</b>	<b>0.292</b>	
<b>Std. Dev.:</b>	<b>0.06</b>	<b>0.006</b>	<b>0.002</b>		<b>Std. Dev.:</b>	<b>0.16</b>	<b>0.01</b>	<b>0.005</b>	
<b>% Rel. Std. Dev.:</b>	<b>2.18</b>	<b>3.35</b>	<b>4.79</b>		<b>% Rel. Std. Dev.:</b>	<b>0.42</b>	<b>0.40</b>	<b>1.67</b>	

\*Typical sample weight used for soils and plant tissue approximately 0.2 gram



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