

# Control Laboratories

42 Hangar Way  
 Watsonville, CA 95076  
 www.biocharlab.com  
 Tel: 831 724-5422  
 Fax: 831 724-3188

Account No.:  
 4010100  
 Batch  
 Jan 2014 M  
 CODE:  
 BioChar IBI

Phil Blom  
 SweetPro  
 151 E. Dripping Springs  
 Columbia, MO 65202

Date Received: 1/6/2014  
 Sample Id.: 1000°F, Biomass: Oak Hardwood Sawdust  
 Sample id. Number 4010100

## International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated: Range	Units	Method
Moisture (time of analysis)	14.4	% wet wt.	ASTM D1762-84 (105c)
Organic Carbon	76.2	% of total mass	Dry Combust-ASTM D 4373
Hydrogen	4.2	% of total mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)	0.67 0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash	1.7	% of total mass	ASTM D-1762-84
Total Nitrogen	0.35	% of total mass	Dry Combustion
pH value	8.98	units	4.11USCC:dil. Rajkovich
Electrical Conductivity (EC20 w/w)	0.121	dS/m	4.10USCC:dil. Rajkovich
Liming (neut. Value as-CaCO3)	9.2	%CaCO3	Rayment & Higginson
Carbonate (as-CaCO3)	0.21	%CaCO3	ASTM D 4373
Butane Act.	4.51	g/100g dry	SCL
Surface Area Correlation	277	m2/g dry	SCL

All units mg/kg dry unless stated:		Range of	Meth. Det.	Particle Size Distribution			
	Results	Max. Levels	Limit (ppm)	Method	Results	Units	Method
Arsenic (As)	Below MDL	12 to 100	1.4	E	< 0.420mm	35.8 percent	F
Cadmium (Cd)	0.13	1.4 to 39	0.0047	E	0.420-2.38mm	48.7 percent	F
Chromium (Cr)	0.25	64 to 1200	0.014	E	2.38-4.76mm	12.9 percent	F
Cobalt (Co)	Below MDL	40 to 150	0.23	E	>4.76mm	2.5 percent	F
Copper (Cu)	3.87	63 to 1500	0.47	E	Basic Soil Enhancement Properties		
Lead (Pb)	0.47	70 to 500	0.093	E	Total (K)	2012 mg/kg	B
Molybdenum (Mo)	Below MDL	5 to 20	0.56	E	Available (K)	2001 mg/kg	C
Mercury (Hg)	0.018	1 to 17	0.0004	EPA 7471	Total (P)	39 mg/kg	B
Nickel (Ni)	0.85	47 to 600	0.047	E	Available (P)	13 mg/kg	C
Selenium (Se)	1.4	1 to 36	0.23	E	Ammonia (NH4-N)	0.23 mg/kg	A
Zinc (Zn)	2.8	200 to 7000	0.093	E	Nitrate (NO3-N)	0.62 mg/kg	A
Boron (B)	14	Declaration	0.93	TMECC	Organic (Org-N)	3524 mg/kg	Calc.
Chlorine (Cl)	21	Declaration	2.0	TMECC	Volatile Matter	98.3 percent dw	D
Sodium (Na)	104	Declaration	4.67	E			
Iron (Fe)	37	Declaration	0.47	E			
Manganese (Mn)	57	Declaration	0.093	E			

Method A Rayment & Higginson D ASTM D1762-84  
 B Enders & Lehmann E EPA3050B/EPA 6010  
 C Wang after Rajan F ASTM D 2862 Granular

Analysts: Frank Shields & Megan Nutt