

Control Laboratories

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Account No:
 11529
 Batch:
 Aug 21 E
 CODE:
 BioChar IBI

Date Received: 8/30/2021
 Sample ID: Char #1
 Lab ID. Number: 1080770-01

International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated: Range	Units	Method
Moisture (time of analysis)	7.0	% wet wt.	ASTM D1762-84 (105c)
Bulk Density	18.3	lb/cu ft	
Organic Carbon	84.0	% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)	0.39 0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash	8.3	% of total dry mass	ASTM D-1762-84
Total Nitrogen	0.77	% of total dry mass	Dry Combustion
pH value	8.03	units	4.11USCC:dil. Rajkovich
Electrical Conductivity (EC20 w/w)	0.311	dS/m	4.10USCC:dil. Rajkovich
Liming (neut. Value as-CaCO3)	7.0	%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)	2.7	%CaCO3	ASTM D 4373
Butane Act.	2.4	g/100g dry	ASTM D 5742-95
Surface Area Correlation	210	m2/g dry	G

All units mg/kg dry unless stated:		Range of		Reporting		Particle Size Distribution		
	Results	Max. Levels	Limit (ppm)	Method	Results	Units	Method	
Arsenic (As)	5.2	13 to 100	0.40	J	< 0.5mm	57.1 percent	F	
Cadmium (Cd)	ND	1.4 to 39	0.16	J	0.5-1mm	18.3 percent	F	
Chromium (Cr)	3.9	93 to 1200	0.40	J	1-2mm	20.3 percent	F	
Cobalt (Co)	0.44	34 to 100	0.40	J	2-4mm	4.2 percent	F	
Copper (Cu)	89.4	143 to 6000	0.40	J	4-8mm	0.0 percent	F	
Lead (Pb)	3.1	121 to 300	0.16	J	8-16mm	0.0 percent	F	
Molybdenum (Mo)	0.41	5 to 75	0.40	J	16-25mm	0.0 percent	F	
Mercury (Hg)	ND	1 to 17	0.001	EPA 7471	25-50mm	0.0 percent	F	
Nickel (Ni)	1.8	47 to 420	0.40	J	>50mm	0.0 percent	F	
Selenium (Se)	ND	2 to 200	0.80	J	Basic Soil Enhancement Properties			
Zinc (Zn)	31.2	416 to 7400	0.80	J	Total (K)	5096 mg/kg	E	
Boron (B)	10.5	Declaration	4.0	TMECC	Total (P)	381 mg/kg	E	
Chlorine (Cl)	84.4	Declaration	20.0	TMECC	Ammonia (NH4-N)	5.0 mg/kg	A	
Sodium (Na)	858	Declaration	399	E	Nitrate (NO3-N)	2.6 mg/kg	A	
Iron (Fe)	1705	Declaration	20.0	E	Organic (Org-N)	7734 mg/kg	Calc.	
Manganese (Mn)	85.9	Declaration	0.40	J	Volatile Matter	12.7 percent dw	D	

* "ND" stands for "not detected" which means the result is below the reporting limit.

Method A Rayment & Higginson
 D ASTM D1762-84
 E EPA3050B/EPA 6010
 F ASTM D 2862 Granular

G Butane Activity Surface Area Correlation Based on McLaughlin, Shields, Jagiello, & Thiele's 2012 paper: Analytical Options for Biochar Adsorption and Surface Area
 J EPA3050B/EPA 6020

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