

Control Laboratories

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Batch:
JUL 24 B
CODE:
BioChar IBI

Peter Bendorf
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P.O. Box 662
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Date Received: 7/9/2024
Sample ID: Corn Stover Biochar
Lab ID. Number: 4070166-01

International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated: Range	Units	Method
Moisture (time of analysis)	10.1	% wet wt.	ASTM D1762-84 (105c)
Bulk Density	9.7	lb/cu ft	
Organic Carbon	55.9	% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)	0.74 0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash	21.7	% of total dry mass	ASTM D-1762-84
Total Nitrogen	0.99	% of total dry mass	Dry Combustion
pH value	9.14	units	TMECC (2001) 4.11, 1:20 dilution
Electrical Conductivity (EC20 w/w)	1.09	dS/m	TMECC (2001) 4.10, 1:20 dilution
Liming (neut. Value as-CaCO3)	10.3	%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)	2.1	%CaCO3	ASTM D 4373
Butane Act.	0.7	g/100g dry	ASTM D 5742-95
Surface Area Correlation	155	m2/g dry	G

All units mg/kg dry unless stated:					Particle Size Distribution			
	Results	Max. Levels	Limit (ppm)	Method		Results	Units	Method
Arsenic (As)	1.1	13 to 100	0.50	J	< 0.5mm	40.0	percent	F
Cadmium (Cd)	0.27	1.4 to 39	0.20	J	0.5-1mm	17.0	percent	F
Chromium (Cr)	5.0	93 to 1200	0.50	J	1-2mm	19.2	percent	F
Cobalt (Co)	1.4	34 to 100	0.50	J	2-4mm	18.6	percent	F
Copper (Cu)	10.9	143 to 6000	0.50	J	4-8mm	4.6	percent	F
Lead (Pb)	2.8	121 to 300	0.20	J	8-16mm	0.7	percent	F
Molybdenum (Mo)	1.3	5 to 75	0.50	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)	4.9	47 to 420	0.50	J	>50mm	0.0	percent	F
Selenium (Se)	ND	2 to 200	1.00	J	Basic Soil Enhancement Properties			
Zinc (Zn)	61.4	416 to 7400	1.00	J	Total (Ca)	14390	mg/kg	E
Boron (B)	19.1	Declaration	5.0	TMECC	Total (Mg)	8002	mg/kg	E
Chlorine (Cl)	3525	Declaration	20.0	TMECC	Total (K)	15970	mg/kg	E
Sodium (Na)	ND	Declaration	500	E	Total (P)	1739	mg/kg	E
Iron (Fe)	8142	Declaration	25.0	E	Ammonia (NH4-N)	3.9	mg/kg	A
Manganese (Mn)	338	Declaration	0.50	J	Nitrate (NO3-N)	5.7	mg/kg	A
					Organic (Org-N)	9935	mg/kg	Calc.
					Volatile Matter	40.7	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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