

1 **Table 1. Characteristics of raw feedstocks and biochars (Windeatt et al. 2014) [Adapted with permission]**

Material	Units	Palm shell	Sugarcane bagasse	Rice husk	Coconut shell	Wheat straw	Cotton stalk	Olive pomace	Coconut fibre
<b>A. Raw materials</b>									
<b>Ultimate analysis</b>									
C <sup>a</sup>	%	53.1	45.9	42.5	52.6	48.1	46.0	49.2	44.7
H <sup>a</sup>	%	7.1	6.7	6.5	6.2	6.8	7.6	6.8	7.5
N <sup>a</sup>	%	0.7	0.9	1.3	2.0	1.8	5.6	2.0	0.8
S <sup>a</sup>	%	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
O(by diff)	%	46.8	59.2	46.0	53.1	49.0	54.5	45.8	61.8
H/C		1.6	1.7	1.8	1.4	1.7	2.0	1.6	2.0
O/C		0.7	1.0	0.8	0.8	0.8	0.9	0.7	1.0
<b>Proximate analysis</b>									
Moisture	%	3.0	5.8	5.7	5.7	5.6	6.1	5.7	7.5
Volatiles <sup>b</sup>	%	74.1	85.3	80.9	77.2	85.9	93.1	80.5	85.3
Fixed Carbon <sup>b</sup>	%	25.9	14.7	19.1	22.8	14.1	6.9	19.5	14.7
Ash <sup>c</sup>	%	2.0	4.4	19.6	0.6	7.9	4.2	4.5	5.3

B. Char									
Product yield									
char	%	31.8	27.7	39.0	28.2	30.3	28.0	30.5	30.8
oil	%	50.3	50.3	33.5	43.7	50.0	53.6	44.8	47.8
gas	%	17.9	23.6	21.8	28.1	17.6	18.4	29.2	25.1
Ultimate analysis									
C <sup>a</sup>	%	90.6	88.6	54.5	93.9	75.3	83.2	71.8	82.6
H <sup>a</sup>	%	2.8	2.8	2.1	3.0	2.6	3.2	2.8	2.7
N <sup>a</sup>	%	0.9	1.3	1.1	0.4	1.0	4.8	1.9	2.4
S <sup>a</sup>	%	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0
O(by diff)	%	7.9	13.7	5.4	2.6	4.5	14.2	11.6	12.8
H/C		0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.4
O/C		0.1	0.1	0.1	0.02	0.04	0.1	0.1	0.1
Proximate analysis									
Moisture	%	2.2	3.7	5.7	7.1	8.1	8.5	10.0	10.4
Volatiles <sup>b</sup>	%	11.5	30.1	13.9	8.1	21.2	28.8	20.9	25.1

Fixed carbon <sup>b</sup>	%	88.5	69.9	86.1	91.9	78.8	71.2	79.1	74.9
Ash <sup>c</sup>	%	6.7	13.0	47.0	4.1	23.4	9.5	18.1	13.5
Other characteristics									
CS <sup>d</sup>	%	32.5	27.3	26.0	28.7	21.3	23.8	24.5	26.8
pH		6.1	8.6	9.9	8.5	11.6	10.3	10.5	9.6
Surface area	M <sup>2</sup> g <sup>-1</sup>	220.0	149.1	114.9	222.5	6.3	121.2	1.2	23.2
Total pore volume	Cc g <sup>-1</sup>	0.16	0.18	0.10	0.15	0.01	0.05	0.00	0.04

2 a: As received basis, b: Dry ash free basis, c: Dry basis, and d: Carbon sequestration (CS) potential