

Paulownia woody biomass analysis:

Table 1

Characteristics of the fuel referenced with coal—proximate analysis

Fuel	Moisture (wt%)	Ash (wt% db)	Volatile matter (%)	Fixed carbon (%)	C.V (MJ/kg)
Paulownia	7.74	5.28	68.68	18.29	17.96
Bituminous coal	2.83 ± 0.66	20.08 ± 3.49	28.33 ± 1.89	49.08 ± 2.12	34

Table 2

Characteristics of the fuel referenced with coal—ultimate analysis

Fuel	N	C	S	H	O
Paulownia	0.70	48.14	0.04	7.88	39.84
Bituminous coal	1.13 ± 0.01	63.78 ± 2.33	0.97 ± 0.19	3.97 ± 0.38	10.08 ± 4.66

Table 3

Characteristics of the fuel referenced with coal—trace elements (ppm)(dry biomass basis)

Fuel	As	Ba	Cd	Co	Cr	Cu	Mn	Mo	Ni	Pb	Ti	V	Zn
Paulownia	0.4250	ND	0.5301	0.9251	5.8006	8.2258	51.7552	1.5002	11.2511	0.7501	45.0295	1.8752	84.1084
Bituminous coal	14.5	na	0.19	8.5	36.8	27.5	na	na	13.9	20.9	na	76.5	na

Table 4

Characteristics of the fuel—major elements (ash-forming elements)(dry biomass basis)

Al	Si	Ca	Fe	K	Mg	Na	P
595.0595	13.2513	12703.7704	2550.2550	6558.1558	2161.2161	140.0140	1102.6103

(Liao Cuiping, Wu Chuangzhi, Yanyongjie, Huang Haitao, 2004. Chemical elemental characteristics of biomass fuels in China.)