Quantum Fuel™

Energy content and concentrations of some elements in untreated biomass compared with coal

Type of biomass	Moisture % dry basis	Net calorific value MJ/kg	Total ash % dry basis	Volatile compounds
Sprucewood (with bark)	20-55	18.8	0.6	82.9
Beech-**wood** (with bark)	20-55	18.4	0.5	84
Poplar **wood** (Short rotation)	20-55	18.5	1.8	81.2
Willow **wood** (Short rotation)	20-55	18.4	2	80.3
Bark (softwood)		19.2	3.8	77.2
Rye straw		17.4	4.8	76.4
Wheat straw	15	17.2	5.7	77
Triticale straw	15	17.1	5.9	75.2
Barley straw	15	17.5	4.8	77.3
Rape straw	15	17.1	6.2	75.8
Corn straw	15	17.7	6.7	76.8
Sunflower straw	15	15.8	12.2	72.7
Hemp straw	15	17	4.8	81.4
Rice straw Husk	15	12 14	4.4 19	
Groundnut shells	3-Oct	16.7	Apr-14	
Coffee husks	13	16.7	8-Oct	
Cotton husks	5-Oct	16.7	3	
Coconut husks	5-Oct	16.7	6	
Oil palm husks	55	8	5	
Rye whole crop		17.7	4.2	79.1
Wheat whole crop		17.1	4.1	77.6
Triticale whole crop		17	4.4	78.2
Miscanthus		17.6	3.9	77.6
Rye grain		17.1	2	80.9
Wheat grain		17	2.7	80
Triticale grain		16.9	2.1	81
Rape grain		26.5	4.6	85.2
Olives (pressed)	15-18	16.7	3	
Corncobs	15	13.4	15-20	
Sugar cane stalk (bagasse)	40-50	8	4	80
Hay from various sources		17.4	5.7	75.4
Road side green		14.1	23.1	61.7
Hard coal		29.7	8.3	34.7
Lignite	50	20.6	5.1	52.1