

Energy content for various biomass (dry weight basis)

Raw material	KJ/Kg (KiloJoule/Kg)		Kcal/Kg (Kilo calories/Kg)		Btu/Kg (British thermal unit/Kg)	
	lower calorific value	higher calorific value	lower calorific value	higher calorific value	lower calorific value	higher calorific value
Softwood	17500	21100	4183	5043	16590	20003
Hardwood	18600	20700	4445	4947	17633	19624
Oak wood	17400	18800	4159	4493	16495	17822
Birch wood	18700	20100	4469	4804	17728	19055
Pine wood	19500	20800	4661	4971	18486	19718
Douglas pine wood	19700	21000	4708	5019	18676	19908
Spruce wood	18500	19800	4422	4732	17538	18770
Cherry wood	17900	19100	4278	4565	16969	18107
Cypress wood	21500	23000	5139	5497	20382	21804
Elm wood	19000	20500	4541	4900	18012	19434
Eucalyptus wood	18300	19600	4374	4684	17348	18581
Maple wood	18700	20000	4469	4780	17728	18960
Larch wood	18700	20100	4469	4804	17728	19055
Poplar wood	19400	20800	4637	4971	18391	19718
Teak wood	18900	20200	4517	4828	17917	19150
Coconut trunk wood	16600	17800	3967	4254	15737	16874
Willow wood	17300	18600	4135	4445	16400	17633
Hardwood bark	18300	19600	4374	4684	17348	18581
Oak bark	18300	19300	4374	4613	17348	18296
Pine bark	19700	21000	4708	5019	18676	19908
Spruce bark	19100	20300	4565	4852	18107	19244
Cedar bark	19800	21100	4732	5043	18770	20003
Douglas fir bark	20800	22100	4971	5282	19718	20951
Eucalyptus bark	17.300	18.500	4135	4422	16400	17538
Miscanthus/Napier grass	17800	19100	4254	4565	16874	18107
Switchgrass	16800	19100	4015	4565	15926	18107
Bamboo	19000	19800	4541	4732	18012	18770
Alfalfa	17030	18500	4070	4422	16144	17538

Lucerne	17700	19000	4230	4541	16780	18012
Cotton gin trash	15200	16300	3633	3896	14410	15452
Cotton stalks	17000	18300	4063	4374	16116	17348
Flax	17800	18800	4254	4493	16874	17822
Hemp	16500	17600	3944	4206	15642	16685
Jute stick	17800	19400	4254	4637	16874	18391
Grass	17000	18100	4063	4326	16116	17159
Hay	16200	18300	3872	4374	15358	17348
Corn stalks/stover	16800	18500	4015	4422	15926	17538
Sugar cane bagasse	17700	19400	4230	4637	16780	18391
Wheat straw	15000	18900	3585	4517	14220	17917
Rice straw	13500	14800	3227	3537	12798	14030
Rice husk	14200	15400	3394	3681	13462	14599

Values are indicative for the lower and higher heating value on dry basis.

Source: Energy research center of the Netherlands