

Quality characteristics of sugarcane bagasse biopellets from different blending ratios

Parameters	Biopellets sample ID								SNI 8675:2018	
	B1R0	B1R1	B1R2	B1R3	B2R0	B2R1	B2R2	B2R3	Households	Industry
Moisture content (%)	5.35±0.04	6.15±0.10	6.26±0.07	6.38±0.23	5.35±0.04	6.18±0.12	6.28±0.11	6.30±0.23	max. 10	max. 12
Ash content (%)	4.90±0.28	6.87±0.33*	7.63±0.49*	9.28±1.25*	6.33±0.47*	9.77±1.12*	9.82±0.79*	9.83±0.59*	max. 5	max. 5
Volatile matter (%)	76.83±2.10	71.90±1.03	71.57±1.02	68.54±0.94	73.93±0.92	69.25±0.95	68.60±0.72	68.14±1.50	max. 75	max. 80
Fixed carbon (%)	12.93±2.30*	15.08±0.98	14.55±1.45	15.81±0.59	14.40±1.34	14.80±1.86	15.30±1.37	15.73±1.86	min. 14	min. 14
Calorific value (MJ/kg)	16.79±0.22	16.13±0.15*	16.00±0.19*	15.41±0.67*	16.33±0.50*	15.55±0.88*	16.29±0.13*	15.98±0.14*	min. 16.50	min. 16.50
Density (g/cm ³)	0.81±0.02	0.87±0.02	0.88±0.03	0.83±0.02	0.92±0.01	0.89±0.029	0.93±0.06	1.03±0.04	min. 0.60	min. 0.80
Compressive strength (N/mm ²)	69.68±3.46	77.27±3.50	46.49±2.80	57.56±4.96	62.24±6.98	48.29±5.37	42.02±8.78	44.71±3.05	-	-
Modulus Young (N/mm ²)	787.24±13.06	738.76±11.34	819.67±13.05	777.15±32.06	753.47±33.24	769.41±31.92	778.57±6.08	704.45±26.01	-	-
Burning rate (g/min)	0.16±0.01	0.18±0.03	0.15±0.02	0.16±0.01	0.14±0.01	0.15±0.01	0.16±0.01	0.16±0.01	-	-