

SUPPLEMENTARY DATA

Supplementary Table 1: Thermal properties of the bio-composites containing mixed faba bean pods and stems.

Samples	TGA				DSC					
	T _o (°C)	T _{deg1} (°C)	T _{deg2} (°C)	Residue mass (%)	PBSA			PHBV		
					T _{m1} (°C)	T _{m2} (°C)	T _{mc1} (°C)	T _{m1} (°C)	T _{m2} (°C)	T _{mc2} (°C)
PBSA: PHBV (85/15)	296.33 ± 0.58 ^d	307.00 ± 1.00 ^c	407.00 ± 2.65 ^c	0.00 ± 0.00 ^a	77.40 ± 0.36 ^c	87.40 ± 0.30 ^b	51.33 ± 0.23 ^c	168.83 ± 0.15 ^d	173.00 ± 0.00 ^a	100.40 ± 0.34 ^c
PBSA: PHBV – 10 % mixed pods and stems	268.43 ± 2.26 ^c	278.23 ± 2.87 ^b	402.00 ± 1.59 ^b	3.40 ± 0.83 ^b	71.40 ± 0.30 ^a	86.43 ± 0.12 ^a	42.30 ± 0.70 ^a	167.73 ± 0.42 ^c	173.57 ± 0.38 ^a	99.07 ± 1.24 ^c
PBSA: PHBV – 20 % mixed pods and stems	262.33 ± 0.58 ^b	271.33 ± 0.58 ^a	398.00 ± 1.00 ^{ab}	7.00 ± 0.00 ^c	72.47 ± 0.31 ^b	86.40 ± 0.20 ^a	42.93 ± 0.83 ^{ab}	165.77 ± 0.67 ^b	173.00 ± 0.53 ^a	94.37 ± 1.81 ^b
PBSA: PHBV – 30 % mixed pods and stems	258.97 ± 0.59 ^a	269.00 ± 1.47 ^a	394.37 ± 1.89 ^a	9.06 ± 0.37 ^d	72.43 ± 0.21 ^b	86.17 ± 0.32 ^a	43.80 ± 0.40 ^b	164.80 ± 0.17 ^a	172.87 ± 0.15 ^a	91.30 ± 1.14 ^a

T_o is onset degradation temperature, T_{deg} is the peak degradation temperature (local maximum of DTG curve). T_m is the melting temperature, T_{mc} is the melt crystallisation temperature, ΔH_m is the melting enthalpy and X_c is the total crystallinity of the polymer blend determined by DSC.