

Table S1. Comparative analysis of the FTIR spectra of the blends with 20% and 70% starch compared with those of the individual components.

Spectral range, cm ⁻¹	Wave number, cm ⁻¹ / Intensity, a.u				Comments
	Compound	Starch	PVA	Plast.	
-3000 (O-H stretch)	a)20 % S M:3340 / 0.25 b)70 % S M:3340 / 0.20	3273 / 0.15	M:3286 / 0.051	M:3274 / 0.32	From 3 P - resulted 1, without Shd. Near S/PVA/G: shifting with 67 cm ⁻¹ /54 cm ⁻¹ / 66 cm ⁻¹ . HP: (a) 20 % S: ↑ 66 % / ↑ 80 % / ↓ 22 % (b) 70 % S: ↑ 46 %, ↑ 77%, ↓ 32 %
3000 -2800 (C-H and)-H stretch	a)20 % S M:2916/0.125 b)70 % S M:2940 / 0.09	2920 / 0.08	M;2935/ 0.043 M:2909 / 0.04	0.18 0.18	From 5 P- resulted 1 P at 2916 cm ⁻¹ for (a) and 2940 cm ⁻¹ for (b) Shd: (a) la 2851 cm ⁻¹ (b) la 2912 cm ⁻¹ . P for a) shifted with 7 cm ⁻¹ near PVA. P for b) shifted with 20 cm ⁻¹ near 2920 cm ⁻¹ from S and with 5 cm ⁻¹ near 2935 cm ⁻¹ from PVA. I ↑ near I from S, PVA, P for a) cu 36 %; 34 %; 44 %; for b) cu 12 %; 63 %; 19 %.
1750 -1500 (C=O and C-C stretch)	a)20 % S M: 1624/0.245 Shd:1713 si 1663 b)70 % S M: 1624/0.21 U:1713 si1663	1637 / 0.03	M:1731 / 0.05 M: 1569/0.01	M:1653 / 0.04	From 4 P - resulted 1 P with Shd. a): M -new, Shd:1713 shifted with 60 cm ⁻¹ near 1569 cm ⁻¹ din P; 1663cm ⁻¹ with 26 cm ⁻¹ near S from 1637 cm ⁻¹ . 1731 cm ⁻¹ doesn't appear. I: Near S/PVA/G: ↑83 % / 77 % - 98 %/82 %. b) b) Near S/PVA/G smaller with ↓83 %/↓77 % - 96 % / ↓ 82 %
1500 – 1300 (C-C stretch, C-H rock)	a)20 % S M:1444 / 0.15 Shd:1375 si 1332 b)70 % S M:1452 Shd: 1375 s1335	M: 1337 / 0.08 Shd.: 1415 Idem	M1:1432 / 0.04 M2:1372 / 0.042 Shd:1329 / Idem	Max: 1416/0.1 Shd1:1455 Shd2:1329 Idem	From 5 P with 5 Shd -resulted 1 with 2 Shd:(a) P 1444 cm ⁻¹ can be the SHd from G from 1445 cm ⁻¹ . 1375 cm ⁻¹ -shifted with 37 cm ⁻¹ near M from S at 1337 cm ⁻¹ . The Shd from 1375 cm ⁻¹ from PVA at 1372 cm ⁻¹ shifted with 2 cm ⁻¹ a. Shd from 1332 cm ⁻¹ can be the shd from 1329 cm ⁻¹ from PVA and/or P shiefted with 3 cm ⁻¹ . I near S/PVA/P: ↑47 %/↑73 %- 21 % / ↑33 % (b) P can be the Shd from G at 1445 cm ⁻¹ shiefted with 8 cm ⁻¹ . I: ↓ 20 %/↓50 %/↓67 %. Shd idem with (a).
1300 – 1180 (C-O stretch)	a)20 % S M:1250 / 0.15 b)70 % S	1240 / 0.05	M:1240/0.075	M:1213/0.05	Form 3 P -resulted 1 shifted with 10 cm ⁻¹ fata de S and PVA and a T 37 cm ⁻¹ ; I near S/PVA/G: ↑ 67 %/50 %/67 %. Idem; I: near S/PVA/G: ↑ 53 %/ 45 %/ 59
1180 -950 (C-O strtiche, O-H bend)	a)20 % S M:1050 / 0.285 b)70 % S M:1024 / 0.23 Shd: 1077, 1044	M: 1149 / 0.1 Shd:1077/0.15 Shd:955/0.37 Idem	M:1088/0.08 M:1024/0.07 Idem	M:1109/0.18 Shd1:1035/0.45 Shd2:994/0.18 Idem	a) From 8 P-resulted 1 which can be shiftat with 55 cm ⁻¹ near 955 cm ⁻¹ from S; With 15 cm ⁻¹ and 64 cm ⁻¹ near P from 1035cm ⁻¹ si 944 cm ⁻¹ from PVA and G. Do not apper: 1149 cm ⁻¹ and 1077 cm ⁻¹ from S; 2 P from PVA and 1109 cm ⁻¹ from G b) From 8 P- resulted 1 with absorbtion at 1024 cm ⁻¹ as in PVA. The Shd from1077 cm ⁻¹ identically as in S. 5 absorptions disappear. Aare higher than the A from individual components with the following exceptions when they are lower by 60% compared to 955 cm ⁻¹ from S and by 60% compared to 994 cm ⁻¹ from G.
950 – 900 (O-H bend)	a)20 % S M :922 / 0.03 b)70 % S	M:930/0.08	M:945/0.02	M:994/0.18 M:924/0.15	From 4 P -resulted 1 without Shd. All the other P of individual components disappear. Idem
900 – 700 (C-H oop)	a)20 % S 851/0.75 b)70 % S 852 / 0.8	M:859/0.06 M:762/0.062	M:845/0.035	M:924/0.085 M:852/0.05	From 5 P-resulted shifted with 6 cm ⁻¹ near 845 cm ⁻¹ from PVA; the same with those from G from 852 cm ⁻¹ . 3 P do nor appear. I: 90 % ↑ as individual components Idem a)