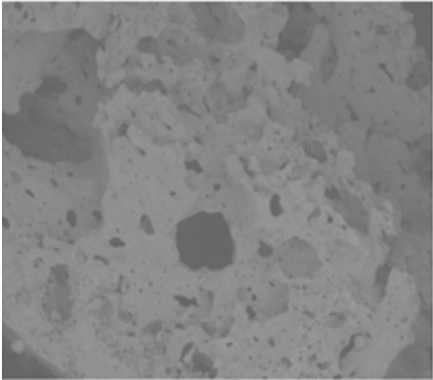
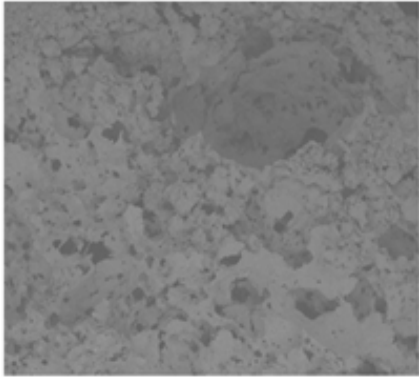


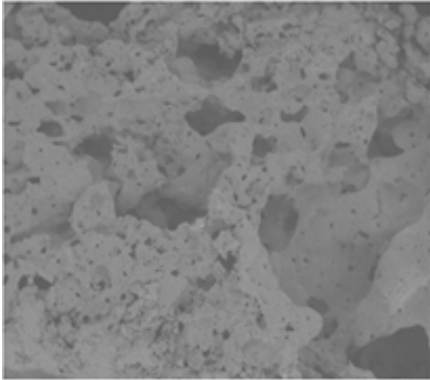
Shortbread with sucrose (S)



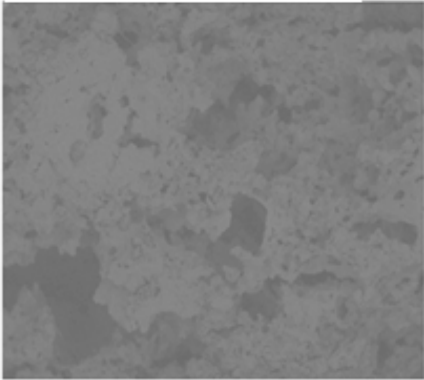
SWF



TWF

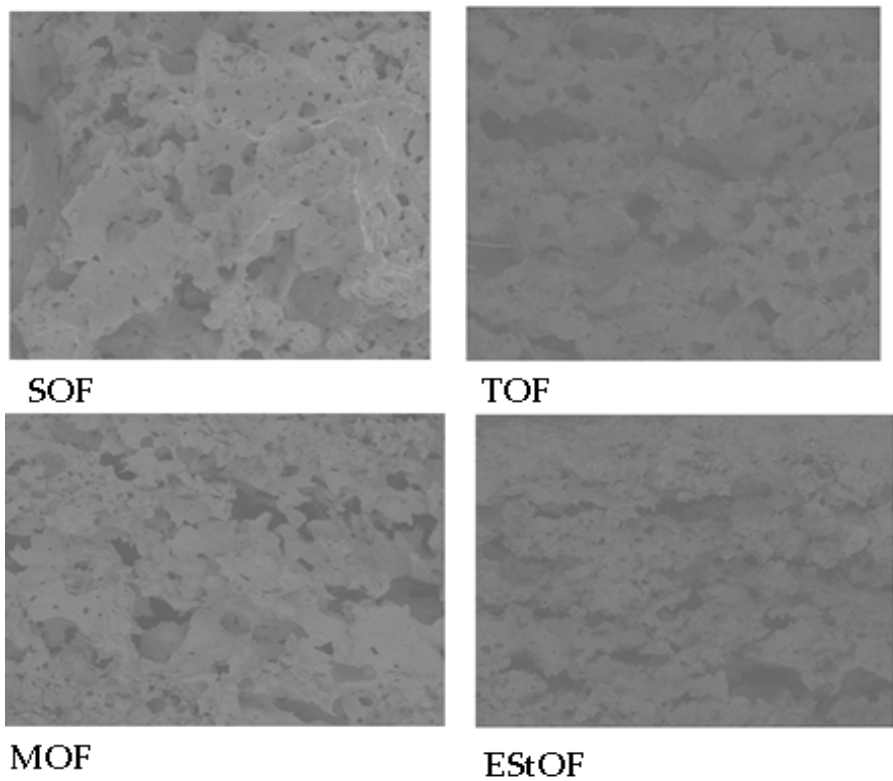


MWF



EStWF

(a) shortbread biscuits with various sweeteners and wheat fiber (Nutriose)



(b) shortbread biscuits with various sweeteners and oat fiber (Promoat35)

Figure S1. The structure of shortbread biscuits with various sweeteners (S—sucrose, T—Tagatose, M—maltitol, ESt—erythritol-stevia) and with the addition of fibre: (a) wheat fibre (WF), (b) oat fibre (OF).

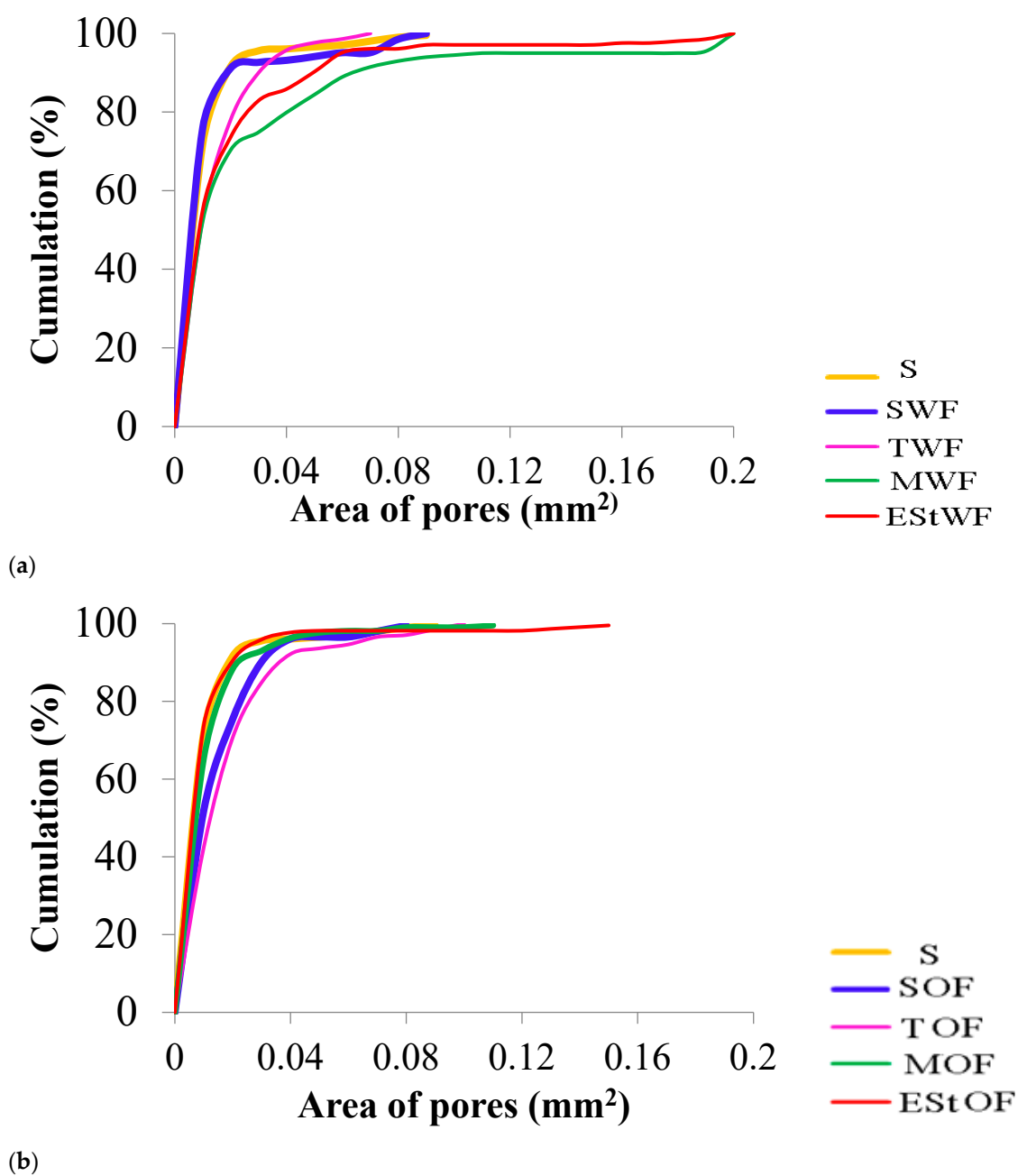
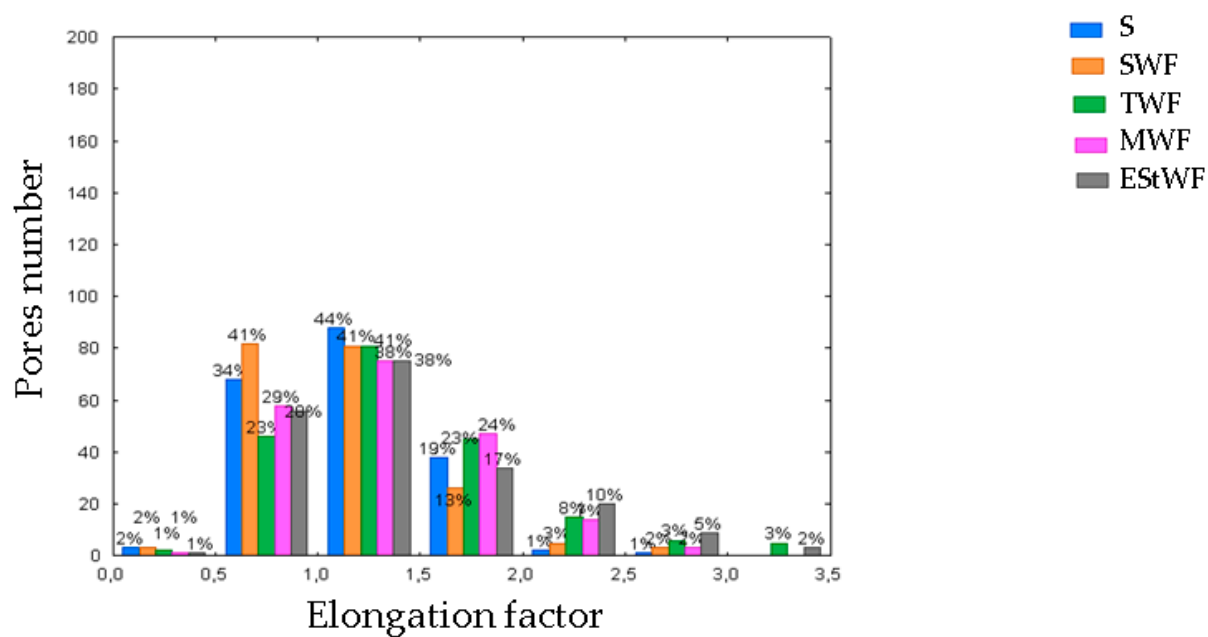
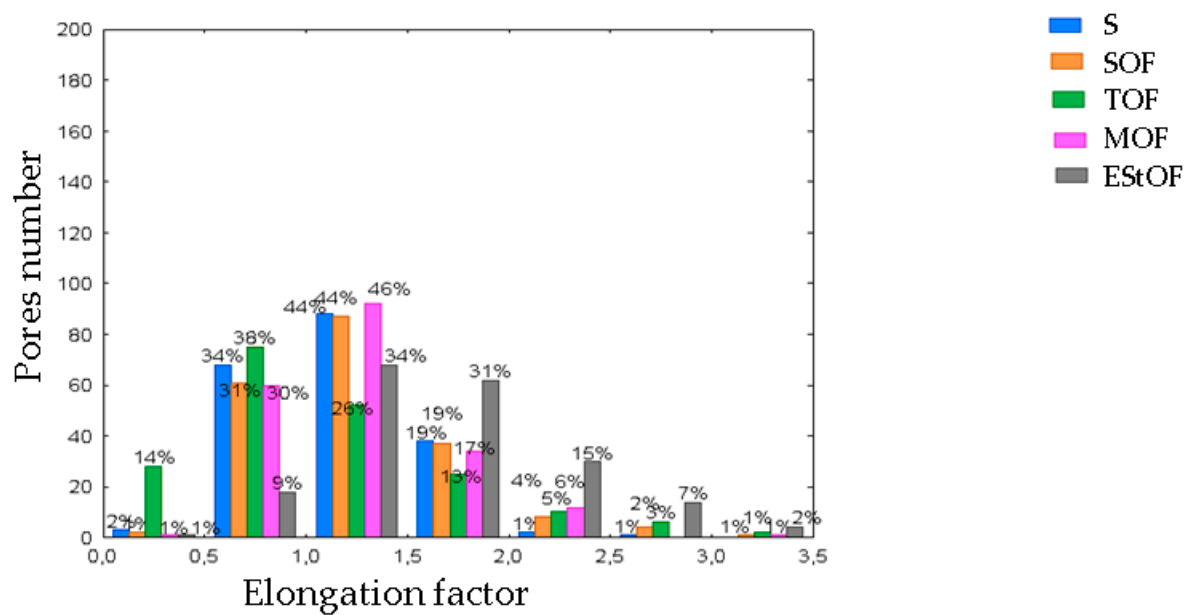


Figure S2. Cumulative distribution of the pore area in the shortbread biscuits with different sweeteners (S—sucrose, T—Tagatose, M—maltitol, ESt—erythritol-stevia) and with the addition of fibre: (a) wheat fibre (WF), (b) oat fibre (OF).



(a)



(b)

Figure S3. Distribution of the pore elongation factor in shortbread biscuits with different sweeteners (S—sucrose, T—Tagatesse, M—maltitol, ESt—erythritol-stevia) and with the addition of fibre: (a) wheat fibre (WF), (b) oat fibre (OF).

Table S1. Pearson correlation coefficient (r) between sensory properties and rheological, physical, structural and textural parameters of shortbread biscuits (* - significant correlations at $P < 0.05$).

Parameters	Appearance	Crispness	Sweetness	Taste	Overall acceptability
Appearance	1.000	0.262	0.383	0.468	0.456
Crispness	0.262	1.000	0.919*	0.951*	0.966*
Sweetness	0.383	0.919*	1.000	0.962*	0.953*
Taste	0.468	0.951*	0.962*	1.000	0.995*
Overall acceptability	0.456	0.966*	0.953*	0.995*	1.000
Stickiness (g)	-0.463	-0.200	-0.294	-0.231	-0.259
Work of Adhesion (g·s)	-0.472	-0.228	-0.308	-0.253	-0.284
Dough Strength (mm)	-0.475	-0.214	-0.303	-0.235	-0.267
Water content (g / 100 g)	-0.636	-0.502	-0.551	-0.612	-0.624
Water activity (-)	0.225	-0.754*	-0.573	-0.633	-0.640
Apparent density (kg/m ³)	0.085	-0.621	-0.477	-0.577	-0.576
True density (kg/m ³)	-0.491	-0.329	-0.117	-0.242	-0.304
Porosity (%)	-0.116	0.796*	0.646	0.693*	0.714*
Pores area (mm ²)	-0.257	-0.224	-0.245	-0.356	-0.341
Shape coefficient (-)	-0.148	-0.187	-0.107	-0.292	-0.252
Elongation factor (-)	-0.094	-0.551	-0.434	-0.552	-0.572
Fracturability (mm)	0.326	0.656	0.714*	0.704*	0.723*
Hardness (N)	0.080	-0.399	-0.438	-0.428	-0.387
Energy of AE event (mJ)	-0.153	0.135	-0.086	-0.019	-0.003
Number AE events	0.140	0.903*	0.765*	0.832*	0.836*
L*	-0.066	0.069	0.185	0.155	0.140
a*	-0.121	-0.338	-0.350	-0.391	-0.386
b*	-0.161	-0.517	-0.490	-0.536	-0.549