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2 **OSM tables and figures**

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4 **Supplementary Table 1.** Pairwise correlations of investigated parameters before and after simulated
5 gastro-intestinal digestion, showing Pearson correlation coefficients.

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	Before digestion				After digestion				
	Total Phenolics	Total Flavonoids	Total ABTS	Total FRAP	Total Phenolics	Total Flavonoids	Total ABTS	Total FRAP	Dietary Fiber
Total Phenolics	1				1				
Total Flavonoids	0.788*	1			0.647*	1			
Total ABTS	0.777*	0.680*	1		0.746*	0.688*	1		
Total FRAP	0.885*	0.769*	0.894*	1	0.830*	0.721*	0.724*	1	
Dietary Fiber	n.a	n.a.	n.a.	n.a.	0.570*	0.742*	0.772*	0.741*	1

7 *correlation is significant at the 0.05 level (2-tailed)*, 0.01** and 0.001* level.

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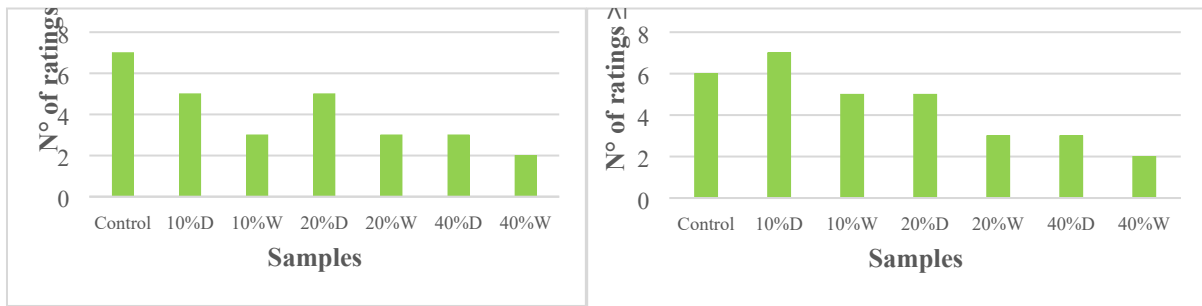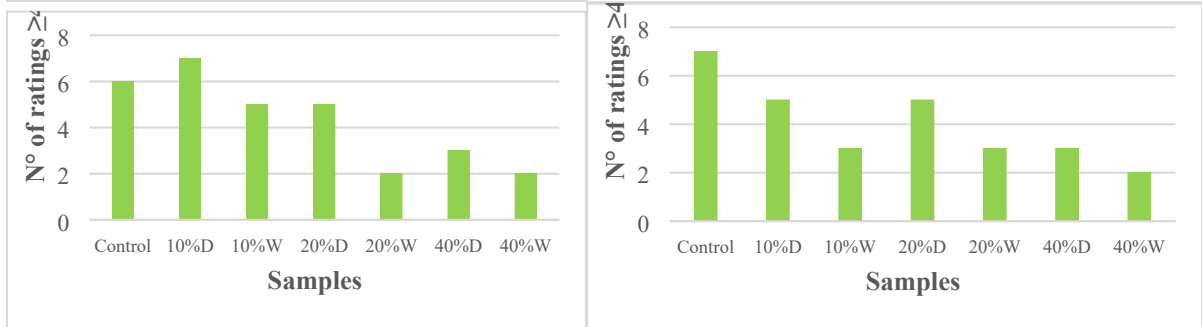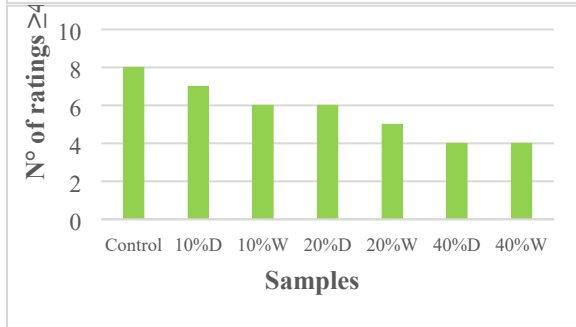
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Supplementary Figure 1. Home-baked bread samples were subject to a limited sensory evaluation (n = 10) based on a self-administered questionnaire. The evaluation addressed the characteristics of the home-baked samples, namely Tasting (A), Texture (B), Visual Appearance (C), Smell (D) and Commercial Acceptance (E) with a Likert scale question for each characteristic from 1 being very bad to 5 being very good. The evaluation of each sample was recorded separately for each participant. The results are reported as the frequency of each individual sample of the home-baked bread receiving either a good or very good evaluation (4 or 5 on the Likert scale, respectively) from the participants. It should be noted that only 7 samples, 10% D, 20% D, 40% D, 10% W, 20% W, 40% W and 0% BSG control bread were included in the survey as bread samples with higher BSG concentrations crumbled, fragmented and were difficult to handle by the participants.
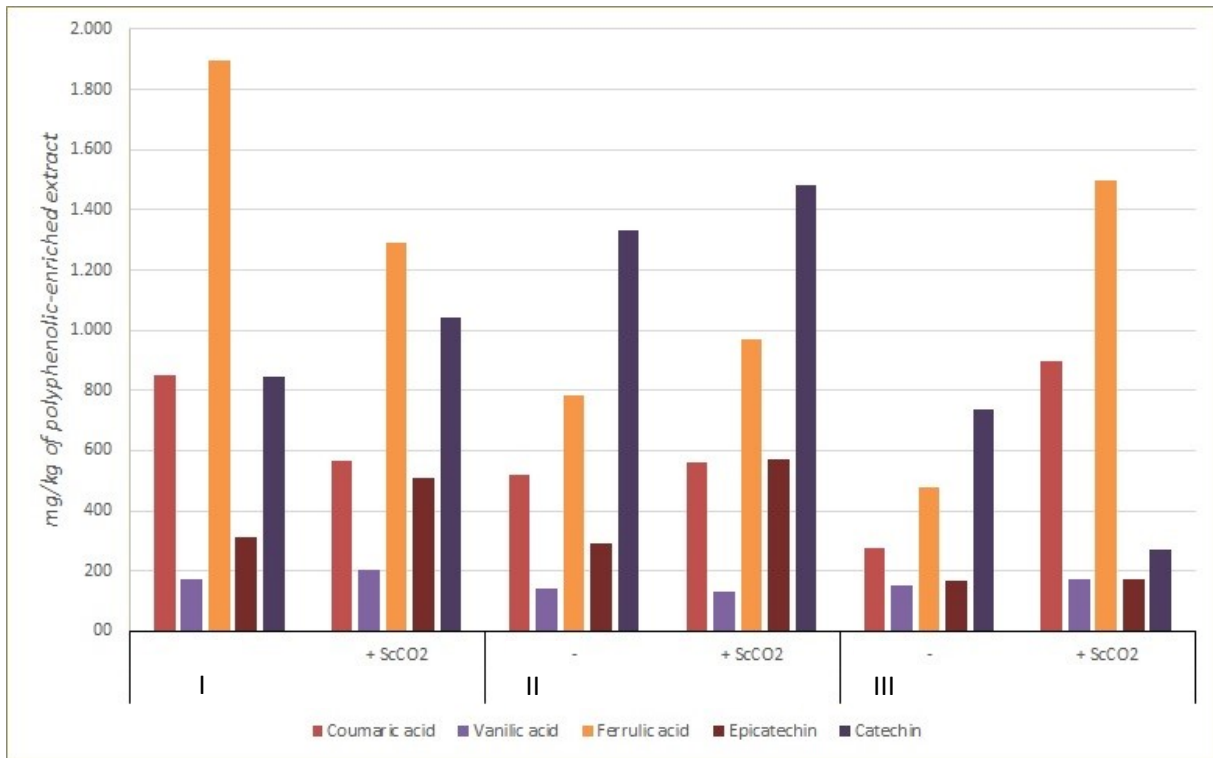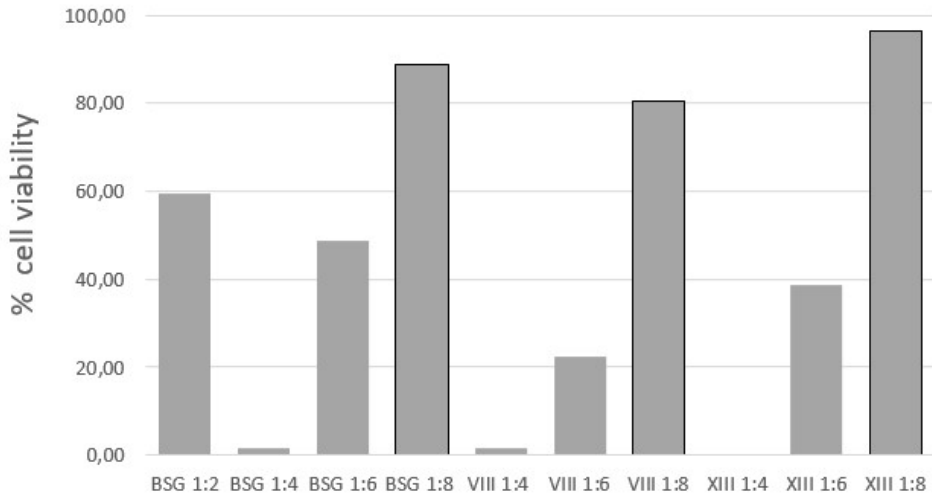
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Supplementary Figure 2. Analyses of main individual polyphenols in the 3 (I, II, II) analysed BSG varieties using UPLC-TQ-MS analysis. More explanations are given in materials and methods. ScCO2= with supercritical CO_2 treatment.

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70 **Supplementary Figure 3**. Dilution tests for the determination of the appropriate dilution factor
71 according to cell viability, expressed in % compared to media exposed cells. Samples tested were BSG
72 II, bread VIII (10% BSG content) and bread XIII (100% BSG content). N=2 per sample.

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