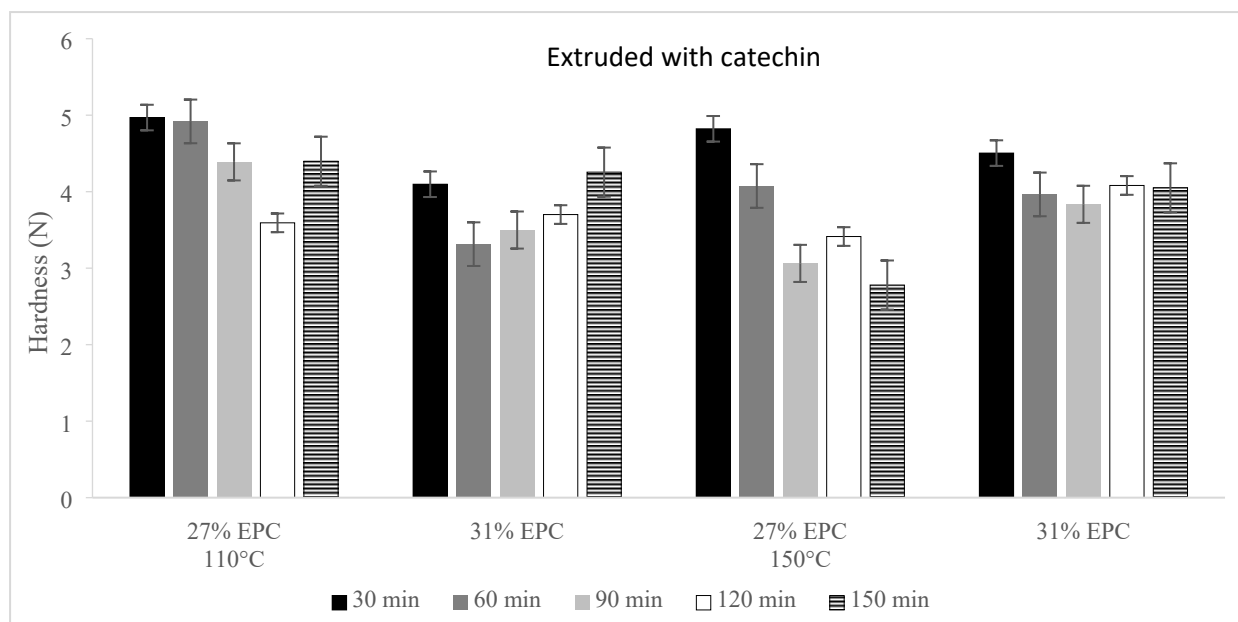
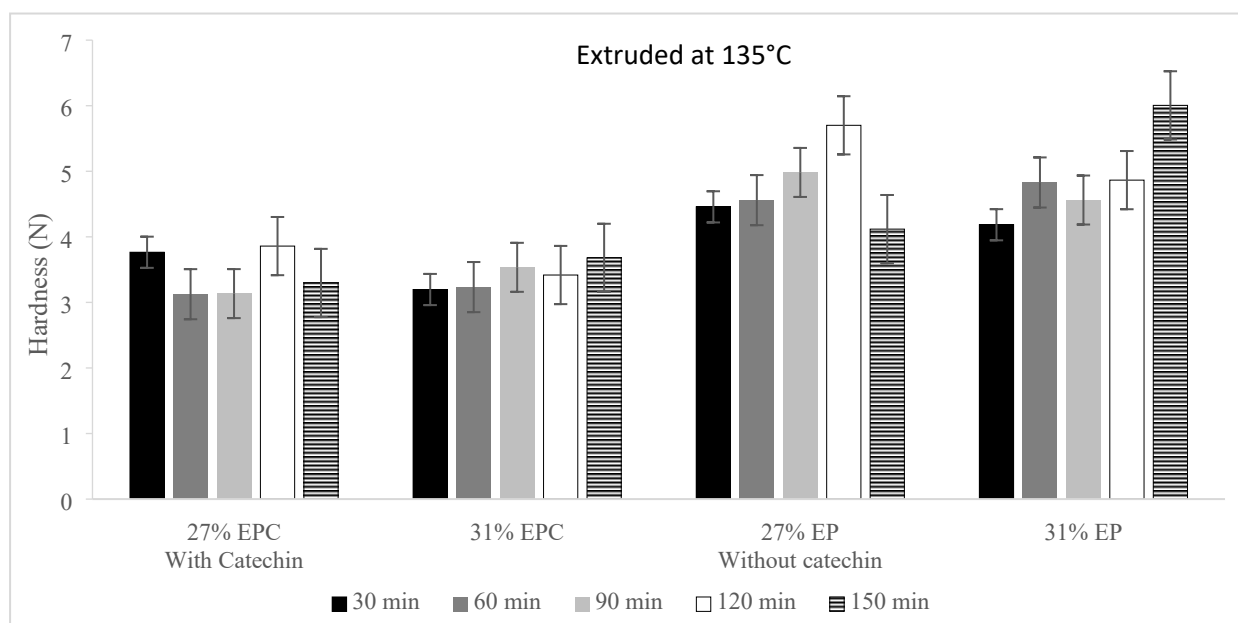


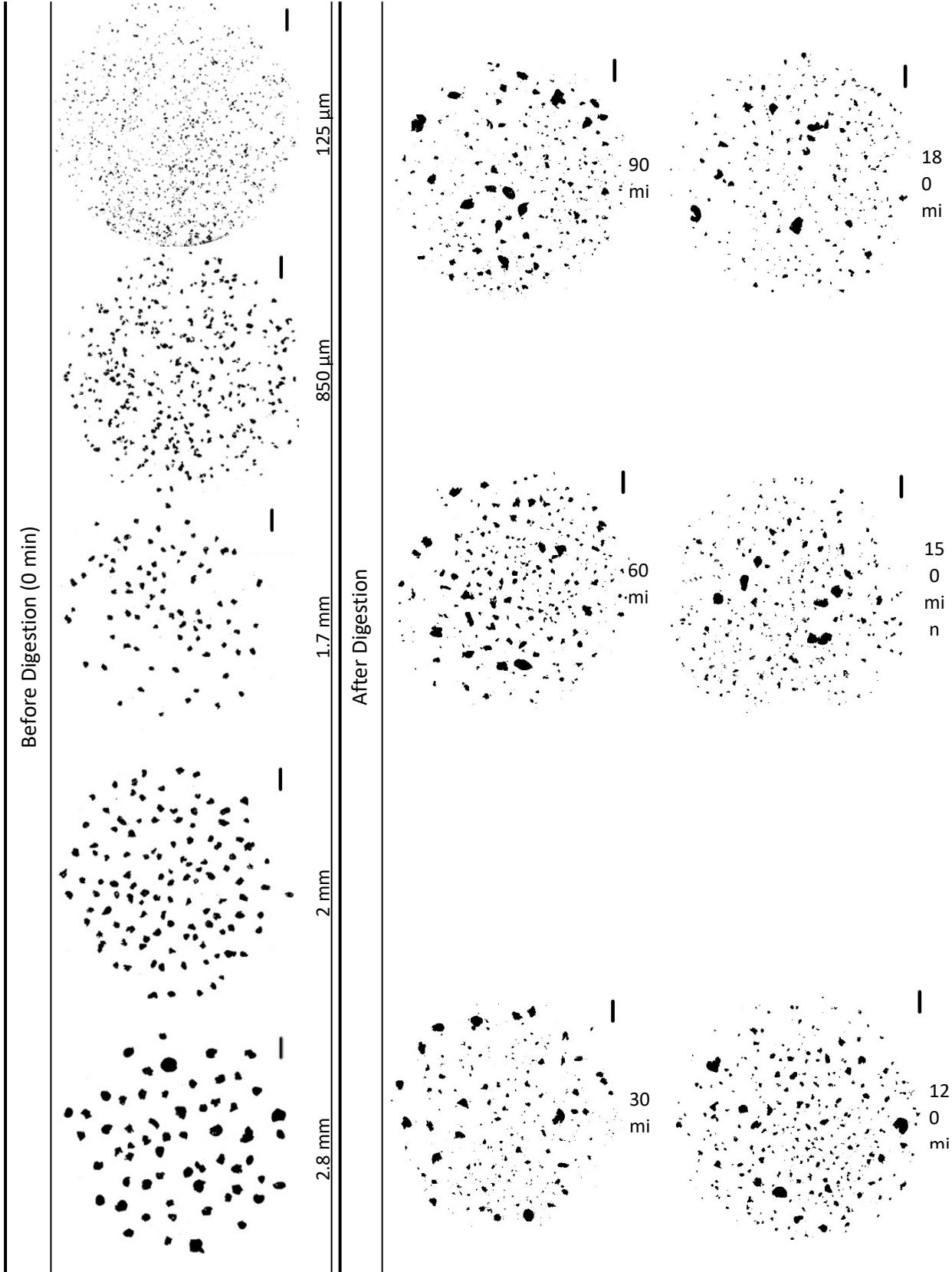
A)



B)



**Supplemental Figure 1.** A and B) Hardness of emptied gastric digesta from the HGS every 30 min up to 150 min (digestion time) of expanded products enriched with and without catechin at different moisture levels (27 or 31%) and processed using different extrusion temperatures (110, 135, or 150°C). Results are expressed as mean (n=3) ± 95% confidence interval.



**Supplemental Figure 2** Examples of binary images of extruded 3G snacks (previously sieved) and gastric digesta used for extraction of particle size parameters for the expanded product at 27% moisture content and 150°C before digestion and after 30 up to 180 min gastric digestion. The scale bar represents 1 cm and is the same for all images.

**Supplemental Table 1** Particle size parameters (x50 and b derived from the Rosin-Rammler equation <sup>41</sup>) after gastric digestion (30 min up to 180 min) of the expanded products enriched with (EPC) and without catechin (EP) at different moisture levels (27 or 31%) and processed using different extrusion temperatures (110, 135, or 150°C). Values shown are mean (n=3) ± 95% confidence interval.

T	110°C		135°C				150°C	
M	27% EPC	31% EPC	27% EPC	31% EPC	27% EP	31% EP	27% EPC	31% EPC
(min)	Median particle area [X50 (mm <sup>2</sup> )]							
0	4.79±0.07	7.57±0.2	15.46±4.94	15.38±6.6	12.07±4.43	12.55±3.76	6.36±0.64	6.42±0.99
30	6.84±0.87	6.99±0.78	4.92±0.97	4.8±1.05	5.31±0.96	8.65±1.65	9.02±1.64	5.62±1.02
60	6.5±0.9	6.6±0.8	5.87±1.18	5.54±0.56	8.1±1.32	7.82±0.9	6.5±1	6.57±1
90	7.75±1.16	7.7±1.8	5.8±1.14	6.91±1.2	8.12±1.31	7.59±1.27	7.72±0.88	5.96±0.99
120	7.69±1.25	8.25±1.4	5.31±0.5	5.95±1.23	12.93±3.45	8.65±3.27	11.17±4.6	7.5±1.17
150	6.62±1.18	7.72±1.26	7.1±2.07	7.99±1.45	10.62±4.67	7.81±1.92	7.68±2.08	7.7±2.02
180	6.65±2.61	8.97±3.08	5.14±3.69	6.29±1.48	9.73±3.09	5.07±0.8	5.82±2.1	10.65±4.23
	Distribution breadth constant [b (dimensionless)]							
0	0.55±0.09	0.52±0.09	0.42±0.07	0.43±0.19	0.28±0.1	0.31±0.06	0.57±0.1	0.5±0.15
30	4.11±0.78	3.65±0.46	3.07±1.02	4.23±0.59	3.32±0.69	2.84±0.51	3.95±0.53	4.37±0.34
60	4.47±0.67	5.43±0.33	3.22±0.95	4.54±0.57	3.21±0.65	2.98±0.41	5.91±0.85	5.56±0.52
90	4.47±0.56	5.93±1.05	3.48±0.56	4.15±0.41	3.95±0.93	3.82±0.99	5.86±1.02	5.99±0.67
120	6.13±1.53	6.1±1.52	4.47±0.87	6.04±1.3	5.99±2.56	7.25±5.96	6.4±2.7	5.52±0.45
150	7.4±0.88	5.8±0.52	4.94±1.48	6.15±1.07	8.55±3.48	4.63±1.16	6.77±1.33	6.76±0.52
180	16.42±6.89	6.43±1.87	5.47±1.54	11.33±4.06	26.88±14.56	7.3±2.54	14.93±9.55	5.39±0.75
	Number of particles/g dry matter (dimensionless)							
0	4689±2786	3853±370	4429±3158	2811±1017	2149±1006	2116±727	3740±1225	3990±1238
30	1863±190	2258±293	4441±882	4447±1399	3750±826	2072±446	1285±171	2218±297
60	1834±316	1900±159	3632±675	2933±851	2299±509	2202±367	1698±410	1974±299
90	1642±334	1689±286	2946±314	2757±546	2215±587	2215±468	1702±298	2051±295
120	1633±343	1540±275	3269±606	2560±405	1658±495	1809±425	1321±417	1764±282
150	2357±437	1652±249	2919±685	2161±535	3327±1986	2542±632	2160±799	2189±351
180	2812±708	2368±722	6512±2440	3389±752	5191±3965	3353±720	3353±604	2366±1259

\*DG= digestion time

**Supplemental Table 2** Digestion time used for analysis of the total starch hydrolysis analysis was the combination of gastric digestion plus small intestinal digestion. 0 min intestinal time (first row) represents samples taken directly after the gastric phase with no intestinal digestion. Values from all samples with the same total gastrointestinal time was summed to determine the total starch hydrolysis at each time.

		Gastrointestinal time (min)					
Gastric Time →		30 min	60 min	90 min	120 min	150 min	180 min
Intestinal Time ↓		G+I	G+I	G+I	G+I	G+I	G+I
0 min		30	60	90	120	150	180
30 min		60	90	120	150	180	210
60 min		90	120	150	180	210	240
90 min		120	150	180	210	240	270
120 min		150	180	210	240	270	300
150 min		180	210	240	270	300	330
180 min		210	240	270	300	330	360