

Phenolic extraction of *Moringa oleifera* leaves in DES: characterization of the extracts and their application in methylcellulose films for food packaging

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Supplementary Materials:

Table S1: Colour parameters for bread (unwrapped control);

Table S2: Colour parameters for bread wrapped in MC 2% film;

Table S3: Colour parameters for bread wrapped in MC 2% _DES 10% film;

Table S4: Colour parameters for bread wrapped in MC 2% _MO 10% film.

Table S1. Colour parameters for bread (unwrapped control)

Day	L*	a*	b*	a*/b*
0	54.58 ± 3.04 ^a	-0.33 ± 0.09 ^a	3.65 ± 0.20	-0.09041
1	56.95 ± 1.92 ^a	-0.59 ± 0.02 ^b	4.85 ± 0.19	-0.12165
4	58.24 ± 2.62 ^b	-0.60 ± 0.07 ^b	5.83 ± 0.33	-0.10292
7	59.93 ± 0.52 ^b	-0.30 ± 0.12 ^a	7.03 ± 0.20 ^a	-0.04267
11	51.04 ± 0.04	0.32 ± 0.01	7.34 ± 0.09 ^a	0.043597

same letters in the same column indicate that values are not significantly different ($p > 0.05$).

Table S2. Colour parameters for bread wrapped in MC 2% film

Day	L*	a*	b*	a*/b*
0				
1	57.06 ± 0.69 ^a	-0.56 ± 0.02 ^a	5.72 ± 0.37 ^a	-0.0979
4	57.99 ± 0.66 ^b	-0.63 ± 0.09 ^a	5.73 ± 0.19 ^a	-0.10995
7	57.32 ± 0.65 ^{a,b}	-0.48 ± 0.02	6.92 ± 0.41	-0.06936
11	50.78 ± 0.13	0.32 ± 0.01	7.54 ± 0.03	0.04244

same letters in the same column indicate that values are not significantly different ($p > 0.05$).

Table S3. Colour parameters for bread wrapped in MC 2% _DES 10% film

Day	L*	a*	b*	a*/b*
0				
1	57.29 ± 0.501 ^a	-0.07 ± 0.03	5.62 ± 0.13	-0.01246
4	57.90 ± 0.86 ^a	-0.43 ± 0.02	5.93 ± 0.21	-0.07251
7	55.95 ± 0.55 ^b	-0.32 ± 0.03	6.31 ± 0.22	-0.05071
11	55.18 ± 0.02 ^b	0.14 ± 0.02	7.32 ± 0.02	0.019126

same letters in the same column indicate that values are not significantly different ($p > 0.05$).

Table S4. Colour parameters for bread wrapped in MC 2% _MO 10% film

Day	L*	a*	b*	a*/b*
0				
1	59.02 ± 0.88 ^a	-0.40 ± 0.03	6.23 ± 0.27	-0.06421
4	60.93 ± 1.00 ^a	-0.62 ± 0.03	5.42 ± 0.12	-0.11439
7	55.98 ± 1.66	-0.32 ± 0.08	6.65 ± 0.20	-0.04812
11	52.83 ± 0.80	0.31 ± 0.01	7.75 ± 0.29	0.04000

same letters in the same column indicate that values are not significantly different ($p > 0.05$).