

Supplementary Materials

Table S1. Pasting parameters [initial viscosity (IV), pasting temperature (PaT), peak viscosity (PeV), peak temperature (PeT), holding strength (HS), breakdown (BD), final viscosity (FV), setback from peak (SBp), and total setback (SBt)] of wheat flour (WF), whole wheat meal (WWM), whole rye meal (WRM) ($n = 6$), and 50:50 blends of WWM:WF and WRM:WF ($n = 3$).

Pasting Parameter	WF	WWM:WF	WWM	WRM:WF	WRM
IV (mPa·s)	2.8 ± 0.0^a	5.6 ± 2.2^{ab}	30.4 ± 15.9^{ab}	21.5 ± 16.8^b	67.0 ± 26.0^b
PaT (°C)	57.6 ± 0.8^a	59.3 ± 0.1^a	73.1 ± 6.7^b	59.7 ± 2.2^{ab}	60.4 ± 3.4^{ab}
PeV (mPa·s)	2524 ± 26^a	1833 ± 84^{ab}	1231 ± 74^b	1991 ± 66^{ab}	1541 ± 86^b
PeT (°C)	92.0 ± 0.1^a	92.0 ± 0.2^a	92.2 ± 0.4^a	91.5 ± 0.3^a	91.9 ± 0.3^a
HS (mPa·s)	877 ± 5^{ab}	884 ± 45^{ab}	833 ± 47^b	997 ± 51^a	1203 ± 95^a
BD (mPa·s)	1647 ± 25^a	950 ± 50^{ab}	398 ± 58^b	994 ± 37^{ab}	338 ± 28^b
FV (mPa·s)	2232 ± 32^{ab}	2122 ± 109^a	1893 ± 94^a	2314 ± 70^{ab}	2782 ± 135^b
SBp (mPa·s)	-291 ± 9^a	288 ± 56^{ab}	662 ± 30^a	323 ± 40^{ab}	1241 ± 90^a
SBt (mPa·s)	1356 ± 32^{ab}	1238 ± 67^{ab}	1060 ± 31^a	1317 ± 39^{ab}	1579 ± 63^b

a-b: Values in the same row followed by different superscripts are significantly different ($p < 0.05$).

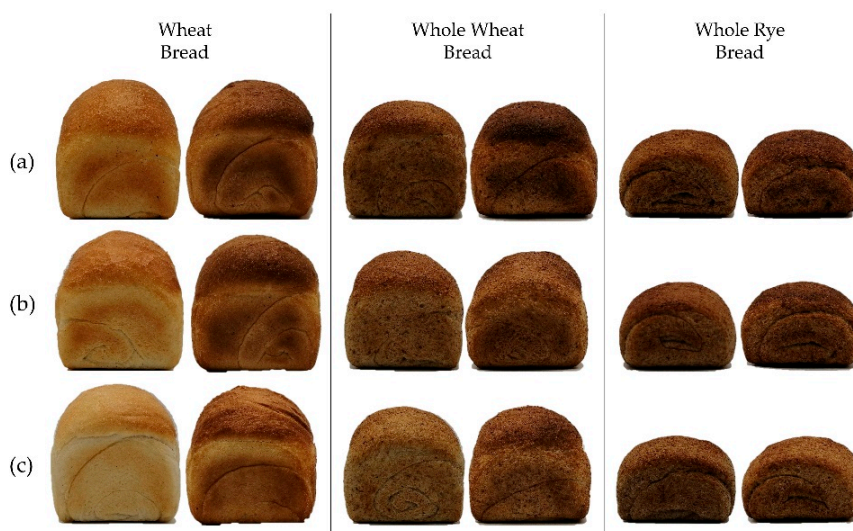


Figure S1: Par-baked (left) and full-baked (right) wheat, whole wheat, and whole rye breads previously par-baked at a) 95, b) 75 and c) 50% of the normal baking time.

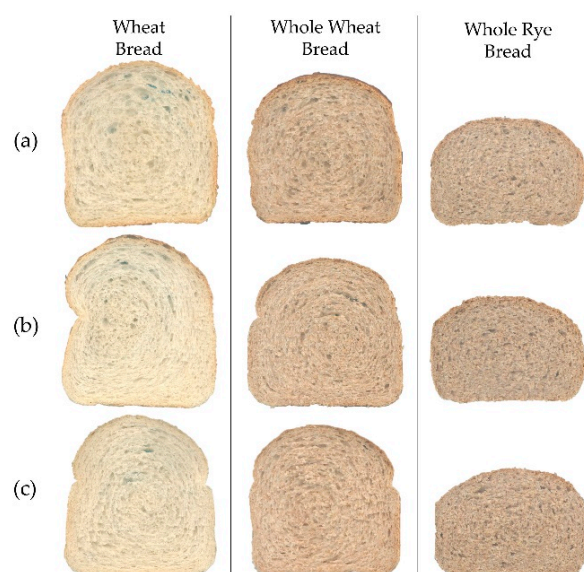


Figure S2: Bread slices of fully baked wheat, whole wheat, and whole rye breads previously par-baked at a) 95, b) 75 and c) 50% of the normal baking time.

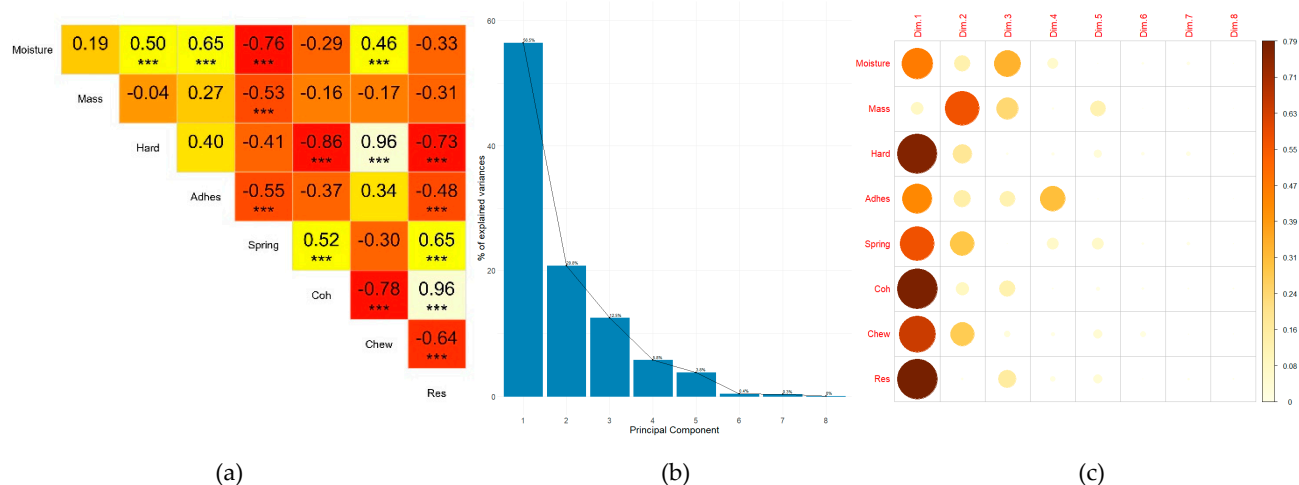


Figure S3: Correlation plot (a), scree plot (b) and visual representation of the importance of the individual factors in the dimensions of the PCA plot (c) – data of all bread types combined (W, WW and WR).

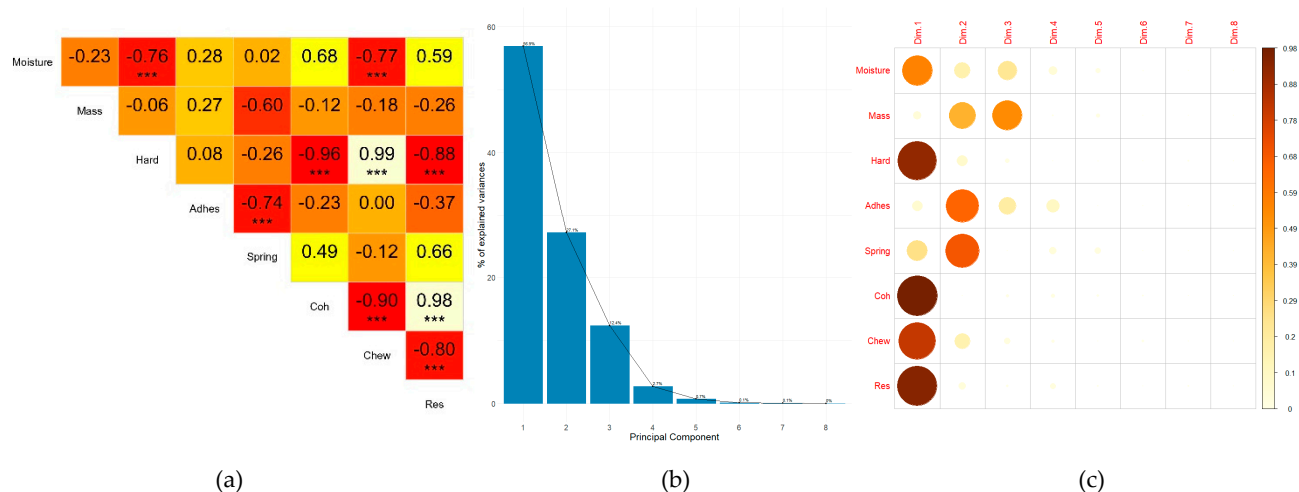


Figure S4: Correlation plot (a), scree plot (b) and visual representation of the importance of the individual factors in the dimensions of the PCA plot (c) – data of wheat bread.

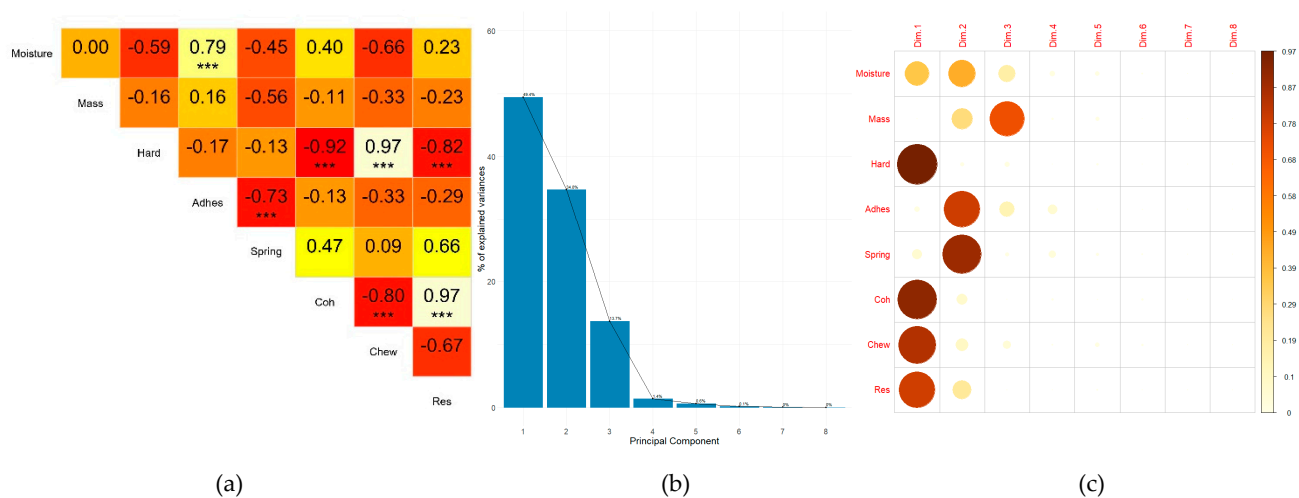


Figure S5: Correlation plot (a), scree plot (b) and visual representation of the importance of the individual factors in the dimensions of the PCA plot (c) – data of whole wheat bread.

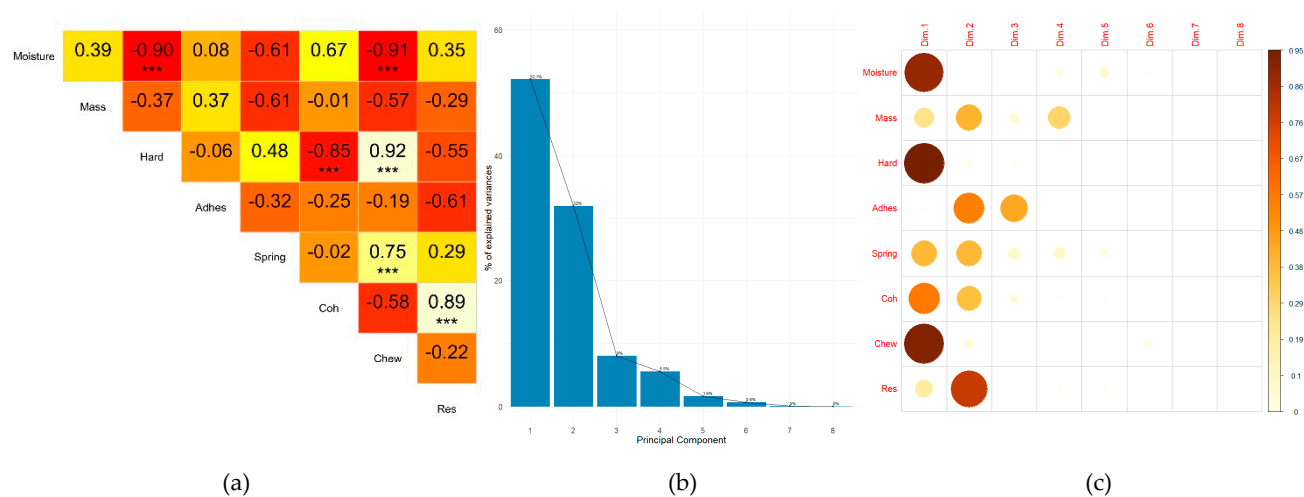


Figure S6: Correlation plot (a), scree plot (b) and visual representation of the importance of the individual factors in the dimensions of the PCA plot (c) – data of whole rye bread.