



SUPPLEMENTARY DATA

Food Chemistry, Engineering, Processing and Packaging

Evaluation of Technological Performance of Algerian Soft Wheat Varieties

Lynda Messaoudene ¹ Amina Belguendouz ² Lamia Medouni-Haroune ¹ Samira Negrichi ¹ Mohamed Khalil Mellal ¹

¹ Centre de Recherche en Technologies Agro-Alimentaires Route de Targa Ouzemmour, Campus Universitaire, Bejaia, 06000, Algeria. lynda.messaoudene@crtaa.univ-bejaia.dz / lamia.madouni@crtaa.univ-bejaia.dz / samira.negrichi@crtaa.univ-bejaia.dz / khalil.mellal@crtaa.univ-bejaia.dz

² Laboratoire d'analyse et contrôle de qualité et de conformité AMINA LABO, Elmeniaa, Algeria. amina_labo@yahoo.com

Supplementary Table 1. List of the 19 Algerian Studied Varieties

Local varieties		Lines under test	
Code	Variety	Code	Variety
V1	HIDHAB	V4	Ae-Squarrosa (Taus) Ben/4/Akla
V2	AIN ABID	V5	PASTOR
V3	ARZ	V6	DGA/BJY//FA*2
V12	ANZA	V7	HXL7579/*2BAU
V13	RMADA	V8	HXL7579/*2BAU
V14	ANFORETA	V9	YANGMAI1/GEN/WOOO30
V15	DJEMILA	V10	MNCH//2*10800994,WIVEE
V16	DJANATE	V11	KAUZ/PASTOR
V17	WIFAK		
V18	HD		
V19	Anapo		

Supplementary Table 2. Comparison of trait measurements between Local varieties and Test lines of wheat, showing means, standard deviations, ranges, and coefficients of variation (CV %). Statistical analysis was performed using permutation MANOVA with 999 iterations (PERMANOVA (adonis2): Df = 1, Sum of Sqs = 22 760, R² = 0.111, F = 6.88, p = 0.008 (999 permutations, Euclidean distance), with p -values shown representing post hoc test results adjusted using False Discovery Rate (FDR) correction

Parameter	Local varieties										Test lines										X ²	P value
	V1	V12	V13	V14	V15	V16	V17	V18	V19	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11			
Dry gluten	7.20 ±	10.30 ±	8.04 ±	8.20 ±	9.20 ±	9.30 ±	8.50 ±	10.20 ±	5.50 ±	8.70 ±	8.50 ±	8.80 ±	8.00 ±	7.80 ±	7.77 ±	7.80 ±	7.17 ±	8.40 ±	8.20 ±	54.55	< 0.001	
%	0.10 ^{ab}	0.20 ^a	0.04 ^{ab}	0.26 ^{ab}	0.10 ^{ab}	0.00 ^{ab}	0.10 ^{ab}	0.26 ^a	0.10 ^b	0.20 ^{ab}	0.10 ^{ab}	0.26 ^{ab}	0.00 ^{ab}	0.10 ^{ab}	0.15 ^{ab}	0.10 ^{ab}	0.15 ^{ab}	0.10 ^{ab}	0.10 ^{ab}			
ER %	72.80 ±	71.80 ±	73.87 ±	77.30 ±	61.57 ±	60.93 ±	76.90 ±	74.83 ±	68.60 ±	73.00 ±	72.80 ±	75.80 ±	72.20 ±	72.13 ±	72.33 ±	74.80 ±	71.90 ±	74.70 ±	73.20 ±	48.56	< 0.001	
	0.85 ^{ab}	0.40 ^{ab}	1.00 ^{ab}	1.05 ^a	0.86 ^b	1.01 ^b	0.17 ^a	1.26 ^{ab}	0.53 ^{ab}	1.00 ^{ab}	1.56 ^{ab}	0.92 ^{ab}	1.11 ^{ab}	0.85 ^{ab}	2.08 ^{ab}	1.10 ^{ab}	0.10 ^{ab}	0.30 ^{ab}	0.26 ^{ab}			
Protein	10.75 ±	11.11 ±	13.30 ±	12.02 ±	10.82 ±	11.07 ±	9.54 ±	11.64 ±	7.80 ±	12.15 ±	12.20 ±	11.05 ±	12.00 ±	11.80 ±	11.28 ±	11.38 ±	11.27 ±	10.23 ±	10.64 ±	51.81	< 0.001	
content (%)	0.18 ^{abc}	0.57 ^{abc}	0.66 ^a	0.51 ^{abc}	0.41 ^{abc}	0.21 ^{abc}	0.15 ^{bc}	0.37 ^{abc}	0.17 ^b	0.12 ^{abc}	0.07 ^{ac}	0.07 ^{abc}	0.04 ^{abc}	0.07 ^{abc}	0.04 ^{abc}	0.06 ^{abc}	0.04 ^{abc}	0.61 ^{abc}	0.36 ^{abc}			
Zeleny	25.83 ±	25.17 ±	22.17 ±	31.33 ±	28.17 ±	28.67 ±	27.00 ±	29.67 ±	22.33 ±	33.33 ±	32.00 ±	29.00 ±	31.33 ±	30.33 ±	30.33 ±	33.33 ±	36.67 ±	24.00 ±	34.67 ±	55.02	< 0.001	
value (mL)	0.29 ^{abc}	0.29 ^{abc}	0.29 ^c	0.58 ^{abc}	0.29 ^{abc}	0.58 ^{abc}	0.00 ^{abc}	0.58 ^{abc}	0.58 ^{ac}	1.15 ^{abc}	0.00 ^{abc}	0.00 ^{abc}	0.58 ^{abc}	1.15 ^{abc}	0.58 ^{abc}	0.58 ^{abc}	1.15 ^b	0.00 ^{abc}	0.58 ^{ab}			
L(mm)	64.00 ±	125.00 ±	43.00 ±	83.00 ±	107.00 ±	140.00 ±	65.00 ±	128.00 ±	34.00 ±	64.00 ±	97.00 ±	83.00 ±	82.33 ±	70.00 ±	68.00 ±	75.00 ±	59.00 ±	96.67 ±	72.00 ±	55.04	< 0.001	
	1.73 ^{abc}	5.00 ^{abc}	2.00 ^{ab}	3.00 ^{abc}	2.00 ^{abc}	3.46 ^c	4.36 ^{abc}	2.00 ^{ac}	1.00 ^b	2.00 ^{abc}	2.65 ^{abc}	2.00 ^{abc}	2.08 ^{abc}	2.00 ^{abc}	2.00 ^{abc}	4.36 ^{abc}	1.00 ^{abc}	4.16 ^{abc}	2.65 ^{abc}			
P(mmH ₂ O)	68.00 ±	41.33 ±	100.00 ±	70.00 ±	60.33 ±	39.00 ±	88.00 ±	55.00 ±	69.00 ±	98.00 ±	61.00 ±	68.00 ±	80.00 ±	85.00 ±	81.00 ±	98.00 ±	90.67 ±	50.00 ±	103.33 ±	55.07	< 0.001	
	3.00 ^{abc}	2.08 ^{bc}	2.00 ^{ab}	3.00 ^{abc}	1.53 ^{abc}	1.00 ^c	1.73 ^{abc}	4.36 ^{abc}	3.61 ^{abc}	2.00 ^{abc}	1.73 ^{abc}	3.46 ^{abc}	1.00 ^{abc}	1.00 ^{abc}	1.00 ^{abc}	2.00 ^{abc}	2.08 ^{abc}	3.61 ^{abc}	3.06 ^a			
P/L	1.06 ±	0.33 ±	2.33 ±	0.84 ±	0.56 ±	0.28 ±	1.35 ±	0.43 ±	2.03 ±	1.53 ±	0.63 ±	0.82 ±	0.98 ±	1.21 ±	1.19 ±	1.31 ±	1.54 ±	0.53 ±	1.43 ±	55.64	< 0.001	
	0.05 ^{abc}	0.03 ^{ab}	0.03 ^c	0.02 ^{abc}	0.02 ^{abc}	0.01 ^a	0.04 ^{abc}	0.02 ^{abc}	0.01 ^{bc}	0.02 ^{abc}	0.06 ^{abc}	0.03 ^{abc}	0.02 ^{abc}	0.03 ^{abc}	0.04 ^{abc}	0.04 ^{abc}	0.04 ^{abc}	0.04 ^{abc}	0.03 ^{abc}			
G (cm ³)	17.80 ±	21.60 ±	18.90 ±	24.90 ±	14.60 ±	20.30 ±	23.00 ±	26.30 ±	17.90 ±	25.20 ±	13.00 ±	17.80 ±	21.90 ±	20.47 ±	20.20 ±	18.60 ±	18.40 ±	19.30 ±	17.10 ±	54.47764	< 0.001	
	0.20 ^{ab}	0.36 ^{ab}	0.53 ^{ab}	0.10 ^{ab}	0.36 ^a	0.30 ^{ab}	2.65 ^{ab}	0.20 ^b	0.10 ^{ab}	0.70 ^{ab}	3.61 ^a	0.60 ^{ab}	0.46 ^{ab}	0.29 ^{ab}	0.30 ^{ab}	0.40 ^{ab}	0.10 ^{ab}	0.30 ^{ab}	0.26 ^{ab}			
W(10 ⁻⁴ J)	141.00 ±	118.00 ±	195.00 ±	194.00 ±	188.00 ±	137.00 ±	193.00 ±	183.00 ±	103.00 ±	240.33 ±	173.00 ±	163.67 ±	218.00 ±	197.00 ±	176.67 ±	273.00 ±	219.00 ±	119.00 ±	277.00 ±	55.12	< 0.001	
	3.00 ^{abc}	2.65 ^{bc}	4.36 ^{abc}	3.61 ^{abc}	4.36 ^{abc}	5.57 ^{abc}	4.00 ^{abc}	3.00 ^{abc}	2.65 ^b	8.74 ^{abc}	1.00 ^{abc}	8.39 ^{abc}	5.29 ^{abc}	2.00 ^{abc}	4.93 ^{abc}	3.00 ^{ac}	6.56 ^{abc}	3.61 ^{abc}	2.00 ^a			

Note: Statistical analysis was performed using permutation MANOVA with 999 iterations (PERMANOVA (adonis2): Df = 1, Sum of Sqs = 22 760, R² = 0.111, F = 6.88, p = 0.008 (999 permutations, Euclidean distance), with p -values shown representing post hoc test results adjusted using False Discovery Rate (FDR) correction.