

Late nitrogen topdressing increases nutritional and industrial quality of white oats (*Avena sativa*) grains

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Supplementary Table 1. Summary of ANOVA, mean square and significance for traits: plant height (H), lodging (LOD), grain yield (GY), thousand-grain weight (TGW), hectoliter weight (HW), percentage of grains larger than 2mm (G>2), number of spikelets per panicle (NSP), number of grains per spikelet (NGS) and crude protein in the grains (CP) of white oats cultivars URS Guria and URS Brava, grown under four nitrogen rates, applied in a single or split rate at two plant stages. Lages, 2014 season.

SOV	DF	Mean square								
		Morphologic and agronomic traits					Industrial quality traits			
		H (m)	LOD (%)	GY (kg ha ⁻¹)	NSP (n ^o)	NGS (n ^o)	TGW (g)	HW (kg hl ⁻¹)	G>2 (%)	CP (%)
Block	3	0.001 ^{ns}	1.4 ^{ns}	1040173.7 ^{ns}	0.2 ^{ns}	0.034*	2.4 ^{ns}	72.1*	0.42*	0.00 ^{ns}
Cultivar (A)	1	0.007 ^{ns}	84.3**	8.4 ^{ns}	2.1*	0.791 ^{ns}	0.6 ^{ns}	27.7**	0.00 ^{ns}	0.27*
Error a	3	0.005	14.5	1303256.9	0.4	0.010	4.7	358.4	0.09	0.09
Plot	7	-----	-----	-----	-----	-----	-----	-----	-----	-----
CV% plot		4.1	28.6	25.8	8.2	4.6	6.2	5.2	2.0	4.1
Stage (B)	2	0.037**	64.8**	4682771.1**	1.1*	0.003 ^{ns}	10.9*	29.7 ^{ns}	0.21 ^{ns}	0.06 ^{ns}
A x B	2	0.005*	41.1**	1221467.9 ^{ns}	0.2 ^{ns}	0.003 ^{ns}	3.1 ^{ns}	7.6 ^{ns}	0.08 ^{ns}	0.03 ^{ns}
Error b	12	0.006	16.5	1439219.0	0.3	0.01	5.1	29.7	0.05 ^{ns}	0.04
sub-plot	23	-----	-----	-----	-----	-----	-----	-----	-----	-----
CV% sub-plot		3.3	14.8	20.4	7.6	4.6	5.8	4.6	2.0	4.1
Rate (C)	3	0.002 ^{ns}	2.0 ^{ns}	433022.6 ^{ns}	0.4 ^{ns}	0.003 ^{ns}	6.7 ^{ns}	3.9 ^{ns}	0.16*	0.14**
A x C	6	0.003 ^{ns}	3.0 ^{ns}	267775.8 ^{ns}	0.1 ^{ns}	0.001 ^{ns}	8.8 ^{ns}	12.0 ^{ns}	0.32 ^{ns}	0.01 ^{ns}
B x C	3	0.001 ^{ns}	0.8 ^{ns}	565565.2 ^{ns}	0.1 ^{ns}	0.009 ^{ns}	1.4 ^{ns}	1.7 ^{ns}	0.05 ^{ns}	0.03*
A x B x C	6	0.002 ^{ns}	11.0**	632140.0 ^{ns}	0.2 ^{ns}	0.002 ^{ns}	1.3 ^{ns}	3.6 ^{ns}	0.06*	0.02*
Error c	36	0.264	459.8	53278108.3	20.5	0.460	279.1	886.5	3.12	1.27
sub-sub-plot	95	-----	-----	-----	-----	-----	-----	-----	-----	-----
CV% sub-sub-plot		3.7	20.7	25.0	7.2	4.6	6.5	8.7	1.6	1.9
Mean		1.2 (m)	51.5 (%)	3093.8 (kg ha ⁻¹)	30.7 (n ^o)	45.5 (n ^o)	30.7 (g)	45.5 (kg hl ⁻¹)	1.7 (%)	12.4 (%)

ANOVA- analyses of variance; SOV- source of variation; DF- Degrees of freedom; CV%- Coefficient of variation.

* and **significant by the F-test at $P<0.05$ and $P<0.01$, respectively; ns- non-significant ($P>0.05$).