

SUPPLEMENTARY MATERIALS

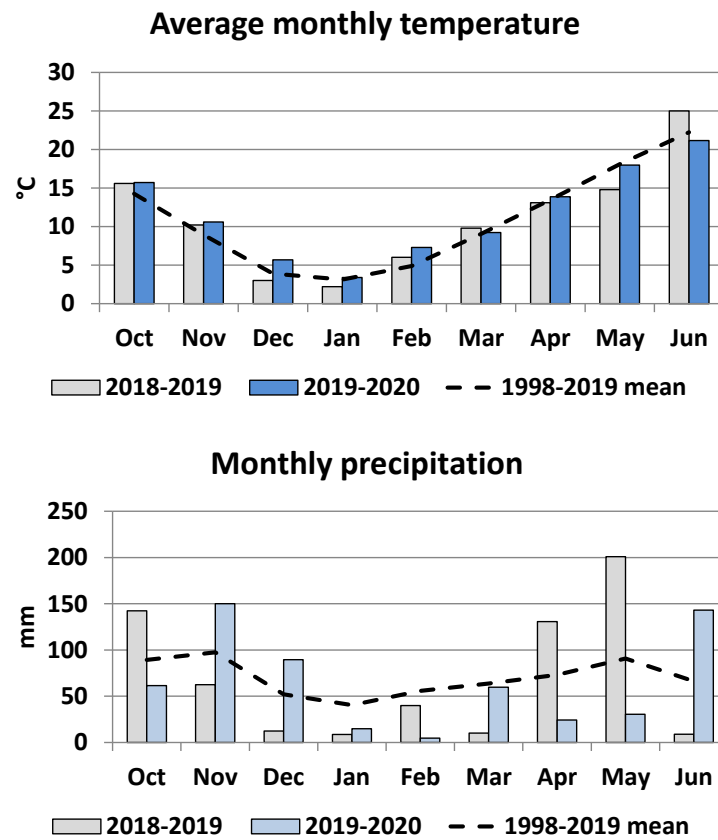


Figure S1. Monthly mean temperatures (A) and precipitations (B) across the two growing cycle of wheat at the experimental farm of the University of Padua (Legnaro, Italy).

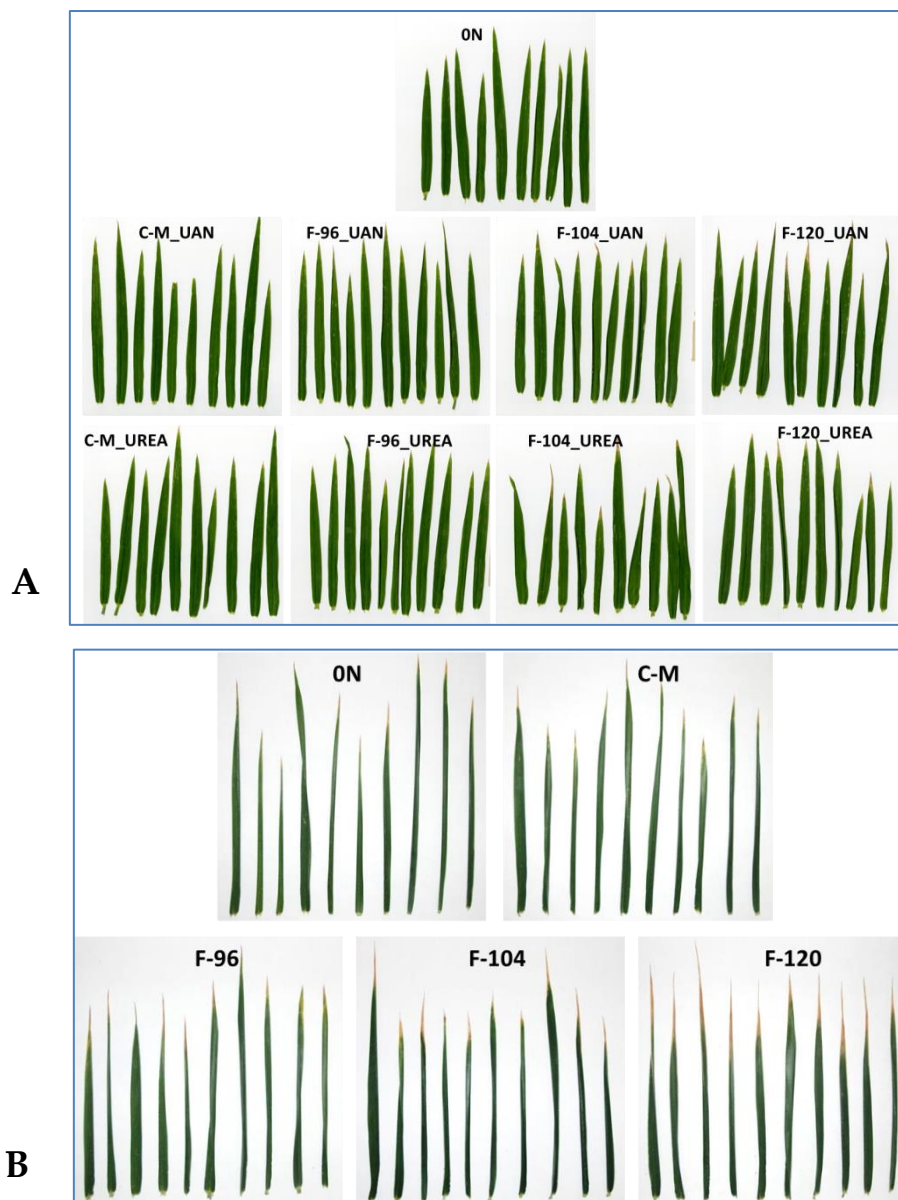


Figure S2. Photographic survey on 10 flag leaves randomly taken from each thesis at 7 days after the last N foliar application (flowering stage) during the 1st year (14 May 2019) (A) and 2nd year (13 May 2021) (B) trial.

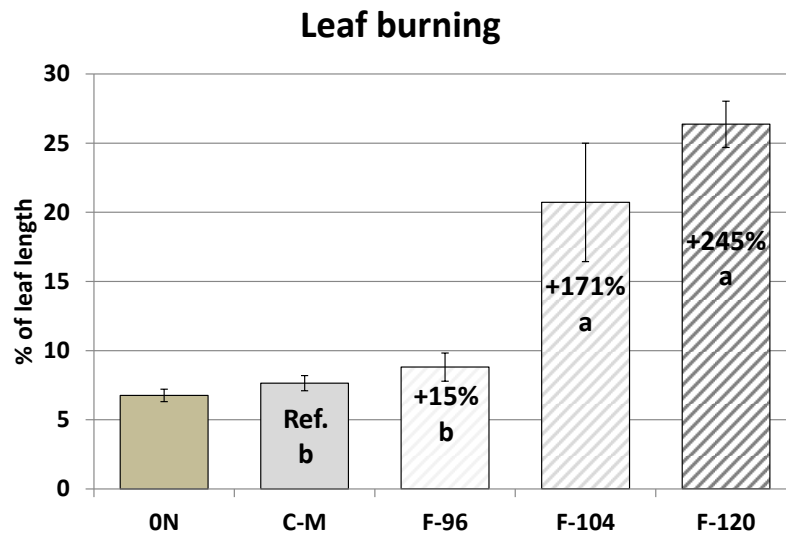
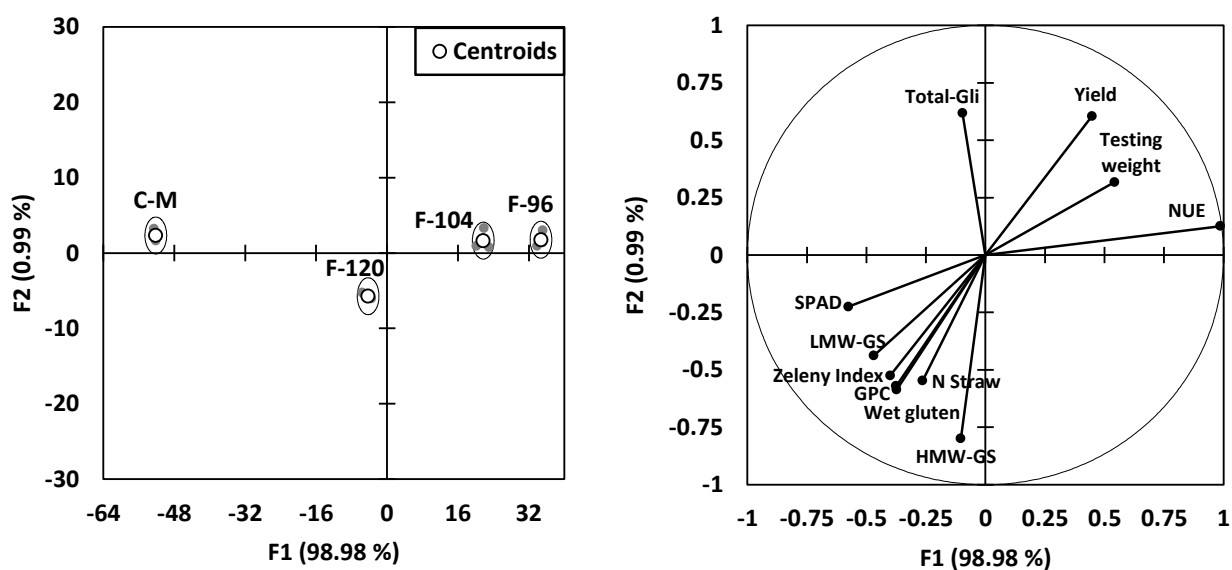


Figure S3. Fraction of burned leaf length ($\% \pm \text{S.E.}$; $n = 3$) in wheat under different foliar N fertilizations in 2019-2020 (2nd year) with leaf spraying (F) at various N doses supplied as urea. Inside bars: % variation *vs.* conventional management C-M. Letters: significant differences among treatments (Newman-Keuls test, $P \leq 0.05$).



Variables	F1	F2
SPAD	-0.576	-0.225
Yield	0.447	0.605
Testing weight	0.542	0.317
GPC	-0.400	-0.525
Zeleny Index	-0.375	-0.571
Wet gluten	-0.373	-0.587
N Straw	-0.264	-0.547
NUE	0.987	0.126
HMW-GS	-0.103	-0.799
LMW-GS	-0.469	-0.438
Total-Gli	-0.096	0.618

Figure S4. Principal component analysis (PCA, top right) with variable loadings (in bold > |0.4|); bottom) and multigroup discriminant analysis (MDA; top left) under different N fertilization treatments with UAN as foliar fertilizer. In MDA, circles contain 100% of cases.

Table S1. Pearson correlation coefficients among yield and quality parameters in wheat under different foliar N fertilization treatments and conventional soil fertilization in a two-year field trial with UAN and UREA as fertilizers.

	Yield	GPC	Wet gluten	Testing weight	HI	TSW	Zeleny index
Yield		0.03 n.s.	0.08 n.s.	0.26 n.s.	0.09 n.s.	0.03 n.s.	-0.09 n.s.
GPC	0.03 n.s.		0.97 ***	-0.15 n.s.	-0.49 ***	-0.50 ***	0.94 ***
Wet gluten	0.08 n.s.	0.97 ***		-0.19 n.s.	-0.58 ***	-0.60 ***	0.90 ***
Testing weight	0.26 n.s.	-0.15 n.s.	-0.19 n.s.		0.60 ***	0.65 ***	-0.23 n.s.
HI	0.09 n.s.	-0.49 ***	-0.58 ***	0.60 ***		0.92 ***	-0.51 ***
TSW	0.03 n.s.	-0.50 ***	-0.60 ***	0.65 ***	0.92 ***		-0.51 ***
Zeleny index	-0.09 n.s.	0.94 ***	0.90 ***	-0.23 n.s.	-0.51 ***	-0.51 ***	

* Significance at $P \leq 0.05$; ** significance at $P \leq 0.01$; *** significance at $P \leq 0.001$; n.s.: not significant.