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GENETIC VARIABILITY FOR NUTRIENT COMPOSITION IN DURUM WHEAT GRAINS UNDER DIFFERENT AGRONOMIC CONDITIONS



R. Martínez-Peña¹, Y. Pallavicini¹, R. Morcuende², M.T. Nieto-Taladriz³, N. Aparicio¹, R. Vicente⁴

¹Agro-technological Institute of Castilla y León (ITACyL), Valladolid, Spain.

²Abiotic Stress Department, Institute of Natural Resources and Agrobiology of Salamanca, IRNASA- CSIC, Salamanca, Spain.

³Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA), Ctra. de la Coruña Km. 7.5, 28040 Madrid, Spain.

⁴Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Oeiras, Portugal.

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INTRODUCTION



Triticum turgidum L. subsp. durum

BIOFORTIFICATION:

The process by which the **nutritional quality** is improved through agronomic practices, conventional plant breeding or modern biotechnology.

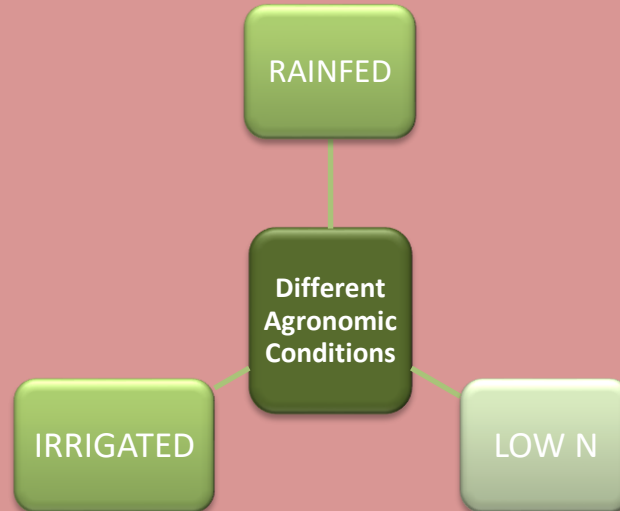
OBJECTIVE

Study how the GxE interaction influences the accumulation of micro- (Cu, Fe, Mn, Mo, Na and Zn) and macro-nutrients (Ca, K, Mg, P and S) in **durum wheat**.

MATERIAL AND METHODS



Twenty-four durum wheat modern commercial varieties.
Alpha-lattice design with 3 blocks.



MEASUREMENTS

▪ DURING CROP CYCLE:

Physiological and Agronomical traits

▪ HARVEST:

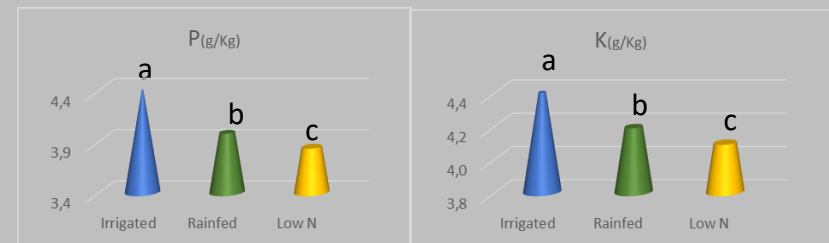
Yield components
Grain quality traits
Mineral nutrient content

RESULTS

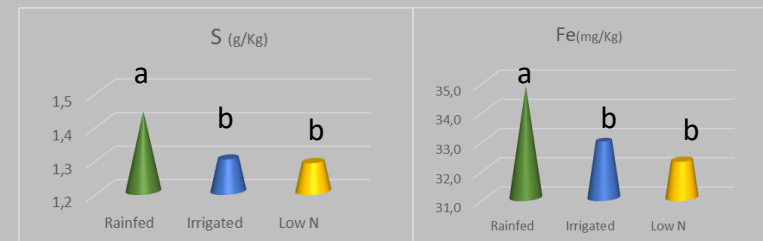
✓ Some genotypes showed high amount of certain nutrients regardless the treatments (**high-nutritional genotypes**).

GENOTYPE	MACRONUTRIENT (g/Kg)					MICRONUTRIENT (mg/Kg)					
	Ca	K	Mg	P	S	Cu	Fe	Mn	Mo	Na	Zn
ALMICAR											
ARCOBALENO											
ATHORIX											
AVISPA											
BURGOS											
CLAUDIO											
CORE											
DON NORMAN											
DON RICARDO											
DORONDON											
EURODURO											
GALLARETA											
HARISTIDE											
IBERUS											
KIKO NICK											
MEXA											
OLIVADUR											
PEDROSO											
REGALLO											
SARAGOLLA											
SCULPTUR											
SIMETO											
SOLEA											
VITRON											

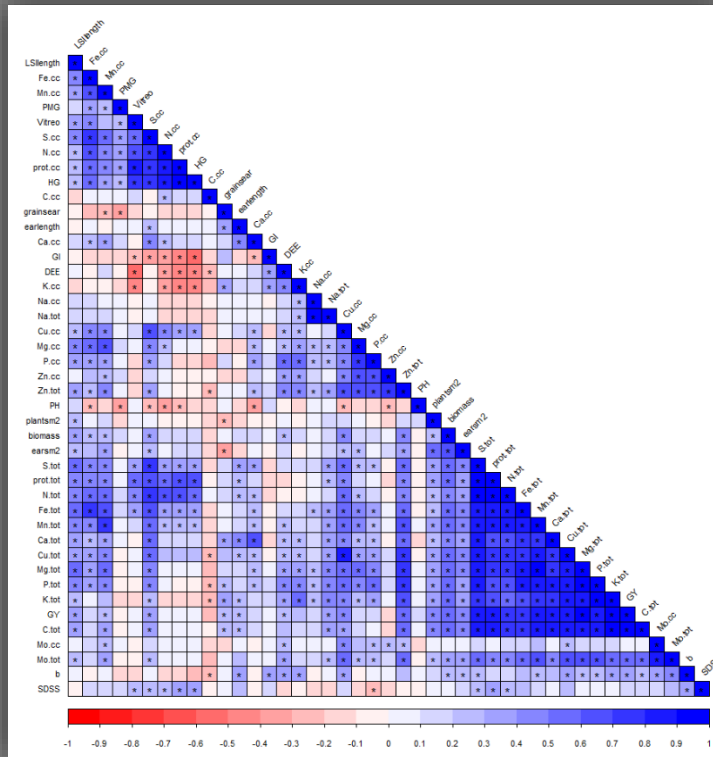
✓ Significant higher concentrations of Ca, Mg, Na, Zn, Mo, P and K under **irrigation** regimen.



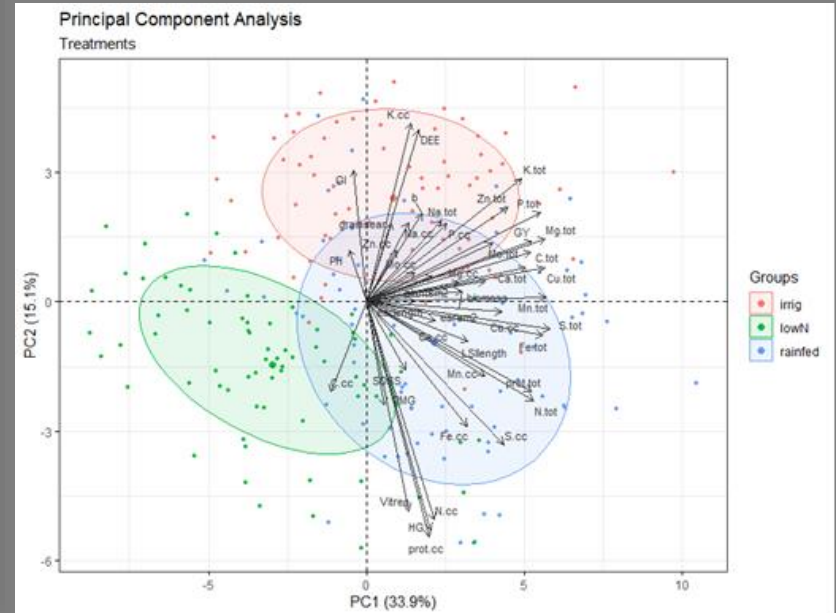
✓ Nevertheless, under **rainfed** conditions, S and Fe were significantly higher than in the other conditions.



CONCLUSIONS



✓ PCAs revealed that **low N** also reduced significantly plant growth and grain yield (GY) more than rainfed conditions.



Overall, these results suggests that the agronomic practices strongly modulate the nutrient uptake and translocation in durum wheat.

Thank you



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