

Table 1 Suppl. List of elements determined in ryegrass samples and respective operational conditions.

Element	Wavelength [nm]	Analytical range	LOQ (DM)
Al	396.152	0 - 5 000 mg/kg	0.25 mg/kg
Ca	370.602	0 - 5%	0.0012%
Cu	327.395	0 - 100 mg/kg	0.200 mg/kg
Fe	258.588	0 - 10 000 mg/kg	1.00 mg/kg
K	766.491	0 - 5%	0.0013%
Mg	279.800	0 - 0.5%	0.00025%
Mn	293.305	0 - 2 500 mg/kg	0.20 mg/kg
Mo	202.032	0 - 10 mg/kg	0.500 mg/kg
P	213.618	0 - 1%	0.0002%
S	181.972	0 - 0.5%	0.002%
Zn	213.857	0 - 500 mg/kg	0.50 mg/kg

Table 2 Suppl. Analysis of variance of 24 perennial ryegrass accessions over two years under control and excess water for fresh and dry mass (highly significant results are typed in bold). The genotypes were pooled for each population, with a total of 8 (genotypes) × 3 (replicates) = 24 entries per accession per treatment.

Source of variation	d.f.	Fresh mass Mean squares	F pr.	Dry mass Mean squares	F pr
Block stratum	2	9570		2224	
Block × units × stratum					
Accession	23	54379	<0.001	3123	<0.001
Water treatment	1	1508135	<0.001	30039	<0.001
Year	1	602298	<0.001	629	0.164ns
Accession × water treatment	23	8064	0.136 ns	445	0.111ns
Accession × year	23	26681	<0.001	1710	<0.001
Water treatment × year	1	65099	0.001	1428	0.036
Accession × water treatment × year	23	6070	0.461 ns	299	0.568 ns
Residual	2178	6069		325	

Table 3 Suppl. Analysis of variance of eight genotypes from 24 perennial ryegrass accessions over two years under control and excess water for fresh and dry masses (highly significant results are typed in bold).

Source of variation	d.f.	Fresh mass Mean squares	F pr.	Dry mass Mean squares	F pr
Block stratum					
Genotype	191	58		9	
Block × units × stratum					
Genotype	191	29799	<0.001	1687	<0.001
Water treatment	1	1470072	<0.001	29095	<0.001
Year	1	587521	<0.001	588	0.102ns
Genotype × water treatment	191	6060	<0.001	290	0.004
Genotype × year	191	8874	<0.001	533	<0.001
Water treatment × year	1	63576	0.001	1486	0.009
Genotype × water treatment × year	191	3499	0.949ns	188	0.914ns
Residual	1506	4210		220	

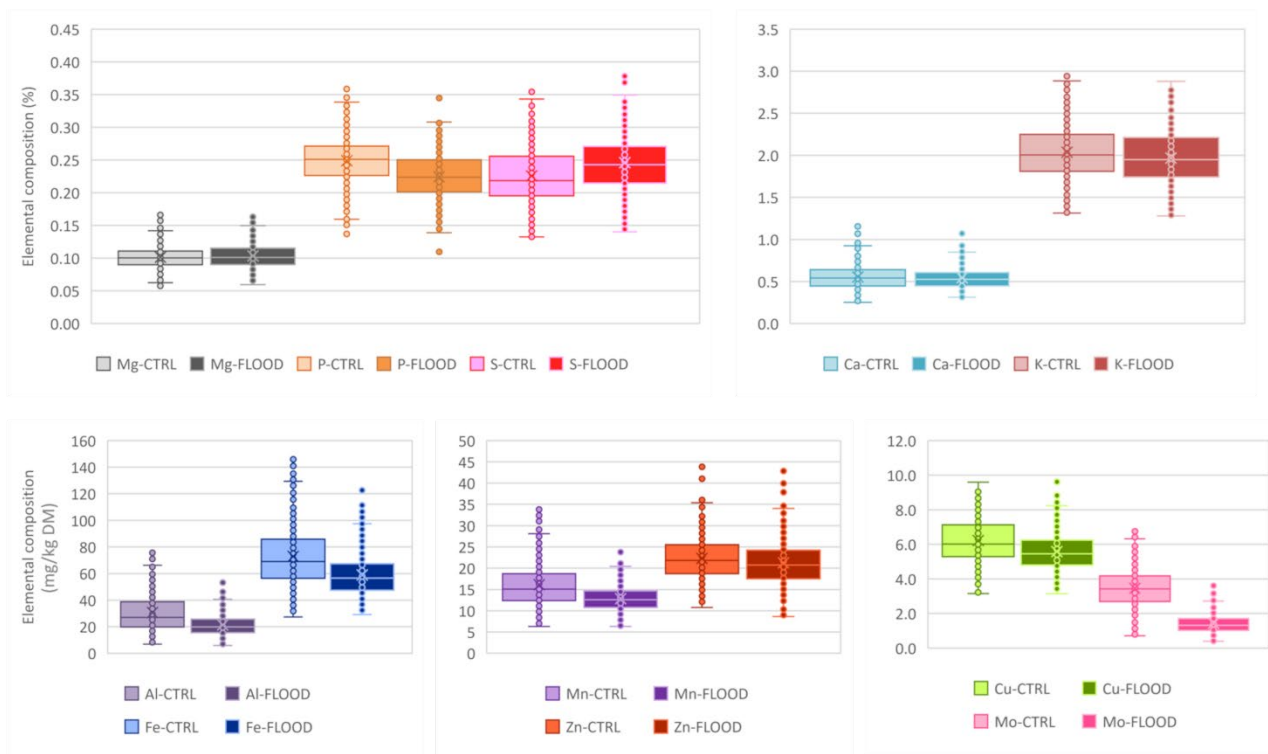


Fig. 1 Suppl. Boxplots representation of the variation in elemental composition with treatment (CTRL - control; FLOOD - flooded) in 2017 season.