

**Amino acids content in 'Tempranillo' must from three soil types over four vintages**

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Table S1

Pedological parameters of the three soil types located in Uruñue-  
la (La Rioja), Spain

Soil Type	FH	TC	PP
Effective depth (cm)	110 ± 1	71 ± 6	64 ± 2
Water availability (mm)	147 ± 9	56 ± 1	63 ± 5
Topsoil (0 - 30 cm)			
Textural class	Loam	Sandy loam	Loam
pH	8.20 ± 0.25	8.30 ± 0.4	8.50 ± 0.10
K (ppm)	348 ± 62	244 ± 9	113 ± 53
Mg (ppm)	218 ± 9	94 ± 4	90 ± 13
Organic matter (% w/w)	1.10 ± 0.06	0.90 ± 0.17	1.10 ± 0.23
Subsoil (deeper than 30 cm)			
Textural class	Loam	Loam	Loam
pH	8.5 ± 0.15	8.5 ± 0.10	8.5 ± 0.15
Coarse fragments (% v/v)	0.5 ± 0.25	55 ± 2.5	26 ± 4.0
Calcium carbonate (% w/w)	16.3 ± 3.0	60.5 ± 1.0	60.6 ± 2.3
Active limestone (% w/w)	6.9 ± 1.7	15.1 ± 0.6	15.0 ± 1.1

FH: *Fluventic Haploxerepts*; TC: *Typic Calcixerepts* and PP: *Petrocalcic Palexerolls*. Values are given with their standard deviation (n = 3).

Table S2

Percentage of must N compounds variance attributable to soil, season and soil x season interaction

	Soil (%)	Season (%)	Soil x season (%)	Error (%)
Pro	9.00 **	42.26 ***	41.12 ***	11.03
Arg	36.54 ***	32.47 ***	26.01 ***	1.89
GABA	29.61 ***	34.18 ***	33.22 ***	3.79
Gln	23.82 ***	33.58 ***	38.95 ***	5.84
Glu	13.76 ***	49.32 ***	30.67 ***	6.66
Ala	47.88 ***	24.88 ***	22.22 ***	3.59
His	22.03 ***	29.10 ***	43.11 ***	2.47
Trp	37.24 ***	46.81 ***	17.26 ***	3.79
Thr	49.65 ***	27.30 ***	19.96 ***	4.06
Ser	32.10 ***	17.42 ***	44.48 ***	7.12
Asp	25.71 ***	53.78 ***	10.15 *	10.48
Cys	17.72 ***	37.05 ***	38.62 ***	1.29
Phe	21.72 ***	36.03 ***	34.97 ***	4.03
Val	13.99 ***	39.52 ***	35.24 ***	10.64
Leu	13.16 ***	46.00 ***	30.92 ***	9.33
Tyr	39.63 ***	25.41 ***	30.14 ***	1.85
Asn	33.67 ***	32.10 ***	28.06 ***	5.58
Cit	39.86 ***	37.63 ***	14.58 ***	5.87
Gly	15.81 ***	22.79 ***	51.65 ***	5.80
Ile	12.65 *	30.18 **	22.46 ns	33.70
Met	28.32 ***	47.99 ***	21.58 ***	2.71
Lys	13.63 ***	39.74 ***	38.08 ***	5.90
Taa	30.42 ***	29.58 ***	36.56 ***	3.16
Taa without Pro	36.49 ***	28.24 ***	31.56 ***	2.24
YAN	27.89 ***	21.03 ***	43.42 ***	7.66

\*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$ ; ns  $p > 0.05$ .

Taa = Total amino acids.

YAN = Yeast assimilable nitrogen.