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Article

A new strategy to improve vineyard resilience: grapevine morphological adaptation to short-term Nitrogen deficiency

Daniel-Grigorie Dinu [1,2], Carmen Florentina Popescu [2], Dorin Ioan Sumedrea [2], Andreea Elena Manolescu [2], Letitia Mariana Pandelea [2], Laura Rustioni [1,*]

Table S1: Average data recorded for each grafting combinations

	Grape Cultivar	Rootstock	Full-Nitrogen	Half-Nitrogen	No-Nitrogen
new formed roots weight (g)	Afuz Ali	C71	0.10	1.18	0.68
		Kober 5BB	0.48	1.43	2.18
		SO4-4	0.04	2.81	2.54
	Italia	C71	0.05	1.82	2.33
		Kober 5BB	0.40	0.91	0.44
		SO4-4	0.05	3.59	1.69
Ratio roots/shoots (mg/g)	Afuz Ali	C71	8.78	80.22	72.79
		Kober 5BB	29.97	87.12	167.88
		SO4-4	5.26	182.87	111.02
	Italia	C71	5.52	108.30	116.11
		Kober 5BB	20.55	82.42	49.97
		SO4-4	5.42	195.98	101.59
Ratio roots/leaf area (mg/cm2)	Afuz Ali	C71	0.27	2.06	1.69
		Kober 5BB	1.01	2.14	3.76
		SO4-4	0.16	5.04	3.06
	Italia	C71	0.15	2.56	2.80
		Kober 5BB	0.60	1.89	1.34
		SO4-4	0.49	3.77	2.04
Chlorophyll a (mg/g leaves)	Afuz Ali	C71	1.58	1.57	1.37
		Kober 5BB	1.52	1.92	1.71
		SO4-4	1.52	1.51	1.64
	Italia	C71	1.53	1.87	2.84
		Kober 5BB	2.76	1.37	1.19
		SO4-4	2.55	2.67	1.45
Chlorophyll b (mg/g leaves)	Afuz Ali	C71	0.70	1.03	0.65
		Kober 5BB	0.68	0.94	0.96
		SO4-4	0.79	0.70	0.83
	Italia	C71	0.75	1.10	2.48
		Kober 5BB	2.53	0.71	0.61
		SO4-4	2.25	1.99	0.77

Carotenoids (mg/g leaves)	Afuz Ali	C71	3.06	2.97	2.34
		Kober 5BB	2.68	3.56	3.53
		SO4-4	3.03	2.82	3.17
	Italia	C71	3.08	3.80	5.18
		Kober 5BB	5.28	2.68	2.36
		SO4-4	4.37	5.18	2.52
Chlorophyll a/Chlorophyll b	Afuz Ali	C71	2.83	1.86	2.14
		Kober 5BB	2.32	2.07	2.04
		SO4-4	2.12	2.24	1.98
	Italia	C71	2.21	2.05	1.16
		Kober 5BB	1.10	1.98	2.04
		SO4-4	1.14	1.35	1.98
Total pigments (mg/g leaves)	Afuz Ali	C71	5.35	5.57	4.36
		Kober 5BB	4.88	6.43	6.19
		SO4-4	5.33	5.03	5.65
	Italia	C71	5.37	6.77	10.51
		Kober 5BB	10.57	4.77	4.15
		SO4-4	9.16	9.84	4.74

Figure S2: photos of the plant growth at the end of the experiment. New formed roots are recognizable by the lighter color

Table S3: matrix of the five main Principal Component functions

	Component				
	1	2	3	4	5
Leaf area	,856	,411	,123	,230	-,014
Stem diameter	-,175	,526	-,342	,606	,419
Stem length	,141	,881	,311	-,159	-,267
Petiole diameter	,282	,272	-,635	,454	-,469
Petiole length	,684	,600	-,175	-,259	,266
Stem length/diameter	,237	,500	,442	-,476	-,499
Stem surface	,018	,967	,101	,164	-,014
Petiole length/diameter	,457	,425	,236	-,485	,554
Petiole surface	,670	,589	-,434	-,005	-,008
Total green surface	,619	,758	,006	,190	-,015
% of green surface due to leaf	,812	-,483	,280	,145	,001
% of green surface due to stem	-,842	,515	,122	,028	,004
% of green surface due to petiole	,236	-,175	-,872	-,369	-,010
% of green surface excluding leaf	-,812	,483	-,280	-,145	-,001
Leaf/stem surface	,785	-,532	,063	,083	-,029
Leaf/petiole surface	,392	-,210	,811	,338	,040
Stem/petiole surface	-,691	,441	,509	,180	,050