

## Supplementary tables and figures

# Grapevine Phyllosphere Community Analysis in Response to Elicitor Application against Powdery Mildew

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**Supplementary Table S1.** Resume of read counts and statistics for each sequenced sample in the MiSeq run

<b>Sample</b>	<b>Total Bases</b>	<b>Read Counts</b>	<b>GC (%)</b>	<b>AT (%)</b>	<b>Q20 (%)</b>	<b>Q30 (%)</b>
CTRL1_MO_DNA_ITS	50,897,896	169,096	65.08	34.92	84.02	73.12
CTRL2_MO_DNA_ITS	50,721,510	168,510	65.30	34.70	83.70	72.87
CTRL3_MO_DNA_ITS	47,937,260	159,260	63.79	36.21	84.43	73.83
AcS-Mt1_MO_DNA_ITS	49,229,754	163,554	67.35	32.65	83.16	72.08
AcS-Mt2_MO_DNA_ITS	52,181,360	173,360	67.88	32.12	82.69	71.34
AcS-Mt3_MO_DNA_ITS	49,565,670	164,670	66.73	33.27	83.30	72.28
K-Pho1_MO_DNA_ITS	64,607,242	214,642	68.11	31.89	83.29	72.36
K-Pho2_MO_DNA_ITS	61,665,870	204,870	67.27	32.73	83.56	72.52
K-Pho3_MO_DNA_ITS	60,049,500	199,500	67.33	32.67	83.93	73.04
Lam1_MO_DNA_ITS	65,298,940	216,940	65.61	34.39	84.27	73.50
Lam2_MO_DNA_ITS	50,214,626	166,826	67.32	32.68	83.41	72.28
Lam3_MO_DNA_ITS	50,790,740	168,740	68.46	31.54	83.52	72.67
CTRL1_NE_DNA_ITS	50,250,144	166,944	63.98	36.02	83.28	72.33
CTRL2_NE_DNA_ITS	61,148,752	203,152	63.38	36.62	84.50	73.57
CTRL3_NE_DNA_ITS	58,818,410	195,410	64.46	35.54	83.29	72.17
AcS-Mt1_NE_DNA_ITS	55,802,992	185,392	67.0	33.0	82.60	71.31
AcS-Mt2_NE_DNA_ITS	51,794,876	172,076	66.12	33.88	83.0	71.78
AcS-Mt3_NE_DNA_ITS	56,359,842	187,242	66.57	33.43	82.90	71.80
K-Pho1_NE_DNA_ITS	60,026,624	199,424	65.96	34.04	81.36	69.48
K-Pho2_NE_DNA_ITS	63,471,870	210,870	64.90	35.10	82.88	71.92
K-Pho3_NE_DNA_ITS	53,839,268	178,868	67.06	32.94	82.61	71.44
Lam1_NE_DNA_ITS	57,239,966	190,166	65.36	34.64	84.31	73.44
Lam2_NE_DNA_ITS	54,599,594	181,394	64.01	35.99	83.99	73.06
Lam3_NE_DNA_ITS	51,449,328	170,928	65.75	34.25	82.74	71.41

**Supplementary Table S2.** Abundances of TOP 10 fungal genera among the analyzed samples

Genera	NE CTRL		NE AcS-Mt		NE K-Pho		NE Lam		MO CTRL		MO AcS-Mt		MO K-Pho		MO Lam	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Erysiphe</i>	77.71% ± 6.86%		74.73% ± 5.31%		67.44% ± 10.29%		86.71% ± 2.11%		50.78% ± 10.45%		22.28% ± 6.18%		21.52% ± 6.61%		38.90% ± 5.97%	
<i>Alternaria</i>	10.08% ± 2.88%		10.39% ± 4.43%		13.48% ± 3.28%		1.02% ± 0.55%		20.72% ± 2.81%		35.33% ± 3.58%		32.87% ± 3.88%		22.52% ± 1.90%	
<i>Cladosporium</i>	5.23% ± 0.83%		5.10% ± 0.04%		7.09% ± 2.58%		3.75% ± 1.14%		10.31% ± 4.63%		12.40% ± 3.72%		12.98% ± 2.06%		16.43% ± 2.13%	
<i>Epicoccum</i>	5.27% ± 1.97%		6.55% ± 0.66%		8.56% ± 1.14%		2.48% ± 1.33%		12.19% ± 1.21%		13.28% ± 3.09%		24.58% ± 3.90%		10.48% ± 1.13%	
<i>Aureobasidium</i>	0.26% ± 0.10%		0.22% ± 0.13%		0.72% ± 0.20%		0.16% ± 0.06%		0.92% ± 0.51%		10.01% ± 1.79%		2.25% ± 1.10%		2.16% ± 0.74%	
<i>Bipolaris</i>	0.56% ± 0.29%		0.53% ± 0.44%		0.43% ± 0.19%		0.46% ± 0.30%		1.69% ± 0.55%		2.32% ± 0.43%		1.86% ± 0.26%		5.44% ± 0.29%	
<i>Pithomyces</i>	0.32% ± 0.11%		1.52% ± 0.26%		1.29% ± 0.28%		0.85% ± 0.40%		1.86% ± 0.76%		2.44% ± 1.44%		1.91% ± 0.46%		0.96% ± 0.38%	
<i>Filobasidium</i>	0.12% ± 0.07%		0.02% ± 0.01%		0.20% ± 0.04%		0.03% ± 0.01%		0.89% ± 0.52%		0.25% ± 0.13%		0.20% ± 0.08%		0.07% ± 0.03%	
<i>Curvularia</i>	0.22% ± 0.12%		0.26% ± 0.17%		0.28% ± 0.06%		0.11% ± 0.09%		0.15% ± 0.10%		0.50% ± 0.06%		0.27% ± 0.11%		0.91% ± 0.10%	
<i>Nigrospora</i>	0.22% ± 0.19%		0.68% ± 0.07%		0.50% ± 0.29%		0.43% ± 0.16%		0.49% ± 0.11%		1.20% ± 0.36%		1.55% ± 0.96%		2.12% ± 0.74%	

**Supplementary Table S3.** List of OTUs identified in ‘Moscato’ (MO) samples. Values are the mean of three biological replicates  $\pm$  standard deviation (SD). MO CTRL = non-treated inoculated plants; MO AcS-Mt = plants treated with Acibenzolar-S-methyl (Bion, Syngenta Crop Protection); MO K-Pho = plants treated with Potassium phosphonate (Century, BASF Agro); MO Lam = inoculated plants treated with Laminarin (Vacciplant, Arysta Lifescience).

	MO CTRL		MO AcS-Mt		MO K-Pho		MO Lam	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Erysiphe</i>	49.96% $\pm$	30.29%	21.84% $\pm$	17.63%	19.84% $\pm$	17.82%	38.47% $\pm$	27.95%
<i>Epicoccum</i>	11.87% $\pm$	9.83%	13.09% $\pm$	3.19%	22.37% $\pm$	3.78%	10.34% $\pm$	7.16%
<i>Alternaria</i>	20.26% $\pm$	12.48%	34.75% $\pm$	13.19%	29.84% $\pm$	12.84%	22.08% $\pm$	7.27%
<i>Cladosporium</i>	10.08% $\pm$	4.45%	12.18% $\pm$	3.52%	11.76% $\pm$	1.39%	16.05% $\pm$	11.58%
<i>Aureobasidium</i>	0.90% $\pm$	0.50%	9.99% $\pm$	15.78%	2.06% $\pm$	1.07%	2.16% $\pm$	3.74%
<i>Nigrospora</i>	0.48% $\pm$	0.41%	1.18% $\pm$	0.36%	1.41% $\pm$	0.90%	2.07% $\pm$	1.95%
<i>Claviceps</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.57% $\pm$	0.95%	0.00% $\pm$	0.00%
<i>Phoma</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.62% $\pm$	0.90%	0.00% $\pm$	0.00%
<i>Bipolaris</i>	1.65% $\pm$	1.50%	2.28% $\pm$	0.45%	1.70% $\pm$	0.24%	5.42% $\pm$	8.29%
<i>Coniozyma</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.32% $\pm$	0.56%	0.00% $\pm$	0.00%
<i>Hannaella</i>	0.12% $\pm$	0.22%	0.14% $\pm$	0.24%	0.55% $\pm$	0.34%	0.00% $\pm$	0.00%
<i>Curvularia</i>	0.15% $\pm$	0.20%	0.49% $\pm$	0.66%	0.24% $\pm$	0.26%	0.89% $\pm$	0.79%
<i>Ulocladium</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.23% $\pm$	0.23%	0.90% $\pm$	1.51%
<i>Pithomyces</i>	1.82% $\pm$	0.73%	2.39% $\pm$	1.40%	1.69% $\pm$	1.22%	0.93% $\pm$	1.33%
<i>Fusarium</i>	0.00% $\pm$	0.00%	0.41% $\pm$	0.49%	0.39% $\pm$	0.53%	0.06% $\pm$	0.05%
<i>Lophiostoma</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.24% $\pm$	0.37%	0.00% $\pm$	0.00%
<i>Blumeria</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.12% $\pm$	0.10%
<i>Candida</i>	0.00% $\pm$	0.00%	0.12% $\pm$	0.20%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%
<i>Filobasidium</i>	0.87% $\pm$	1.01%	0.24% $\pm$	0.42%	0.17% $\pm$	0.23%	0.00% $\pm$	0.00%
<i>Leptosphaerulina</i>	0.44% $\pm$	0.75%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%
<i>Microsphaeropsis</i>	0.00% $\pm$	0.00%	0.30% $\pm$	0.37%	0.76% $\pm$	0.82%	0.00% $\pm$	0.00%
<i>Noosia</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.14% $\pm$	0.12%	0.00% $\pm$	0.00%
<i>Periconia</i>	0.34% $\pm$	0.47%	0.12% $\pm$	0.21%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%
<i>Pleochaeta</i>	0.30% $\pm$	0.07%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%
<i>Podospora</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.45% $\pm$	0.54%
<i>Preussia</i>	0.42% $\pm$	0.44%	0.34% $\pm$	0.42%	0.22% $\pm$	0.39%	0.00% $\pm$	0.00%
<i>Stemphylium</i>	0.15% $\pm$	0.13%	0.00% $\pm$	0.00%	4.51% $\pm$	7.80%	0.00% $\pm$	0.00%
<i>Symmetrospora</i>	0.17% $\pm$	0.26%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%
<i>Trichoderma</i>	0.00% $\pm$	0.00%	0.15% $\pm$	0.11%	0.00% $\pm$	0.00%	0.05% $\pm$	0.09%
<i>Vishniacozyma</i>	0.00% $\pm$	0.00%	0.00% $\pm$	0.00%	0.36% $\pm$	0.44%	0.00% $\pm$	0.00%

**Supplementary Table S4.** List of OTUs identified in 'Nebbiolo' (NE) samples. Values are the mean of three biological replicates  $\pm$  standard deviation (SD). CTRL = non-treated inoculated plants; AcS-Mt = plants treated with Acibenzolar-S-methyl (Bion, Syngenta Crop Protection); K-Pho = plants treated with Potassium phosphonate (Century, BASF Agro); Lam = inoculated plants treated with Laminarin (Vacciplant, Arysta Lifescience).

	NE CTRL		NE AcS-Mt		NE K-Pho		NE Lam	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Erysiphe</i>	68.76% $\pm$ 24.88%		30.32% $\pm$ 1.98%		36.37% $\pm$ 20.44%		63.68% $\pm$ 18.73%	
<i>Alternaria</i>	7.76% $\pm$ 1.84%		4.39% $\pm$ 2.28%		5.92% $\pm$ 1.97%		3.60% $\pm$ 0.57%	
<i>Cladosporium</i>	4.58% $\pm$ 1.73%		2.08% $\pm$ 0.26%		3.44% $\pm$ 1.52%		2.67% $\pm$ 0.80%	
<i>Epicoccum</i>	4.30% $\pm$ 0.99%		2.68% $\pm$ 0.53%		4.26% $\pm$ 1.42%		1.69% $\pm$ 0.56%	
<i>Aureobasidium</i>	0.23% $\pm$ 0.17%		0.09% $\pm$ 0.06%		0.48% $\pm$ 0.69%		0.11% $\pm$ 0.04%	
<i>Bipolaris</i>	0.51% $\pm$ 0.37%		0.23% $\pm$ 0.21%		0.22% $\pm$ 0.23%		0.38% $\pm$ 0.31%	
<i>Pithomyces</i>	0.31% $\pm$ 0.25%		0.63% $\pm$ 0.17%		0.69% $\pm$ 0.34%		0.58% $\pm$ 0.15%	
<i>Filobasidium</i>	0.12% $\pm$ 0.17%		0.01% $\pm$ 0.01%		0.14% $\pm$ 0.17%		0.02% $\pm$ 0.01%	
<i>Curvularia</i>	0.22% $\pm$ 0.24%		0.10% $\pm$ 0.05%		0.09% $\pm$ 0.10%		0.08% $\pm$ 0.08%	
<i>Nigrospora</i>	0.21% $\pm$ 0.21%		0.28% $\pm$ 0.03%		0.19% $\pm$ 0.16%		0.31% $\pm$ 0.11%	
<i>Pleochaeta</i>	0.15% $\pm$ 0.17%		0.05% $\pm$ 0.05%		0.13% $\pm$ 0.12%		0.13% $\pm$ 0.10%	
<i>Ulocladium</i>	0.14% $\pm$ 0.06%		0.06% $\pm$ 0.06%		0.01% $\pm$ 0.02%		0.09% $\pm$ 0.11%	
<i>Blumeria</i>	0.08% $\pm$ 0.01%		0.03% $\pm$ 0.01%		0.04% $\pm$ 0.03%		0.08% $\pm$ 0.05%	
<i>Hannaella</i>	0.11% $\pm$ 0.07%		0.00% $\pm$ 0.01%		0.04% $\pm$ 0.04%		0.03% $\pm$ 0.03%	
<i>Leptosphaerulina</i>	0.04% $\pm$ 0.03%		0.03% $\pm$ 0.03%		0.02% $\pm$ 0.01%		0.04% $\pm$ 0.05%	
<i>Vishniacozyma</i>	0.02% $\pm$ 0.03%		0.00% $\pm$ 0.01%		0.18% $\pm$ 0.29%		0.01% $\pm$ 0.02%	
<i>Fusarium</i>	0.06% $\pm$ 0.06%		0.07% $\pm$ 0.05%		0.44% $\pm$ 0.64%		0.14% $\pm$ 0.12%	
<i>Periconia</i>	0.02% $\pm$ 0.02%		0.09% $\pm$ 0.10%		0.15% $\pm$ 0.20%		0.03% $\pm$ 0.02%	
<i>Microsphaeropsis</i>	0.04% $\pm$ 0.04%		0.05% $\pm$ 0.05%		0.19% $\pm$ 0.18%		0.00% $\pm$ 0.00%	
<i>Stemphylium</i>	0.03% $\pm$ 0.03%		0.01% $\pm$ 0.03%		0.02% $\pm$ 0.02%		0.05% $\pm$ 0.05%	
<i>Sordaria</i>	0.00% $\pm$ 0.00%		0.10% $\pm$ 0.17%		0.00% $\pm$ 0.00%		0.00% $\pm$ 0.00%	

**Supplementary Table S5.** Bray-Curtis matrix was used to perform PERMANOVA analysis to highlight the genotype effect. All samples from each genotype were considered independently of treatment type. *p* (Bonferroni-corrected) and *F* values for comparison of 'Nebbiolo' (NE) and 'Moscato' (MO) samples are reported below the table.

	NE	MO
<i>P</i> value		
NE		0.0001
MO	0.0001	

*F*: 23.16

**Supplementary Table S6.** Bray-Curtis matrix was used to perform PERMANOVA analysis to assess possible effects of treatment on ‘Nebbiolo’ (NE). *p* (Bonferroni-corrected) and *F* values are reported below the table. CTRL = non-treated inoculated plants; AcS-Mt = plants treated with Acibenzolar-S-methyl (Bion, Syngenta Crop Protection); K-Pho = plants treated with Potassium phosphonate (Century, BASF Agro); Lam = inoculated plants treated with Laminarin (Vacciplant, Arysta Lifescience).

	NE CTRL	NE AcS-Mt	NE K-Pho	NE Lam
<i>P</i> value				
NE CTRL		0.499	0.2074	0.1042
NE AcS-Mt	0.499		0.3988	0.1055
NE K-Pho	0.2074	0.3988		0.101
NE Lam	0.1042	0.1055	0.101	
<i>F</i> value				
NE CTRL		0.5514	1.526	3.382
NE Ac-Mt	0.5514		0.8985	9.57
NE K-Pho	1.526	0.8985		7.114
NE Lam	3.382	9.57	7.114	

**Supplementary Table S7.** Bray-Curtis matrix was used to perform PERMANOVA analysis to assess possible effects of treatment on ‘Moscato’ (MO). *p* (Bonferroni-corrected) and *F* values are reported below the table. CTRL = non-treated inoculated plants; AcS-Mt = plants treated with Acibenzolar-S-methyl (Bion, Syngenta Crop Protection); K-Pho = plants treated with Potassium phosphonate (Century, BASF Agro); Lam = inoculated plants treated with Laminarin (Vacciplant, Arysta Lifescience).

	MO CTRL	MO AcS-Mt	MO K-Pho	MO Lam
<i>P</i> value				
MO CTRL		0.2999	0.3025	0.6088
MO AcS-Mt	0.2999		0.7008	0.6097
MO K-Pho	0.3025	0.7008		0.4067
MO Lam	0.6088	0.6097	0.4067	
<i>F</i> value				
MO CTRL		1.67	1.874	0.2504
MO Ac-Mt	1.67		0.4393	0.8533
MO K-Pho	1.874	0.4393		1.055
MO Lam	0.2504	0.8533	1.055	

**Supplementary Table S8.** Bray-Curtis matrix was used to perform PERMANOVA analysis in order to compare treatment effects on ‘Nebbiolo’ (NE) and ‘Moscato’ (MO) samples at once. *p* (Bonferroni-corrected) and *F* values are reported below the table. CTRL = non-treated inoculated plants; AcS-Mt = plants treated with Acibenzolar-S-methyl (Bion, Syngenta Crop Protection); K-Pho = plants treated with Potassium phosphonate (Century, BASF Agro); Lam = inoculated plants treated with Laminarin (Vacciplant, Arysta Lifescience).

	NE CTRL	NE AcS-Mt	NE K-Pho	NE Lam	MO CTRL	MO AcS-Mt	MO K-Pho	MO Lam
<i>P</i> value								
NE CTRL		0.0988	0.1941	0.7985	0.0946	0.1058	0.1019	0.2002
NE AcS-Mt	0.0988		0.7074	0.1035	0.405	0.0978	0.0989	0.4068
NE K-Pho	0.1941	0.7074		0.1998	0.3083	0.102	0.0988	0.2991
NE Lam	0.7985	0.1035	0.1998		0.1002	0.0999	0.0984	0.1967
MO CTRL	0.0946	0.405	0.3083	0.1002		0.3067	0.2997	1
MO AcS-Mt	0.1058	0.0978	0.102	0.0999	0.3067		0.7905	0.9029
MO K-Pho	0.1019	0.0989	0.0988	0.0984	0.2997	0.7905		0.7969
MO Lam	0.2002	0.4068	0.2991	0.1967	1	0.9029	0.7969	
<i>F</i> value								
NE CTRL		8.552	1.672	0.8406	3.89	10.54	10.45	3.399
NE Ac-Mt	8.552		0.6059	10.94	1.981	9.368	10.54	2.335
NE K-Pho	1.672	0.6059		2.146	1.083	4.463	4.413	1.72
NE Lam	0.8406	10.94	2.146		4.373	13.6	15.03	3.408
MO CTRL	3.89	1.981	1.083	4.373		1.054	1.215	0.3847
MO Ac-Mt	10.54	9.368	4.463	13.6	1.054		0.4001	0.5917
MO K-Pho	10.45	10.54	4.413	15.03	1.215	0.4001		0.7494
MO Lam	3.399	2.335	1.72	3.408	0.3847	0.5917	0.7494	

**Supplementary Table S9.** Alpha diversity indices calculated starting from ITS sequencing data obtained for each treatment in 'Nebbiolo' (NE) and 'Moscato' (MO). CTRL = non-treated inoculated plants; AcS-Mt = plants treated with Acibenzolar-S-methyl (Bion, Syngenta Crop Protection); K-Pho = plants treated with Potassium phosphonate (Century, BASF Agro); Lam = inoculated plants treated with Laminarin (Vacciplant, Arysta Lifescience).

	NE CTRL		NE AcS-Mt		NE K-Pho		NE Lam		MO CTRL		MO AcS-Mt		MO K-Pho		MO Lam	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<b>Simpson (D)</b>	0.38 ±	0.09	0.44 ±	0.06	0.53 ±	0.11	0.26 ±	0.04	0.60 ±	0.28	0.74 ±	0.05	0.76 ±	0.05	0.69 ±	0.19
<b>Shannon (H')</b>	0.87 ±	0.13	1.01 ±	0.10	1.18 ±	0.16	0.65 ±	0.09	1.37 ±	0.60	1.64 ±	0.10	1.72 ±	0.17	1.49 ±	0.45
<b>Chao</b>	20.33 ±	1.53	20.33 ±	1.00	20.67 ±	3.21	19.67 ±	1.00	20.33 ±	3.61	19.67 ±	2.31	19.67 ±	2.08	20.00 ±	2.00

**Supplementary Table S10.** Resume of read counts and statistics for each sequenced sample in the NovaSeq run.

Sample	Read Counts	GC (%)	AT (%)	Q20 (%)	Q30 (%)
1-					
1_MO_RNA	51,442,584	46.75	53.25	98.74	95.99
1-1_NE_RNA	49,070,822	46.68	53.32	98.75	95.97
1-					
2_MO_RNA	45,950,076	46.20	53.80	98.68	95.78
1-2_NE_RNA	52,359,574	46.09	53.91	98.73	95.96
1-					
3_MO_RNA	44,637,026	46.27	53.74	98.72	95.93
1-3_NE_RNA	105,207,854	46.46	53.54	98.62	95.62
2-					
1_MO_RNA	43,016,122	46.40	53.60	98.75	96.0
2-1_NE_RNA	99,822,934	45.94	54.06	98.70	95.82
2-					
2_MO_RNA	45,539,430	48.83	51.17	98.71	95.88
2-2_NE_RNA	98,299,580	45.87	54.13	98.76	95.93
2-					
3_MO_RNA	50,716,752	46.26	53.74	98.66	95.85
2-3_NE_RNA	98,607,242	45.75	54.26	98.69	95.75
3-					
1_MO_RNA	49,042,662	46.46	53.54	98.67	95.82
3-1_NE_RNA	82,768,782	45.87	54.13	98.59	95.61
3-					
2_MO_RNA	51,651,078	46.35	53.65	98.85	96.31
3-2_NE_RNA	87,883,904	46.60	53.40	98.59	95.59
3-					
3_MO_RNA	54,955,000	46.32	53.68	98.84	96.34
3-3_NE_RNA	52,636,722	47.58	52.42	98.66	95.84
4-					
1_MO_RNA	46,153,778	46.05	53.95	98.86	96.30
4-1_NE_RNA	53,996,182	46.73	53.27	98.67	95.93
4-					
2_MO_RNA	42,770,800	46.44	53.57	98.83	96.33
4-2_NE_RNA	53,019,634	46.91	53.09	98.69	95.81
4-					
3_MO_RNA	109,690,716	46.39	53.61	98.85	96.19
4-3_NE_RNA	47,729,898	46.34	53.66	98.71	95.92
5-					
1_MO_RNA	94,239,798	46.40	53.60	98.68	95.97
5-1_NE_RNA	48,834,504	46.25	53.75	98.78	96.07
5-					
2_MO_RNA	99,231,268	46.44	53.56	98.74	96.03
5-2_NE_RNA	41,094,770	45.74	54.26	98.75	95.92
5-					
3_MO_RNA	88,308,474	46.46	53.55	98.68	95.94

<u>5-3_NE_RNA</u>	<u>55,769,788</u>	<u>46.39</u>	<u>53.61</u>	<u>98.70</u>	<u>95.89</u>
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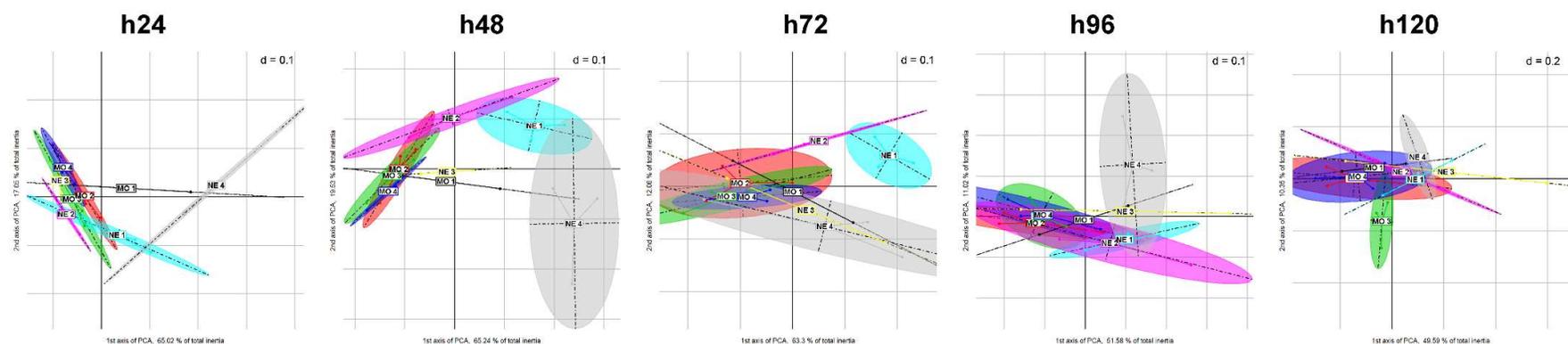
**Supplementary Table S11.** List of accession numbers retrieved from NCBI following integration with the custom database (see Methods section) for the detection of viruses, viroids and phytoplasmas.

Accession	Virus / Viroid / Phitoplasma name				
NC_022002.1	Grapevine red blotch-associated virus	NC_002692.1	Tomato mosaic virus	NC_011535.1	Grapevine Algerian latent virus
NC_015784.2	Grapevine vein-clearing virus Grapevine roditis leaf discoloration-associated virus	LT608395.1	Artichoke italian latent virus RNA 1	AY500881.1	Petunia asteroid mosaic virus
NC_027131.1	virus	LT608396.1	Artichoke italian latent virus RNA 2	NC_031692.1	Grapevine asteroid mosaic-associated virus
NC_035939.1	Grapevine Cabernet Sauvignon reovirus NSS	NC_005289.1	Broad bean wilt virus 1 RNA 1	NC_012484.1	Grapevine Syrah Virus-1
NC_035938.1	Grapevine Cabernet Sauvignon reovirus P7	NC_005290.1	Broad bean wilt virus 1 RNA 2	KM491303.1	Grapevine Red Globe virus
NC_035937.1	Grapevine Cabernet Sauvignon reovirus P6	NC_006057.1	Arabis mosaic virus RNA 1	NC_034205.1	Grapevine rupestris vein feathering virus
NC_035936.1	Grapevine Cabernet Sauvignon reovirus P4	NC_006056.1	Arabis mosaic virus RNA 2	NC_003347.1	Grapevine fleck virus
NC_035935.1	Grapevine Cabernet Sauvignon reovirus P1 Grapevine Cabernet Sauvignon reovirus segment 9	NC_015414.1	Cherry leaf roll virus RNA 1	FJ915122.1	Blackberry virus S
NC_027802.1	9	NC_015415.1	Cherry leaf roll virus RNA 2	NC_003739.1	Raspberry bushy dwarf virus RNA 1
NC_027816.1	Grapevine Cabernet Sauvignon reovirus P2	U20622.1	Blueberry leaf mottle virus RNA1	NC_003740.1	Raspberry bushy dwarf virus RNA 2
NC_027810.1	Grapevine Cabernet Sauvignon reovirus P10a	U20621.1	Blueberry leaf mottle virus RNA2	NC_011187.1	Rubus chlorotic mottle virus
NC_027809.1	Grapevine Cabernet Sauvignon reovirus P5	NC_015492.1	Grapevine Bulgarian latent virus RNA 1	KX949574.1	Southern tomato virus
NC_027808.1	Grapevine Cabernet Sauvignon reovirus P3a	NC_015493.1	Grapevine Bulgarian latent virus RNA 2	KX962563.1	Grapevine fabavirus RNA 1
NC_019493.1	Grapevine endophyte endornavirus	NC_018383.1	Grapevine Anatolian ringspot virus RNA 1	KX962564.1	Grapevine fabavirus RNA 2
NC_011705.1	Raphanus sativus cryptic virus 3 segment 1	NC_018384.1	Grapevine Anatolian ringspot virus RNA 2	HG939487.1	Tomato black ring virus RNA 1
NC_011706.1	Raphanus sativus cryptic virus 3 segment 2	NC_017939.1	Grapevine deformation virus RNA1	KX977561.1	Tomato black ring virus RNA 2
S63913.1	Beet cryptic virus 3	NC_017938.1	Grapevine deformation virus RNA2	KX645875.2	Grapevine enamovirus-1
NC_002050.1	Tomato spotted wilt virus RNA M	NC_003622.1	Grapevine chrome mosaic virus RNA 1	GQ845002.2	Sowbane mosaic virus
NC_002051.1	Tomato spotted wilt virus RNA S	NC_003621.1	Grapevine chrome mosaic virus RNA 2	JX658571.1	Grapevine partitivirus
NC_002052.1	Tomato spotted wilt virus RNA L	NC_003615.1	Grapevine fanleaf virus RNA 1	NC_035203.1	Grapevine virus T
NC_029783.1	Grapevine leafroll-associated virus 13	NC_003623.1	Grapevine fanleaf virus RNA 2	MF781081.1	Grapevine virus G
NC_007448.1	Grapevine leafroll-associated virus 2	NC_034214.1	Peach rosette mosaic virus RNA 1	MF521889.1	Grapevine virus H
NC_004667.1	Grapevine leafroll-associated virus 3	NC_034215.1	Peach rosette mosaic virus RNA 2	NC_037058.1	Grapevine virus I
NC_016509.1	Grapevine leafroll-associated virus 1	NC_005266.1	Raspberry ringspot virus RNA 1	MG637048.1	Grapevine virus J
NC_016436.1	Grapevine leafroll-associated virus 7	NC_005267.1	Raspberry ringspot virus RNA 2	NC_035480.1	Wild vitis virus 1
NC_016081.1	Grapevine leafroll-associated virus 5	NC_005097.1	Tobacco ringspot virus RNA 1	KX950822.1	Grapevine geminivirus A
NC_011702.1	Grapevine leafroll-associated virus 10	NC_005096.1	Tobacco ringspot virus RNA 2	KJ955447.1	Temperate fruit decay-associated virus
NC_016417.1	Grapevine leafroll-associated virus 6	NC_003840.1	Tomato ringspot virus RNA 1	NC_015784.2	Grapevine vein-clearing virus
NC_016416.1	Grapevine leafroll-associated virus 4	NC_003839.2	Tomato ringspot virus RNA 2	MF781082.1	Grapevine badnavirus 1
NC_011620.1	Potato virus X	NC_006964.1	Strawberry latent ringspot virus RNA 1	NC_001920.1	Grapevine yellow speckle viroid 1
NC_001948.1	Rupestris stem pitting associated virus-1	NC_006965.1	Strawberry latent ringspot virus RNA 2	NC_003612.1	Grapevine yellow speckle viroid 2
NC_015220.1	Grapevine berry inner necrosis virus	NC_001495.1	Alfalfa mosaic virus RNA 1	NC_003553.1	Australian grapevine viroid
NC_015782.1	Grapevine Pinot gris virus	NC_002024.2	Alfalfa mosaic virus RNA 2	NC_001351.1	Hop stunt viroid

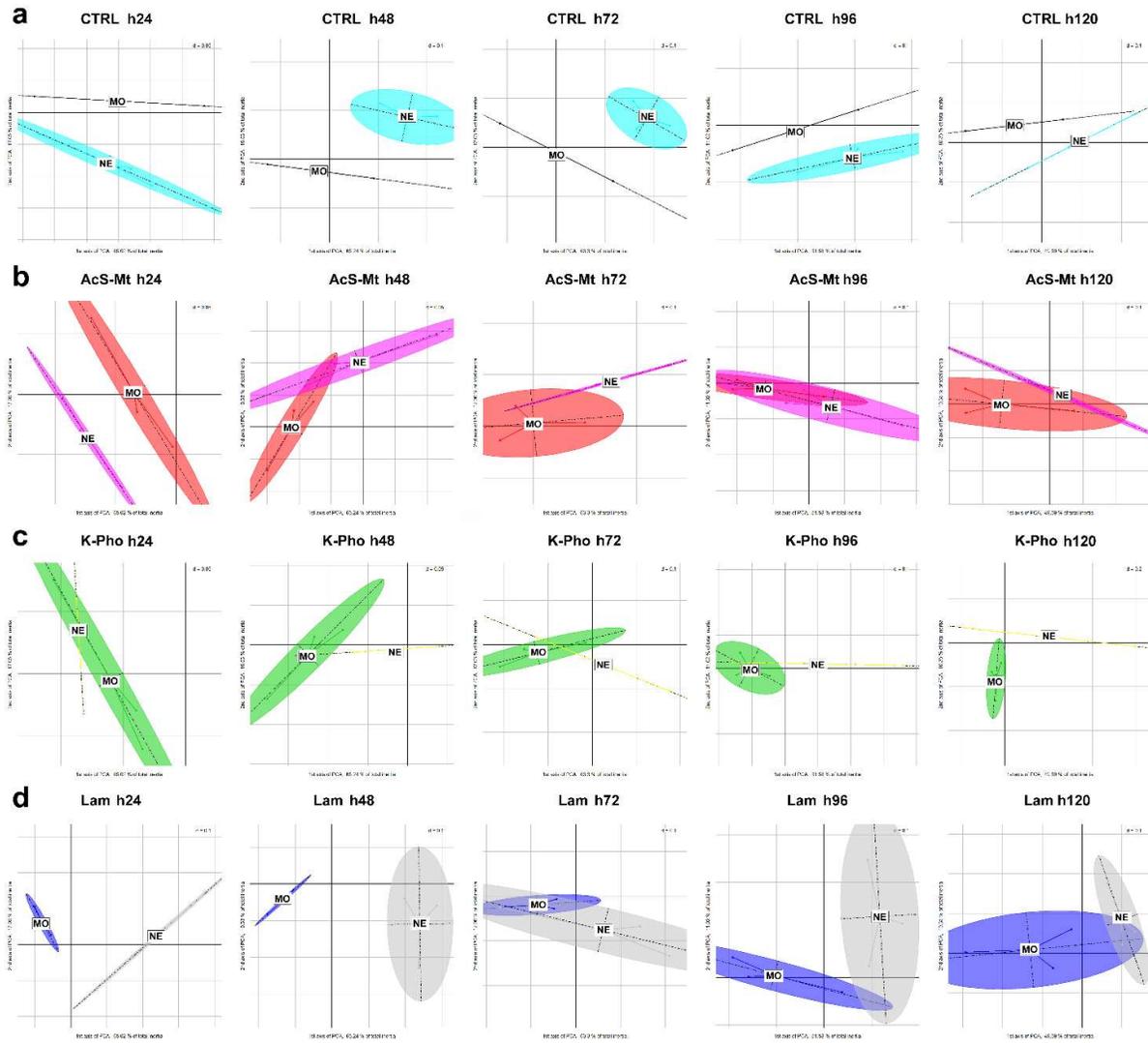
NC_003604.2	Grapevine virus A	NC_002025.1	Alfalfa mosaic virus RNA 3	NC_001464.1	Citrus exocortis viroid
NC_003602.1	Grapevine virus B	NC_002034.1	Cucumber mosaic virus RNA 1	JQ046414.1	Grapevine yellows phytoplasma 16S
MF774336.1	Grapevine virus D	NC_002035.1	Cucumber mosaic virus RNA 2	JQ900580.1	Grapevine yellows phytoplasma rpl22
NC_011106.1	Grapevine virus E	NC_001440.1	Cucumber mosaic virus RNA 3	AF385627.1	Flavescence doree phytoplasma rpl22
NC_018458.1	Grapevine virus F	AY590305.1	Grapevine angular mosaic virus	AF396951.1	Flavescence doree phytoplasma rps3
NC_003397.1	Bean common mosaic virus	NC_001265.2	Carnation mottle virus	JQ181540.1	Bois noir' phytoplasma 16S
NC_001367.1	Tobacco mosaic virus	NC_003487.1	Tobacco necrosis virus D		

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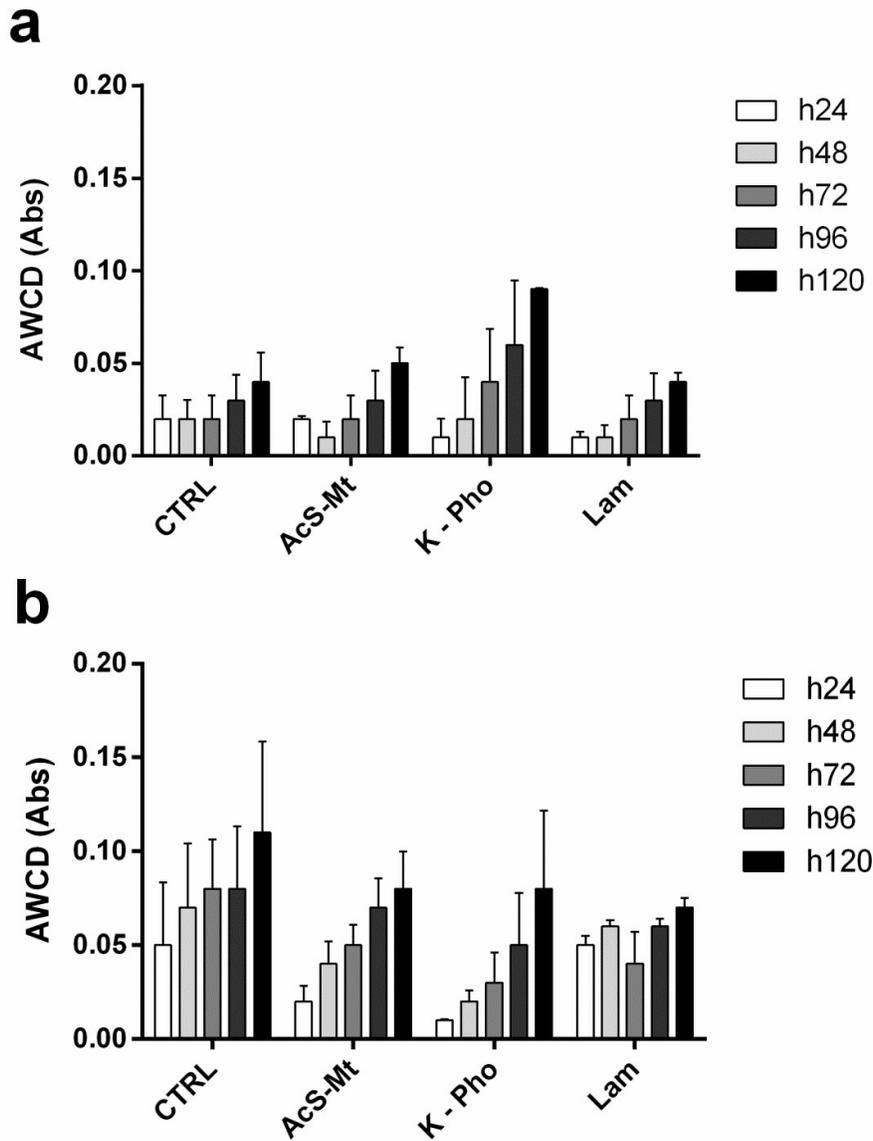
**Figure S1.** PCA analysis of EcoPlate™ data. Distinctions between cultivar ‘Moscato’ (MO) and ‘Nebbiolo’ (NE) as revealed by PCA over the time of plate incubation from day 1 (h24) to 5 (h120). Numbers reported after the name of the cultivar (NE: ‘Nebbiolo’, MO: ‘Moscato’) refer to the treatment-type as following stated: 1 = Inoculated untreated control (CTRL), 2 = Acibenzolar-S-methyl (AcS-Mt), 3 = Potassium Phosphonate (K-Pho), and 4 = Laminarin (Lam).



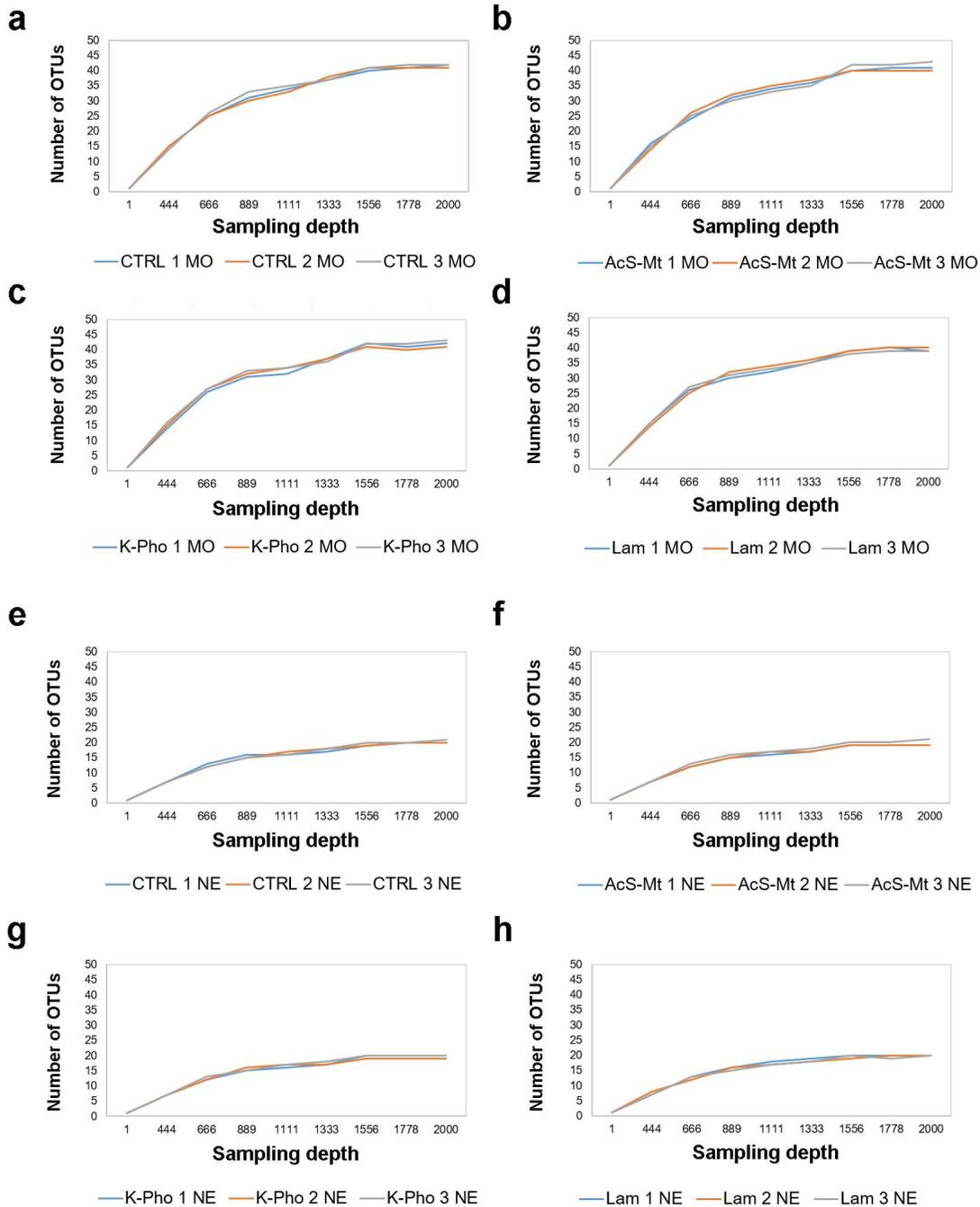
**Figure S2.** PCA analysis of EcoPlate™ data. Distinctions between cultivar ‘Moscato’ (MO) and ‘Nebbiolo’ (NE) compared within each treatment as revealed by PCA over the time of plate incubation from day 1 (h24) to 5 (h120). (a) Inoculated untreated control (CTRL), (b) Acibenzolar-S-methyl (AcS-Mt), (c) Potassium Phosphonate (K-Pho), and (d) Laminarin (Lam).



**Figure S3.** Average Well Colour Development (AWCD) in Biolog EcoPlates™ inoculated with ‘Moscato’ (a) and ‘Nebbiolo’ (b) leaf sample extracts. Values are calculated on the base of absorbance readings taken at 590 nm for each plate over a time course of 5 days (h24 to h120). Data represent mean  $\pm$  standard deviation of three biological replicates. Inoculated untreated control (CTRL), Acibenzolar-S-methyl (AcS-Mt), Potassium Phosphonate (K-Pho), and Laminarin (Lam).



**Figure S4.** Rarefaction OTU curves obtained for each biological replicate of ‘Moscato’ (MO, panels from a to d) and ‘Nebbiolo’ (NE, panels from e to h) leaf samples collected from untreated (CTRL) and treated (AcS-Mt = acibenzolar-S-methyl, K-Pho = Potassium Phosphonate, Lam = Laminarin) plants infected by powdery mildew.



**Figure S5.** Agarose gel electrophoretic analysis of DNA fragments amplified by multiplex RT-PCR for detection of virus (**a** and **b**, Gambino 2015), viroids (**b**, Hajizadeh et al., 2012) and Grapevine pinot gris virus, GPGV (**c**, Glasa et al., 2014) in ‘Moscato’ and ‘Nebbiolo’. CTRL - Inoculated untreated control, AcS-Mt - Acibenzolar-S-methyl, K-Pho - Potassium Phosphonate, LAM - Laminarin. NE: ‘Nebbiolo’, MO: ‘Moscato’.

