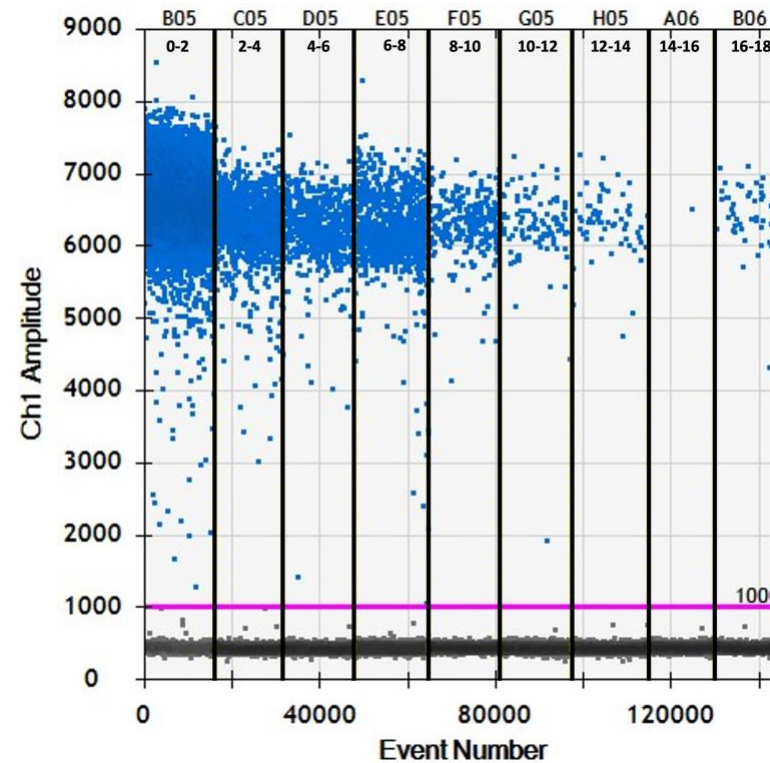


SUPPLEMENTARY DATA

Hrycan, J., Bowen, P., Forge, T., Hart, M., & Úrbez-Torres, J. R. Impact of water stress on *Phaeoconiella chlamydospora* abundance and Petri disease symptom development in young grapevines. *OENO One*, 59(1).

<https://doi.org/10.20870/oeno-one.2025.59.1.8317>

## SUPPLEMENTARY DATA



**Figure S1. ddPCR quantification at time of planting of *Phaeoconiella chlamydospora* in a ‘Merlot’ cane vacuum inoculated with 1k spores in two cm sections from 0-18 cm.**

Positive droplets for each well: B05: 13,297, C05: 1,418, D05: 599, E05: 932, F05: 283, G05: 102, H05: 62, A06: 1, B06: 48. Total droplets were >10,000 for each well. Threshold for positive samples was set at an amplitude of 1,000.

SUPPLEMENTARY DATA

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**Table S1. Mean SPAD leaf chlorophyll and standard error of the mean over time in 2021 for each level of inoculum and irrigation treatment in the greenhouse experiment.**

Treatment <sup>a</sup>	25-May	15-Jun	30-Jun	19-Jul	29-Jul	12-Aug	24-Aug	09-Sep
<b>NIC</b>	26.96 ± 0.41 a	33.40 ± 0.42 a	32.80 ± 0.50 a	34.95 ± 0.47 a	36.02 ± 0.42 a	35.59 ± 35.59 a	34.42 ± 0.46 a	34.52 ± 0.64 a
<b>WIC</b>	27.85 ± 0.35 a	33.46 ± 0.40 a	32.48 ± 0.39 a	35.02 ± 0.35 a	36.16 ± 0.40 a	35.71 ± 35.71 a	34.86 ± 0.43 a	34.20 ± 0.38 a
<b>1k</b>	27.77 ± 0.37 a	33.87 ± 0.66 a	33.07 ± 0.33 a	35.53 ± 0.37 a	35.96 ± 0.42 a	36.28 ± 36.28 a	34.86 ± 0.56 a	33.87 ± 0.44 a
<b>5k</b>	27.17 ± 0.37 a	32.83 ± 0.40 a	32.43 ± 0.47 a	34.51 ± 0.39 a	35.75 ± 0.55 a	35.50 ± 35.50 a	34.39 ± 0.45 a	34.24 ± 0.50 a
<b>25k</b>	27.19 ± 0.43 a	33.71 ± 0.45 a	32.55 ± 0.44 a	34.96 ± 0.45 a	36.06 ± 0.45 a	35.74 ± 35.74 a	34.81 ± 0.49 a	34.04 ± 0.68 a
<b>NWD</b>	27.36 ± 0.27 A	33.54 ± 0.29 A	33.46 ± 0.27 B	35.26 ± 0.26 A	36.71 ± 0.28 B	35.76 ± 35.76 A	34.52 ± 0.33 A	34.58 ± 0.36 B
<b>WD</b>	27.41 ± 0.23 A	33.37 ± 0.33 A	31.88 ± 0.24 A	34.72 ± 0.26 A	35.26 ± 0.27 A	35.77 ± 35.77 A	34.82 ± 0.28 A	33.75 ± 0.33 A

<sup>a</sup> NIC: non-inoculated control, WIC: water inoculated control, 1k: 1,000 spores, 5k: 5,000 spores, 25k: 25,000 spores, NWD: no water deficit (100% irrigation), WD: water deficit (50% irrigation).

\* indicates significant effect of inoculum ( $p < 0.05$ ) according to Spearman correlation test.

Same lowercase and uppercase letter in each column represent no significant differences ( $p = 0.05$ ) according to Tukey's significance test.

SUPPLEMENTARY DATA

Hrycan, J., Bowen, P., Forge, T., Hart, M., & Úrbez-Torres, J. R. Impact of water stress on *Phaeoconiella chlamydospora* abundance and Petri disease symptom development in young grapevines. *OENO One*, 59(1).

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**Table S2. Mean dry pruning weight, dry root weight, and node number for each year and standard error of the mean for year 1 and year 2 for each level irrigation treatment and AM fungi in the greenhouse.**

Treatment <sup>a</sup>	2020		2021		
	Pruning weight (g)	Node number	Pruning weight (g)	Node number	Root weight (g)
NWD/AM-	14.87 ± 0.31 a	69.91 ± 2.76 a	27.41 ± 0.72 a	99.03 ± 2.48 b	37.65 ± 1.34 a
NWD/AM+	14.29 ± 0.36 a	63.52 ± 2.89 a	30.11 ± 0.79 a	104.9 ± 2.72 b	39.62 ± 1.52 a
WD/AM-	15.11 ± 0.40 a	68.18 ± 3.09 a	25.47 ± 0.55 a	80.27 ± 1.68 a	32.67 ± 1.02 a
WD/AM+	15.09 ± 0.41 a	67.94 ± 2.99 a	26.07 ± 0.62 a	77.88 ± 1.53 a	30.72 ± 1.08 a
<b>NWD</b>	14.58 ± 0.24 A	66.71 ± 2.04 A	28.76 ± 0.56 B	101.9 ± 1.87 B	38.60 ± 1.02 B
<b>WD</b>	15.10 ± 0.29 A	68.06 ± 2.15 A	25.77 ± 0.41 A	79.08 ± 1.15 A	31.76 ± 0.75 A
<b>AM-</b>	14.99 ± 0.25 A	69.05 ± 2.07 A	26.44 ± 0.47 A	89.65 ± 1.89 A	34.94 ± 0.89 A
<b>AM+</b>	14.69 ± 0.28 A	65.73 ± 2.10 A	28.09 ± 0.56 A	91.18 ± 2.28 A	34.91 ± 1.11 A

<sup>a</sup> NWD: no water deficit (100% irrigation), WD: water deficit (50% irrigation), AM+: Arbuscular mycorrhizae inoculated, AM-: Arbuscular mycorrhizae non-inoculated

Same lowercase and uppercase letter in each column (stress x AM interaction and stress and AM separately) represent no significant differences (p = 0.05) according to Tukey's significance test.

SUPPLEMENTARY DATA

Hrycan, J., Bowen, P., Forge, T., Hart, M., & Úrbez-Torres, J. R. Impact of water stress on *Phaeoconiella chlamydospora* abundance and Petri disease symptom development in young grapevines. *OENO One*, 59(1).

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**Table S3. Mean leaf chlorophyll content and standard error of the mean each year for each cultivar, level of inoculum, and level of irrigation treatment in the field.**

Cultivar	Treatment <sup>a</sup>	2021	2022	2023
Self-rooted	WIC	33.66 ± 0.56	27.12 ± 0.87	22.80 ± 1.24
	2.5k	34.78 ± 0.31	27.43 ± 0.68	25.88 ± 1.25
	25k	33.97 ± 0.52	26.44 ± 0.97	25.23 ± 1.25
	NWD	33.35 ± 0.39 A	27.45 ± 0.59 A	23.75 ± 0.86 A
	WD	34.96 ± 0.32 A	26.42 ± 0.84 A	22.23 ± 1.23 A
Grafted	WIC	34.82 ± 0.38 *	26.32 ± 1.04	28.61 ± 0.60
	2.5k	33.78 ± 0.91 *	26.99 ± 0.73	27.02 ± 0.96
	25k	32.64 ± 0.84 *	25.53 ± 1.32	27.84 ± 0.68
	NWD	32.97 ± 0.69 A	26.58 ± 0.84 A	28.59 ± 0.74 A
	WD	34.52 ± 0.54 A	26.07 ± 0.87 A	27.19 ± 0.51 A
Mean	WIC	34.24 ± 0.35	26.64 ± 0.66	25.97 ± 0.90
	2.5k	34.28 ± 0.51	27.16 ± 0.50	26.71 ± 0.79
	25k	33.28 ± 0.50	25.80 ± 0.88	25.36 ± 0.84
	NWD	33.16 ± 0.39 B	26.99 ± 0.53 A	26.35 ± 0.72 A
	WD	34.74 ± 0.32 A	26.22 ± 0.62 A	25.60 ± 0.70 A

<sup>a</sup> WIC: water inoculated control, 2.5k: 2,500 spores, 25k: 25,000 spores, NWD: no water deficit (100% irrigation), WD: water deficit (50% irrigation).

Same uppercase letter within each column for each cultivar represent no significant differences ( $p = 0.05$ ) according to Tukey's significance test.

\* indicates effect of inoculum ( $p < 0.05$ ) according to Spearman correlation test.

SUPPLEMENTARY DATA

Hrycan, J., Bowen, P., Forge, T., Hart, M., & Úrbez-Torres, J. R. Impact of water stress on Phaeoconiella chlamydozpora abundance and Petri disease symptom development in young grapevines. *OENO One*, 59(1). <https://doi.org/10.20870/oeno-one.2025.59.1.8317>



**Table S4. Mean dry pruning weight, node number, trunk diameter, and dry root weight and standard error of the mean for each year, cultivar, level of infection, and irrigation treatment in the field.**

Cultivar	Inoculum <sup>a</sup>	Irrigation <sup>b</sup>	2020		2021		2022		2023				
			Pruning weight (g)	Node #	Pruning weight (g)	Node #	Pruning weight (g)	Node #	Pruning weight (g)	Node #	Trunk diameter (mm)	Root weight (g)	
Self-rooted	WIC	NWD	1.27 ± 0.24 a	N/A	16.92 ± 5.37 a	33.83 ± 6.83 a	16.15 ± 6.93 a	32.50 ± 4.81 a	6.53 ± 2.13 a	52.17 ± 5.31 a	12.32 ± 0.76 a	34.77 ± 7.59 a	
		WD	1.43 ± 0.20 a	N/A	11.05 ± 3.89 a	27.71 ± 6.18 a	17.63 ± 6.17 a	23.67 ± 4.11 a	5.79 ± 3.50 a	41.25 ± 12.30 a	12.52 ± 0.78 a	25.75 ± 4.78 a	
		<b>Mean</b>	<b>1.36 ± 0.16</b>	<b>N/A</b>	<b>13.76 ± 3.34</b>	<b>30.54 ± 4.66</b>	<b>16.89 ± 4.64</b>	<b>28.08 ± 3.41</b>	<b>6.23 ± 1.90</b>	<b>47.80 ± 6.10</b>	<b>12.42 ± 0.54</b>	<b>30.26 ± 4.67</b>	
	2.5k	NWD	1.17 ± 0.33 a	N/A	12.39 ± 3.82 a	23.67 ± 3.87 a	37.33 ± 16.92 a	29.25 ± 5.10 a	5.54 ± 3.04 a	36.75 ± 9.78 a	13.94 ± 1.11 a	36.13 ± 13.85 a	
		WD	1.22 ± 0.20 a	N/A	12.75 ± 3.53 a	30.86 ± 5.69 a	18.53 ± 13.63 a	21.00 ± 5.69 a	N/A	N/A	12.57 ± 0.93 a	30.31 ± 12.48 a	
		<b>Mean</b>	<b>1.2 ± 0.19</b>	<b>N/A</b>	<b>12.58 ± 2.59</b>	<b>27.54 ± 3.68</b>	<b>27.93 ± 11.36</b>	<b>25.13 ± 4.09</b>	<b>5.54 ± 3.04</b>	<b>65.0 ± 9.78</b>	<b>13.25 ± 0.76</b>	<b>33.22 ± 9.38</b>	
	25k	NWD	1.98 ± 0.34 a	N/A	10.58 ± 3.59 a	23.67 ± 4.75 a	16.72 ± 3.63 a	28.20 ± 4.98 a	3.81 ± 1.00 a	40.75 ± 3.38 a	12.96 ± 0.60 a	29.18 ± 4.21 a	
		WD	1.13 ± 0.24 a	N/A	7.73 ± 2.57 a	17.86 ± 4.86 a	10.63 ± 4.03 a	23.25 ± 3.43 a	0.85 ± 0.10 a	30.0 ± 0.82 a	11.04 ± 0.86 a	17.56 ± 3.74 a	
		<b>Mean</b>	<b>1.52 ± 0.23</b>	<b>N/A</b>	<b>9.05 ± 2.19</b>	<b>20.54 ± 3.51</b>	<b>14.01 ± 2.88</b>	<b>26.00 ± 3.27</b>	<b>2.54 ± 0.80</b>	<b>36.14 ± 2.81</b>	<b>12.11 ± 0.60</b>	<b>24.01 ± 3.46</b>	
	Grafted	WIC	NWD	0.78 ± 0.16 a	N/A	28.33 ± 3.63 a	36.50 ± 4.75 a	57.23 ± 7.54 a	46.17 ± 3.59 a	16.52 ± 2.92 a	73.17 ± 5.36 a	13.12 ± 0.54 a	47.36 ± 3.85 a
			WD	0.97 ± 0.17 a	N/A	18.04 ± 4.09 a	31.57 ± 4.33 a	33.44 ± 9.83 a	33.86 ± 3.91 a	12.52 ± 1.82 a	67.17 ± 5.22 a	11.88 ± 0.48 a	38.94 ± 7.23 a
			<b>Mean</b>	<b>0.89 ± 0.12</b>	<b>N/A</b>	<b>22.79 ± 3.11</b>	<b>33.85 ± 3.27</b>	<b>44.42 ± 7.14</b>	<b>39.54 ± 3.18</b>	<b>14.52 ± 1.81</b>	<b>70.17 ± 3.84</b>	<b>12.45 ± 0.40</b>	<b>42.83 ± 4.43</b>
2.5k		NWD	0.85 ± 0.17 a	N/A	22.87 ± 8.27 a	25.83 ± 7.86 a	63.88 ± 22.03 a	43.17 ± 2.35 a	14.44 ± 3.30 a	65.83 ± 6.78 a	12.40 ± 0.87 a	39.06 ± 4.98 a	
		WD	1.05 ± 0.14 a	N/A	17.38 ± 4.66 a	30.43 ± 5.74 a	40.67 ± 3.24 a	37.00 ± 1.97 a	13.72 ± 2.79 a	70.60 ± 2.75 a	11.91 ± 0.49 a	48.41 ± 4.46 a	
		<b>Mean</b>	<b>0.96 ± 0.11</b>	<b>N/A</b>	<b>19.92 ± 4.63</b>	<b>28.31 ± 4.81</b>	<b>52.28 ± 11.63</b>	<b>40.08 ± 1.77</b>	<b>14.11 ± 2.21</b>	<b>68.00 ± 3.97</b>	<b>12.16 ± 0.50</b>	<b>43.74 ± 3.60</b>	
25k		NWD	0.67 ± 0.18 a	N/A	16.31 ± 6.46 a	23.50 ± 6.47 a	32.62 ± 8.38 a	37.00 ± 5.85 a	12.47 ± 1.02 a	69.67 ± 5.93 a	10.88 ± 0.92 a	27.63 ± 5.03 a	
		WD	0.76 ± 0.15 a	N/A	18.75 ± 6.79 a	31.83 ± 8.98 a	38.98 ± 12.66 a	32.00 ± 2.87 a	15.00 ± 2.50 a	73.67 ± 5.92 a	12.09 ± 0.69 a	40.91 ± 5.14 a	
		<b>Mean</b>	<b>0.72 ± 0.12</b>	<b>N/A</b>	<b>17.53 ± 4.70</b>	<b>27.67 ± 5.66</b>	<b>36.09 ± 7.60</b>	<b>34.27 ± 3.18</b>	<b>14.16 ± 1.75</b>	<b>72.33 ± 4.46</b>	<b>11.54 ± 0.59</b>	<b>34.87 ± 4.13</b>	
Mean		WIC	NWD	1.03 ± 0.16 a	N/A	22.63 ± 3.63 a	35.17 ± 4.18 a	36.69 ± 7.83 a	39.33 ± 3.59 a	11.53 ± 2.31 a	62.67 ± 4.84 a	11.77 ± 0.49 a	41.06 ± 4.63 a
			WD	1.20 ± 0.14 a	N/A	14.54 ± 2.97 a	29.64 ± 3.81 a	26.15 ± 6.40 a	29.15 ± 3.17 a	9.83 ± 2.06 a	56.80 ± 7.08 a	12.05 ± 0.40 a	32.85 ± 4.83 a
			<b>Mean</b>	<b>1.12 ± 0.11</b>	<b>N/A</b>	<b>18.27 ± 2.45</b>	<b>32.19 ± 2.87</b>	<b>31.21 ± 5.13</b>	<b>34.17 ± 2.64</b>	<b>10.75 ± 1.58</b>	<b>60.00 ± 4.21</b>	<b>12.44 ± 0.33</b>	<b>36.79 ± 3.45</b>
	2.5k	NWD	1.01 ± 0.19 a	N/A	17.63 ± 4.80 a	24.75 ± 4.39 a	53.26 ± 15.41 a	37.60 ± 3.29 a	10.88 ± 2.70 a	54.20 ± 7.22 a	13.39 ± 0.58 a	37.89 ± 6.31 a	
		WD	1.14 ± 0.13 a	N/A	15.07 ± 2.99 a	30.64 ± 4.04 a	31.81 ± 6.73 a	30.60 ± 3.57 a	12.88 ± 2.45 a	69.67 ± 2.45 a	11.87 ± 0.75 a	41.17 ± 6.32 a	
		<b>Mean</b>	<b>1.08 ± 0.11</b>	<b>N/A</b>	<b>16.25 ± 2.75</b>	<b>27.92 ± 3.03</b>	<b>42.54 ± 8.74</b>	<b>34.10 ± 2.55</b>	<b>11.63 ± 1.94</b>	<b>60.00 ± 4.97</b>	<b>12.60 ± 0.45</b>	<b>39.53 ± 4.48</b>	
	25k	NWD	1.32 ± 0.27 a	N/A	13.45 ± 3.79 a	23.58 ± 4.01 a	24.67 ± 5.21 a	32.60 ± 4.09 a	7.52 ± 1.77 a	53.14 ± 6.28 a	12.28 ± 0.61 a	28.40 ± 3.29 a	
		WD	1.62 ± 0.60 a	N/A	12.82 ± 3.75 a	24.31 ± 5.27 a	27.64 ± 8.92 a	28.50 ± 2.59 a	10.28 ± 2.78 a	59.11 ± 7.92 a	12.53 ± 0.44 a	31.57 ± 4.99 a	
		<b>Mean</b>	<b>1.13 ± 0.16</b>	<b>N/A</b>	<b>13.12 ± 2.67</b>	<b>23.96 ± 3.35</b>	<b>26.16 ± 5.18</b>	<b>30.55 ± 2.46</b>	<b>9.08 ± 1.78</b>	<b>56.50 ± 5.29</b>	<b>11.79 ± 0.43</b>	<b>29.99 ± 3.01</b>	

<sup>a</sup> WIC: water inoculated control, 2.5k: 2,500 spores, 25k: 25,000 spores.

<sup>b</sup> NWD: no water deficit (100 % irrigation), WD: water deficit (50 % irrigation).

Same lowercase letter within each cultivar in each column represent no significant differences (p = 0.05) according to Tukey's significance test.

\* indicates effect of inoculum (p < 0.05) according to Spearman correlation test.