

Supplementary Materials

The Physiological Impact of GFLV Virus Infection on Grapevine Water Status

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Supplemental Table S1: Significance of ANOVA in stem water potential (Ψ_{STEM}), root hydraulic conductivity (RHC), and vessel parameters among the four treatments under comparison in the potted own-rooted grapevines of cv. Schioppettino.

| The days before/after the start of different water regime | (Ψ_{STEM}) | RHC | diameter of open xylem | diameter of occluded xylem | Portion of area of occluded xylem elements in the total area of cross sections of all xylem elements (%) |
|---|--------------------------|-----|------------------------|----------------------------|--|
| -9 | ns | ns | --- | --- | --- |
| 0 | * | ** | ns | ns | ns |
| 3 | * | --- | --- | --- | --- |
| 6 | ns | ns | ns | * | * |
| 9 | ns | --- | --- | --- | --- |
| 12 | ** | ** | ns | ns | ns |
| 15 | *** | ns | ns | ns | * |

Supplemental Table S2: Significance of ANOVA in 9-cis-epoxycarotenoid dioxygenase 1 (*NCED1*), 9-cis-epoxycarotenoid dioxygenase 2 (*NCED2*), WRKY encoding transcription factor (*WRKY54*) and RD22-like protein (*RD22*), genes among the four treatments under comparison in the potted own-rooted grapevines of cv. Schioppettino.

| The days before/after the start of different water regime | <i>NCED1</i> | <i>NCED2</i> | <i>WRKY54</i> | <i>RD22</i> |
|---|--------------|--------------|---------------|-------------|
| 0 | ns | ns | ns | ns |
| 9 | ns | ns | ns | ns |
| 12 | ns | ns | ns | * |

Supplemental Table S3: Daily irrigation applied to each vine from the beginning to the end of the experiment of the well-watered (WW) and water-stressed (WS) plants, and environmental conditions monitored in the greenhouse during the course of the experiment.

| | Daily irrigation (L pot ⁻¹ d ⁻¹) | | Daily temperature (°C) | | | |
|------|---|------|------------------------|-------|-------|-----------------------|
| date | WW | WS | T min | T med | T max | Relative Humidity (%) |
| 15/6 | 0.24 | 0.24 | 12.8 | 20.7 | 26.9 | 76 |
| 16/6 | 0.25 | 0.25 | 14.6 | 22.6 | 29.0 | 76 |
| 17/6 | 0.25 | 0.25 | 15.8 | 24.5 | 31.1 | 72 |
| 18/6 | 0.25 | 0.25 | 19.0 | 26.3 | 33.2 | 62 |
| 19/6 | 0.25 | 0.25 | 17.1 | 26.4 | 33.6 | 63 |
| 20/6 | 0.26 | 0.26 | 19.4 | 26.9 | 33.3 | 67 |
| 21/6 | 0.26 | 0.26 | 20.3 | 27.2 | 33.1 | 65 |
| 22/6 | 0.26 | 0.26 | 22.1 | 27.3 | 32.0 | 49 |
| 23/6 | 0.26 | 0.26 | 20.5 | 25.6 | 28.7 | 52 |
| 24/6 | 0.26 | 0.26 | 19.2 | 25.5 | 31.6 | 57 |
| 25/6 | 0.26 | 0.26 | 19.0 | 23.6 | 29.9 | 71 |
| 26/6 | 0.26 | 0.26 | 16.9 | 23.1 | 29.4 | 56 |
| 27/6 | 0.25 | 0 | 14.8 | 23.3 | 29.9 | 65 |
| 28/6 | 0.26 | 0 | 17.0 | 24.1 | 30.4 | 69 |
| 29/6 | 0.26 | 0 | 17.5 | 25.4 | 31.5 | 68 |
| 30/6 | 0.27 | 0 | 19.7 | 26.7 | 33.2 | 71 |
| 1/7 | 0.27 | 0 | 20.3 | 27.5 | 34.7 | 71 |
| 2/7 | 0.28 | 0 | 20.2 | 28.8 | 37.4 | 59 |
| 3/7 | 0.28 | 0 | 20.2 | 26.9 | 32.7 | 70 |
| 4/7 | 0.28 | 0 | 19.5 | 26.3 | 32.6 | 68 |
| 5/7 | 0.28 | 0 | 20.7 | 26.4 | 32.5 | 66 |
| 6/7 | 0.28 | 0 | 17.7 | 23.2 | 30.0 | 74 |
| 7/7 | 0.27 | 0 | 16.6 | 24.4 | 30.5 | 75 |
| 8/7 | 0.27 | 0 | 19.0 | 25.5 | 31.7 | 71 |
| 9/7 | 0.28 | 0 | 17.1 | 26.0 | 32.7 | 66 |
| 10/7 | 0.28 | 0.28 | 21.0 | 26.0 | 32.4 | 57 |
| 11/7 | 0.29 | 0.29 | 17.2 | 24.8 | 31.6 | 72 |
| 12/7 | 0.28 | 0.28 | 16.5 | 23.3 | 28.9 | 68 |
| 13/7 | 0.28 | 0.28 | 17.8 | 21.9 | 26.2 | 66 |

Supplemental Table S4: Primers and probes used for gene expression analysis.

| Gene name | Target gene ID | Description | Forward primer sequence | Source |
|-----------|----------------|-------------------------------------|---|--------|
| | | | Reverse primer sequence | |
| | | | Probe sequence | |
| | | | | |
| NCED1 | AY337613 | 9-cis-epoxycarotenoid dioxygenase 1 | TCCCTCACGAGTTCCTATG ATATGCGGACCATCCCTCT | [66] |
| NCED2 | AY337614 | 9-cis-epoxycarotenoid dioxygenase | GAATAGGGTTTTGGGGGAAC GGAAGATCCAAGAGAGGGAAA | [66] |
| RD22 | NM_001281183.1 | RD22-like protein | CCCATCCTTGCTCTTATCTCT CACCTCCAGGTTTTCCATTTC | [67] |
| WRKY54 | Vv_10004898 | WRKY encoding transcription factor | TCCCATATGAGAAAGGAAGAG TCCGTCTACACCGCAGTC | [68] |
| COX | X83206 | cytochrome oxidase | CGTCGCATTCCAGATTATCCA CAACTACGGATATATAAGAGCCAAAAGT FAM-TGCTTACGCTGGATGGAATGCCCT-TA MRA | [69] |
| UBI_CF | Vitvi19g00744 | ubiquitin-conjugating enzyme 28 | CTATATGCTCGCTGCTGACG AAGCCAGGCAGAGACAAGTC | [70] |