Supporting Information

Fortier *et al*. (2023) Evidence that Ophiostomatoid fungal symbionts of mountain pine beetle do not play a role in overcoming lodgepole pine defenses during mass attack.

The following Supporting Information is available for this article:

Supplementary Fig. S1. Experimental field site overview.

Supplementary Fig. S2. Tissue collection strategy from mature lodgepole pine trees used in this study.

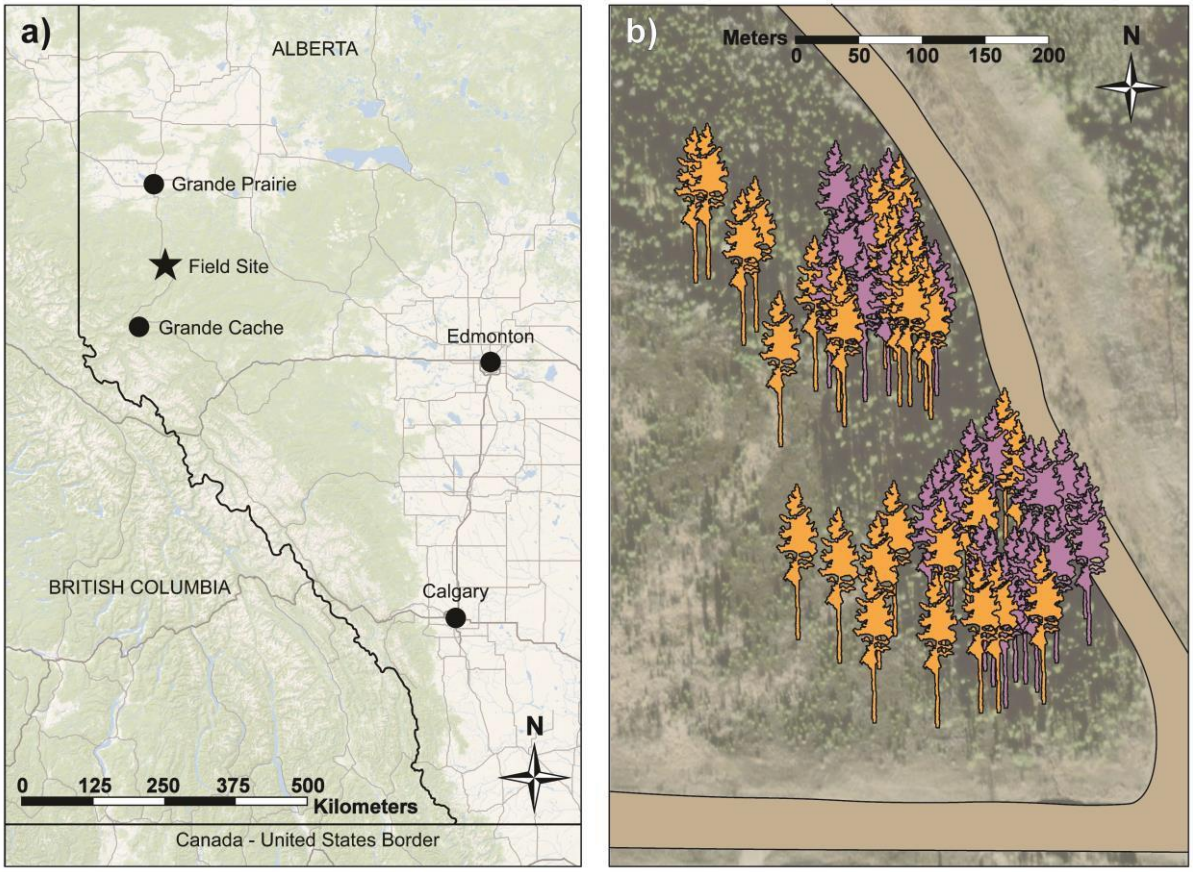
Supplementary Table S1. Forward and reverse primer sequences used in qRT-PCR analyses.

Supplementary Table S2. Summary of statistics calculated using the estimated marginal means between modeled groups for hormones measured in secondary phloem and secondary xylem.

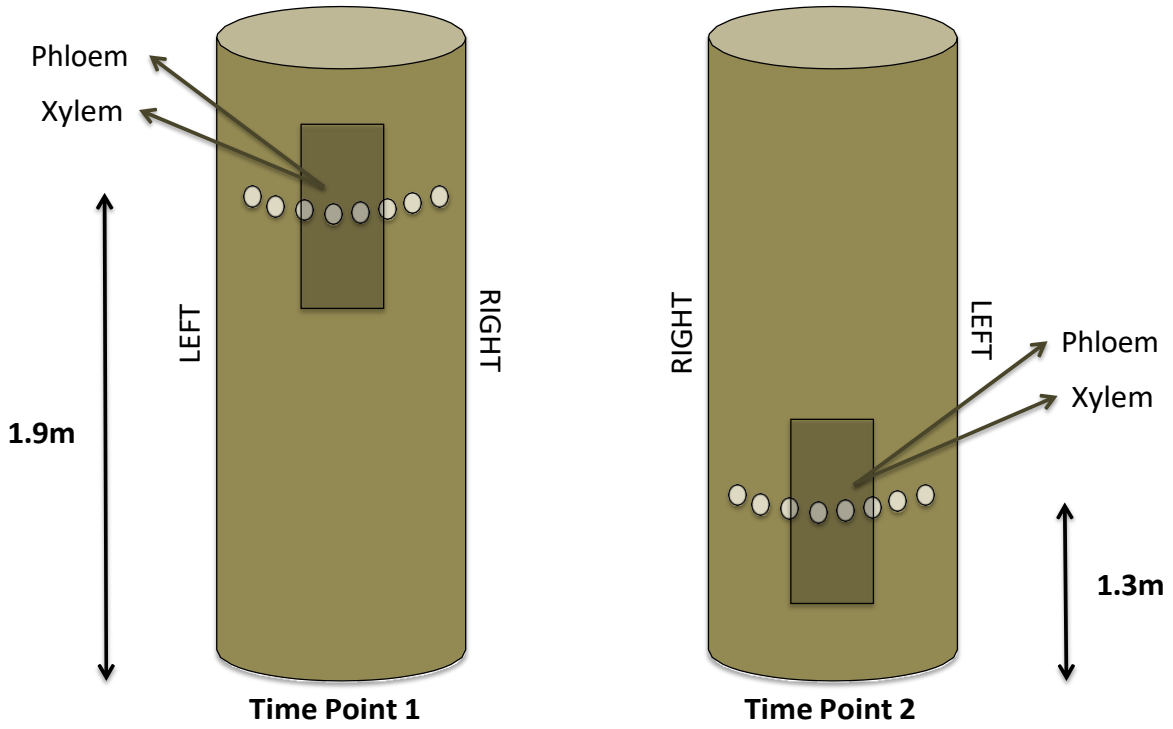
Supplementary Table S3. Summary of statistics calculated using the estimated marginal means between modeled groups for phenolic compounds measured in secondary phloem that were found to be significant predictors in a non-metric multidimensional scaling (NMDS) model and that met assumptions of normality and homoscedascity when fit to a generalized linear model.

Supplementary Table S4. Summary of statistics calculated using the estimated marginal means between modeled groups for phenolic compounds measured in secondary xylem that were found to be significant predictors in a non-metric multidimensional scaling (NMDS) model and that met assumptions of normality and homoscedascity when fit to a generalized linear model.

Supplementary Table S5. Summary of statistics calculated using the estimated marginal means between modeled groups for gene transcript abundance measured in secondary phloem and secondary xylem.



Supplementary Figure S1. Experimental field site overview. (a) Map depicting the field site location (54º27′N, 118º37′W; star) within Alberta, Canada. (b) Distribution of trees within this field site that were selected for the mountain pine beetle mass-attack experiment (marked with orange trees within this figure) and for the *Grosmannia clavigera* inoculation experiment (marked with purple trees within this figure). Tree locations as mapped using GPS correspond to the bottom tip of the tree icon in this figure.



Supplementary Figure S2. Tissue collection strategy from mature lodgepole pine trees used in this study.

Secondary phloem and secondary xylem were sampled at a height of 1.9 m for the first sampling time points, 7 days post inoculation (dpi) or 1 days post wound (dpw), while secondary phloem and secondary xylem at the second sampling time points (14 dpi or 7dpw) were sampled at 1.3 m on the opposite side of the trunk of the same trees. Circles represent locations of mock inoculation, *G. clavigera* inoculation, or mock attack. Uninoculated and unattacked control samples were collected at the same locations on untreated trees. The inner bark, representing secondary phloem, was collected by first removing strips of bark approximately 10 cm x 20 cm from the wood using a chisel, then peeling the light coloured tissue (secondary phloem) away from the periderm (outer, darker coloured portion of the bark) from each of these strips. Secondary xylem samples were collected from the exposed wood, using a spokeshave to slice shaving approximately 1-2 mm thick from the current year's xylem growth. Samples were immediately flash frozen using liquid nitrogen and stored on dry ice until being transferred to -80ºC for long term storage. Following sampling at 7 dpi and 1 dpw, exposed wood at the 1.9 m sampled inoculation sites was covered with aluminum foil secured with duct tape wrapped around the trunk to minimize infection by other agents prior to the second sampling points.

Supplementary Table S1. Forward and reverse primer sequences used in quantitative reverse transcription polymerase chain reaction (qRT-PCR) analyses. Asterisks (*) indicate genes used for reference. Secondary phloem data was normalized to the arithmetic mean of PcTIF5a, PcVHA-A, and PcUBA1 gene expression. Secondary xylem data was normalized to the arithmetic mean of PcTIF5a, PcUBC11, and PcUBA1 gene expression**.**

Gene	**GenBank Accession No.**	**Forward Primer 5'-3'**	**Reverse Primer 5'-3'**
PcCHS	GT269843.1, GT269207.1	CGCAGGAATCAGAGTGAAATTAACCCG	CGGTCGTTTACATAATACCCCACCAAG
PcDFR1	GT231576.1, GT231241.1	CCTCATTACATGATACTGAGACAGGTA	GCCACTTGGACAATGGTAGCATC
PcDFR2	GT246632.1, GT246285.1	CGAAGGGAAGATACATCTCTTCTTCAG	GGATTCATCCACATCCTTGAACTCG
PcOMT1	GT244589.1, GT244249.1	CACCATTCTCCCTGTTGCTGC	CCCACCTCCTTAGCCAAATCTC
PcOMT2	GT254690.1, GT251153.1	TGTCCAAAGCCTAATAAGCTGTTGC	TACTGCATGATAACAACCCCAGC
PcSTS	GT240300.1, GT239954.1	TGGTGGGGCAAGCTCTGTTC	GCCTTCTCCACTTGAGGGATGG
*PcTIF5a**	KF322083.1	CTGTGTGTAGCATTTGCCATTTT	CCCGCACAGGTACATTAAAATAGA
*PcUBA1**	GT229647.1, GT257530.1	TGCAAACCTAGCCCTTCCTC	ACCCATCGATCCCAGACAGA
*PcVHA-A**	GT257942.1, GT258300.1	TTGTACCAAGGCAGGCTCTC	GCTGTAGAAAGAGGAGCTGGT
*PcUBC11**	GT239443.1, GT239093.1	TCCATGCTCTTGCTGTCTCC	GTCCCGCACTGACAATCTCT

Supplementary Table S2. Summary of statistics calculated using the estimated marginal means between modeled groups for hormones measured in secondary phloem and secondary xylem. Estimated marginal means and corresponding statistics determining significant differences between groups were calculated post hoc from generalized linear models for each compound using the emmeans package v1.5.3 (Lenth, 2020). Comparisons found to be significant ($p < 0.05$) are bolded.

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
ACC - between treatments within a timepoint								
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.28	0.08	−4.47	**7.79×10^{-6}**	0.67	0.29	−0.91	3.63×10^{-1}
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.28	0.08	−4.48	**7.43×10^{-6}**	0.65	0.28	−0.99	3.22×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	0.64	0.23	−1.23	2.18×10^{-1}	0.57	0.27	−1.18	2.40×10^{-1}
7 dpw, mock-attacked vs MPB-attacked	1.18	0.43	0.44	6.57×10^{-1}	2.58	1.23	2.00	**4.60×10^{-2}**
ACC - between timepoints for a treatment								
mock-inoculated, 7 dpi vs 14 dpi	1.54	0.35	1.90	5.79×10^{-2}	1.40	0.44	1.08	2.80×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.54	0.35	1.88	5.96×10^{-2}	1.35	0.46	0.90	3.69×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.49	0.12	−2.89	**3.91×10^{-3}**	0.19	0.07	−4.43	**9.53×10^{-6}**
MPB-attacked, 1 dpw vs 7 dpw	0.90	0.22	−0.42	6.76×10^{-1}	0.87	0.32	−0.39	7.00×10^{-1}
conjugated SA - between treatments within a timepoint								
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	2.09	1.43	1.08	2.82×10^{-1}	1.56	1.05	0.66	5.11×10^{-1}
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	1.34	0.92	0.42	6.72×10^{-1}	0.88	0.59	−0.19	8.52×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	3.43	2.86	1.48	1.39×10^{-1}	2.76	2.55	1.10	2.73×10^{-1}
7 dpw, mock-attacked vs MPB-attacked	1.33	1.10	0.34	7.35×10^{-1}	0.90	0.84	−0.11	9.12×10^{-1}

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
conjugated SA - between timepoints for a treatment								
mock-inoculated, 7 dpi vs 14 dpi	0.72	0.37	−0.64	5.24×10^{-1}	1.23	0.58	0.44	6.58×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	0.46	0.23	−1.52	1.28×10^{-1}	0.70	0.33	−0.77	4.43×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	1.45	0.75	0.71	4.76×10^{-1}	2.27	1.28	1.46	1.45×10^{-1}
MPB-attacked, 1 dpw vs 7 dpw	0.56	0.29	−1.12	2.65×10^{-1}	0.74	0.42	−0.53	5.99×10^{-1}
JA - between treatments within a timepoint								
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.35	0.17	−2.13	$\mathbf{3.28 \times 10^{-2}}$	0.44	0.21	−1.71	8.72×10^{-2}
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.16	0.08	−3.68	$\mathbf{2.36 \times 10^{-4}}$	0.33	0.16	−2.29	$\mathbf{2.20 \times 10^{-2}}$
1 dpw, mock-attacked vs MPB-attacked	1.80	1.27	0.84	4.02×10^{-1}	3.74	2.07	2.38	$\mathbf{1.74 \times 10^{-2}}$
7 dpw, mock-attacked vs MPB-attacked	0.21	0.15	−2.24	$\mathbf{2.49 \times 10^{-2}}$	0.58	0.32	−0.99	3.21×10^{-1}
JA - between timepoints for a treatment								
mock-inoculated, 7 dpi vs 14 dpi	1.38	0.49	0.90	3.66×10^{-1}	1.32	0.51	0.71	4.77×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	0.65	0.23	−1.21	2.26×10^{-1}	1.00	0.39	−0.01	9.95×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.50	0.22	−1.56	1.19×10^{-1}	0.47	0.18	−2.03	$\mathbf{4.22 \times 10^{-2}}$
MPB-attacked, 1 dpw vs 7 dpw	0.06	0.03	−6.41	$\mathbf{1.49 \times 10^{-10}}$	0.07	0.03	−7.01	$\mathbf{2.46 \times 10^{-12}}$
JA-Ile - between treatments within a timepoint								
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.13	0.06	−4.63	$\mathbf{3.69 \times 10^{-6}}$	0.48	0.22	−1.59	1.13×10^{-1}
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.15	0.07	−4.29	$\mathbf{1.75 \times 10^{-5}}$	0.23	0.11	−3.18	$\mathbf{1.49 \times 10^{-3}}$
1 dpw, mock-attacked vs MPB-attacked	3.87	3.16	1.66	9.73×10^{-2}	3.75	1.30	3.80	$\mathbf{1.45 \times 10^{-4}}$

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
7 dpw, mock-attacked vs MPB-attacked	0.20	0.14	−2.23	**2.58×10^{-2}**	0.48	0.17	−2.10	**3.54×10^{-2}**
JA-Ile - between timepoints for a treatment								
mock-inoculated, 7 dpi vs 14 dpi	0.72	0.22	−1.10	2.73×10^{-1}	1.20	0.38	0.56	5.78×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	0.84	0.25	−0.60	5.51×10^{-1}	0.57	0.18	−1.76	7.87×10^{-2}
mock-attacked, 1 dpw vs 7 dpw	1.20	0.42	0.52	6.00×10^{-1}	2.14	0.75	2.19	**2.85×10^{-2}**
MPB-attacked, 1 dpw vs 7 dpw	0.06	0.03	−4.93	**8.13×10^{-7}**	0.27	0.10	−3.71	**2.06×10^{-4}**
SA - between treatments within a timepoint								
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	1.64	0.69	1.18	2.38×10^{-1}	1.39	0.61	0.75	4.52×10^{-1}
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.78	0.33	−0.60	5.51×10^{-1}	0.70	0.31	−0.81	4.20×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	1.68	1.13	0.77	4.44×10^{-1}	0.71	0.37	−0.64	5.20×10^{-1}
7 dpw, mock-attacked vs MPB-attacked	1.29	0.87	0.38	7.03×10^{-1}	1.19	0.62	0.34	7.37×10^{-1}
SA - between timepoints for a treatment								
mock-inoculated, 7 dpi vs 14 dpi	1.24	0.39	0.69	4.90×10^{-1}	1.24	0.34	0.78	4.34×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	0.59	0.19	−1.68	9.35×10^{-2}	0.62	0.17	−1.70	8.89×10^{-2}
mock-attacked, 1 dpw vs 7 dpw	1.60	0.61	1.22	2.21×10^{-1}	1.16	0.37	0.47	6.35×10^{-1}
MPB-attacked, 1 dpw vs 7 dpw	1.23	0.47	0.55	5.84×10^{-1}	1.94	0.61	2.09	**3.69×10^{-2}**

Supplementary Table S3. Summary of statistics calculated using the estimated marginal means between modeled groups for phenolic compounds measured in secondary phloem that were found to be significant predictors in a non-metric multidimensional scaling (NMDS) model and that met assumptions of normality and homoscedascity when fit to a generalized linear model. Estimated marginal means and corresponding statistics determining significant differences between groups were calculated post hoc from generalized linear models for each compound using the emmeans package v1.5.3 (Lenth, 2020). Comparisons found to be significant ($p < 0.05$) are bolded.

	ratio	SE	z ratio	*p*
catechin hydrate - between treatments within a timepoint				
7dpi, control vs mock-inoculated	0.61	0.21	−1.45	3.13×10^{-1}
7dpi, control vs *G. clavigera*-inoculated	0.66	0.24	−1.14	4.91×10^{-1}
7dpi, mock-inoculated vs *G. clavigera*-inoculated	1.09	0.40	0.24	9.70×10^{-1}
14dpi, control vs mock-inoculated	0.92	0.31	−0.24	9.70×10^{-1}
14dpi, control vs *G. clavigera*-inoculated	0.76	0.27	−0.78	7.13×10^{-1}
14dpi, mock-inoculated vs *G. clavigera*-inoculated	0.82	0.30	−0.54	8.50×10^{-1}
1dpw, control vs mock-attacked	0.96	0.32	−0.11	9.93×10^{-1}
1dpw, control vs MPB-attacked	0.52	0.16	−2.06	9.89×10^{-2}
1dpw, mock-attacked vs MPB-attacked	0.54	0.17	−1.90	1.38×10^{-1}
7dpw, control vs mock-attacked	0.86	0.28	−0.46	8.92×10^{-1}
7dpw, control vs MPB-attacked	0.47	0.15	−2.45	$\mathbf{3.81 \times 10^{-2}}$
7dpw, mock-attacked vs MPB-attacked	0.54	0.17	−1.93	1.30×10^{-1}
catechin hydrate - between timepoints for a treatment				
control, 7dpi vs 14dpi	0.63	0.09	−3.26	$\mathbf{1.13 \times 10^{-3}}$
mock-inoculated, 7dpi vs 14dpi	0.96	0.12	−0.35	7.26×10^{-1}
G. clavigera-inoculated, 7dpi vs 14dpi	0.72	0.08	−2.94	$\mathbf{3.32 \times 10^{-3}}$
control, 1dpw vs 7dpw	0.77	0.17	−1.23	2.18×10^{-1}
mock-attacked, 1dpw vs 7dpw	0.69	0.15	−1.76	7.78×10^{-2}
MPB-attacked, 1dpw vs 7dpw	0.68	0.16	−1.64	1.02×10^{-1}

	ratio	SE	z ratio	*p*
total phenolics - between treatments within a timepoint				
7dpi, control vs mock-inoculated	0.92	0.16	−0.49	8.77×10^{-1}
7dpi, control vs *G. clavigera*-inoculated	0.82	0.15	−1.05	5.48×10^{-1}
7dpi, mock-inoculated vs *G. clavigera*-inoculated	0.90	0.17	−0.57	8.38×10^{-1}
14dpi, control vs mock-inoculated	1.11	0.20	0.57	8.37×10^{-1}
14dpi, control vs *G. clavigera*-inoculated	0.75	0.14	−1.52	2.80×10^{-1}
14dpi, mock-inoculated vs *G. clavigera*-inoculated	0.68	0.13	−2.00	1.12×10^{-1}
1dpw, control vs mock-attacked	0.85	0.19	−0.75	7.31×10^{-1}
1dpw, control vs MPB-attacked	0.75	0.15	−1.43	3.27×10^{-1}
1dpw, mock-attacked vs MPB-attacked	0.88	0.19	−0.60	8.18×10^{-1}
7dpw, control vs mock-attacked	0.97	0.21	−0.15	9.87×10^{-1}
7dpw, control vs MPB-attacked	0.63	0.13	−2.28	5.88×10^{-2}
7dpw, mock-attacked vs MPB-attacked	0.65	0.14	−2.02	1.07×10^{-1}
total phenolics - between timepoints for a treatment				
control, 7dpi vs 14dpi	0.84	0.06	−2.22	$\mathbf{2.62 \times 10^{-2}}$
mock-inoculated, 7dpi vs 14dpi	1.02	0.07	0.28	7.82×10^{-1}
G. clavigera-inoculated, 7dpi vs 14dpi	0.77	0.05	−4.24	$\mathbf{2.27 \times 10^{-5}}$
control, 1dpw vs 7dpw	0.96	0.10	−0.40	6.92×10^{-1}
mock-attacked, 1dpw vs 7dpw	1.10	0.10	1.01	3.14×10^{-1}
MPB-attacked, 1dpw vs 7dpw	0.81	0.09	−1.85	6.48×10^{-2}

Supplementary Table S4. Summary of statistics calculated using the estimated marginal means between modeled groups for phenolic compounds measured in secondary xylem that were found to be significant predictors in a non-metric multidimensional scaling (NMDS) model and that met assumptions of normality and homoscedascity when fit to a generalized linear model. Estimated marginal means and corresponding statistics determining significant differences between groups were calculated post hoc from generalized linear models for each compound using the emmeans package v1.5.3 (Lenth, 2020). Comparisons found to be significant ($p < 0.05$) are bolded.

	ratio	SE	z ratio	*p*
total phenolics - between treatments within a timepoint				
7dpi, control vs mock-inoculated	0.21	0.07	−4.97	**2.01×10^{-6}**
7dpi, control vs *G. clavigera*-inoculated	0.24	0.08	−4.51	**1.91×10^{-5}**
7dpi, mock-inoculated vs *G. clavigera*-inoculated	1.11	0.36	0.31	9.47×10^{-1}
14dpi, control vs mock-inoculated	0.61	0.18	−1.65	2.26×10^{-1}
14dpi, control vs *G. clavigera*-inoculated	0.24	0.08	−4.45	**2.57×10^{-5}**
14dpi, mock-inoculated vs *G. clavigera*-inoculated	0.40	0.13	−2.80	**1.40×10^{-2}**
1dpw, control vs mock-attacked	0.22	0.08	−4.20	**8.08×10^{-5}**
1dpw, control vs MPB-attacked	0.45	0.16	−2.30	5.51×10^{-2}
1dpw, mock-attacked vs MPB-attacked	1.99	0.70	1.96	1.23×10^{-1}
7dpw, control vs mock-attacked	0.20	0.07	−4.61	**1.20×10^{-5}**
7dpw, control vs MPB-attacked	0.40	0.14	−2.64	**2.23×10^{-2}**
7dpw, mock-attacked vs MPB-attacked	2.01	0.70	2.01	1.11×10^{-1}
total phenolics - between timepoints for a treatment				
control, 7dpi vs 14dpi	0.71	0.13	−1.90	5.71×10^{-2}
mock-inoculated, 7dpi vs 14dpi	2.02	0.31	4.62	**3.92×10^{-6}**
G. clavigera-inoculated, 7dpi vs 14dpi	0.73	0.10	−2.18	**2.89×10^{-2}**
control, 1dpw vs 7dpw	1.25	0.34	0.83	4.09×10^{-1}
mock-attacked, 1dpw vs 7dpw	1.11	0.27	0.43	6.68×10^{-1}
MPB-attacked, 1dpw vs 7dpw	1.12	0.33	0.38	7.02×10^{-1}

Supplementary Table S5. Summary of statistics calculated using the estimated marginal means between modeled groups for gene transcript abundance as determined by quantitative reverse transcription polymerase chain reaction (qRT-PCR) analyses in secondary phloem and secondary xylem. Estimated marginal means and corresponding statistics determining significant differences between groups were calculated post hoc from generalized linear models for each gene using the emmeans package v1.5.3 (Lenth, 2020). Comparisons found to be significant ($p < 0.05$) are bolded.

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
***PcCHS* - between treatments within a timepoint**								
7 dpi, control vs mock-inoculated	0.56	0.08	−4.05	**1.51×10^{-4}**	0.11	0.05	−5.01	**1.60×10^{-6}**
7 dpi, control vs *G. clavigera*-inoculated	0.64	0.09	−3.26	**3.15×10^{-3}**	0.11	0.04	−5.42	**1.82×10^{-7}**
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	1.13	0.16	0.89	6.47×10^{-1}	0.93	0.41	−0.16	9.86×10^{-1}
14 dpi, control vs mock-inoculated	0.82	0.11	−1.46	3.09×10^{-1}	0.12	0.04	−5.78	**2.24×10^{-8}**
14 dpi, control vs *G. clavigera*-inoculated	0.76	0.11	−1.96	1.22×10^{-1}	0.10	0.04	−6.42	**4.11×10^{-10}**
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.93	0.13	−0.48	8.81×10^{-1}	0.80	0.29	−0.62	8.10×10^{-1}
1 dpw, control vs mock-attacked	1.47	0.24	2.33	5.22×10^{-2}	0.65	0.48	−0.58	8.30×10^{-1}
1 dpw, control vs MPB-attacked	0.89	0.15	−0.71	7.58×10^{-1}	0.98	0.70	−0.03	9.99×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	0.61	0.10	−3.09	**5.68×10^{-3}**	1.49	1.10	0.54	8.49×10^{-1}
7 dpw, control vs mock-attacked	1.10	0.18	0.58	8.31×10^{-1}	0.18	0.13	−2.40	**4.38×10^{-2}**
7 dpw, control vs MPB-attacked	0.95	0.15	−0.30	9.52×10^{-1}	0.15	0.11	−2.67	**2.07×10^{-2}**
7 dpw, mock-attacked vs MPB-attacked	0.87	0.14	−0.85	6.72×10^{-1}	0.82	0.60	−0.27	9.60×10^{-1}
***PcCHS* - between timepoints for a treatment**								

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
control, 7 dpi vs 14 dpi	0.93	0.10	−0.64	5.22×10^{-1}	0.49	0.16	−2.14	$\mathbf{3.27 \times 10^{-2}}$
mock-inoculated, 7 dpi vs 14 dpi	1.36	0.15	2.84	$\mathbf{4.46 \times 10^{-3}}$	0.52	0.18	−1.87	6.19×10^{-2}
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.12	0.12	1.07	2.86×10^{-1}	0.45	0.15	−2.41	$\mathbf{1.59 \times 10^{-2}}$
control, 1 dpw vs 7 dpw	0.94	0.11	−0.54	5.86×10^{-1}	0.65	0.26	−1.08	2.81×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.70	0.08	−2.93	$\mathbf{3.34 \times 10^{-3}}$	0.18	0.07	−4.22	$\mathbf{2.44 \times 10^{-5}}$
MPB-attacked, 1 dpw vs 7 dpw	1.00	0.12	0.04	9.66×10^{-1}	0.10	0.04	−6.07	$\mathbf{1.32 \times 10^{-9}}$
***PcDFR1* - between treatments within a timepoint**								
7 dpi, control vs mock-inoculated	0.31	0.06	−6.25	$\mathbf{1.25 \times 10^{-9}}$	0.39	0.14	−2.65	$\mathbf{2.18 \times 10^{-2}}$
7 dpi, control vs *G. clavigera*-inoculated	0.19	0.03	−9.16	$\mathbf{3.56 \times 10^{-14}}$	0.34	0.11	−3.21	$\mathbf{3.82 \times 10^{-3}}$
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.61	0.11	−2.74	$\mathbf{1.68 \times 10^{-2}}$	0.86	0.30	−0.43	9.04×10^{-1}
14 dpi, control vs mock-inoculated	0.39	0.07	−5.19	$\mathbf{6.42 \times 10^{-7}}$	0.30	0.09	−3.91	$\mathbf{2.76 \times 10^{-4}}$
14 dpi, control vs *G. clavigera*-inoculated	0.31	0.06	−6.49	$\mathbf{2.61 \times 10^{-10}}$	0.27	0.08	−4.20	$\mathbf{7.86 \times 10^{-5}}$
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.79	0.15	−1.25	4.25×10^{-1}	0.93	0.29	−0.25	9.66×10^{-1}
1 dpw, control vs mock-attacked	0.59	0.15	−2.07	9.52×10^{-2}	0.72	0.28	−0.83	6.84×10^{-1}
1 dpw, control vs MPB-attacked	0.51	0.13	−2.59	$\mathbf{2.61 \times 10^{-2}}$	1.06	0.41	0.15	9.87×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	0.88	0.22	−0.52	8.61×10^{-1}	1.47	0.58	0.97	5.95×10^{-1}
7 dpw, control vs mock-attacked	0.46	0.12	−3.08	$\mathbf{5.92 \times 10^{-3}}$	0.42	0.16	−2.27	6.00×10^{-2}
7 dpw, control vs MPB-attacked	0.28	0.07	−5.19	$\mathbf{6.18 \times 10^{-7}}$	0.34	0.13	−2.84	$\mathbf{1.26 \times 10^{-2}}$

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
7 dpw, mock-attacked vs MPB-attacked	0.60	0.16	−1.96	1.22×10^{-1}	0.80	0.31	−0.56	8.39×10^{-1}
PcDFR1 **- between timepoints for a treatment**								
control, 7 dpi vs 14 dpi	0.88	0.13	−0.91	3.61×10^{-1}	0.79	0.18	−1.01	3.13×10^{-1}
mock-inoculated, 7 dpi vs 14 dpi	1.09	0.16	0.60	5.49×10^{-1}	0.60	0.14	−2.17	$\mathbf{3.02 \times 10^{-2}}$
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.42	0.20	2.47	$\mathbf{1.34 \times 10^{-2}}$	0.65	0.15	−1.90	5.68×10^{-2}
control, 1 dpw vs 7 dpw	0.93	0.16	−0.41	6.79×10^{-1}	0.93	0.25	−0.26	7.96×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.73	0.12	−1.85	6.48×10^{-2}	0.54	0.15	−2.24	$\mathbf{2.49 \times 10^{-2}}$
MPB-attacked, 1 dpw vs 7 dpw	0.50	0.08	−4.24	$\mathbf{2.19 \times 10^{-5}}$	0.30	0.08	−4.71	$\mathbf{2.46 \times 10^{-6}}$
PcDFR2 **- between treatments within a timepoint**								
7 dpi, control vs mock-inoculated	0.60	0.14	−2.20	7.06×10^{-2}	0.22	0.13	−2.52	$\mathbf{3.16 \times 10^{-2}}$
7 dpi, control vs *G. clavigera*-inoculated	0.50	0.11	−3.07	$\mathbf{6.12 \times 10^{-3}}$	0.28	0.16	−2.21	6.98×10^{-2}
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.83	0.19	−0.79	7.07×10^{-1}	1.25	0.63	0.44	8.97×10^{-1}
14 dpi, control vs mock-inoculated	0.71	0.16	−1.51	2.87×10^{-1}	0.17	0.08	−3.96	$\mathbf{2.23 \times 10^{-4}}$
14 dpi, control vs *G. clavigera*-inoculated	0.58	0.13	−2.40	$\mathbf{4.28 \times 10^{-2}}$	0.11	0.05	−4.93	$\mathbf{2.43 \times 10^{-6}}$
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.82	0.19	−0.85	6.71×10^{-1}	0.65	0.29	−0.97	5.96×10^{-1}
1 dpw, control vs mock-attacked	0.74	0.18	−1.27	4.13×10^{-1}	0.46	0.27	−1.33	3.80×10^{-1}
1 dpw, control vs MPB-attacked	0.45	0.11	−3.33	$\mathbf{2.50 \times 10^{-3}}$	0.28	0.18	−2.01	1.09×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	0.60	0.15	−2.08	9.50×10^{-2}	0.62	0.38	−0.77	7.19×10^{-1}

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
7 dpw, control vs mock-attacked	0.56	0.13	−2.41	**4.18×10^{-2}**	0.56	0.32	−1.01	5.73×10^{-1}
7 dpw, control vs MPB-attacked	0.27	0.06	−5.53	**9.34×10^{-8}**	0.24	0.14	−2.45	**3.79×10^{-2}**
7 dpw, mock-attacked vs MPB-attacked	0.49	0.12	−2.97	**8.34×10^{-3}**	0.43	0.24	−1.55	2.70×10^{-1}
***PcDFR2* - between timepoints for a treatment**								
control, 7 dpi vs 14 dpi	0.96	0.12	−0.31	7.56×10^{-1}	0.89	0.44	−0.23	8.18×10^{-1}
mock-inoculated, 7 dpi vs 14 dpi	1.14	0.14	1.06	2.89×10^{-1}	0.67	0.24	−1.10	2.70×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.12	0.13	0.94	3.48×10^{-1}	0.35	0.12	−3.00	**2.71×10^{-3}**
control, 1 dpw vs 7 dpw	1.02	0.13	0.17	8.64×10^{-1}	0.65	0.26	−1.09	2.74×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.78	0.10	−2.00	**4.54×10^{-2}**	0.79	0.23	−0.81	4.21×10^{-1}
MPB-attacked, 1 dpw vs 7 dpw	0.63	0.08	−3.76	**1.68×10^{-4}**	0.55	0.25	−1.34	1.79×10^{-1}
***PcOMT1* - between treatments within a timepoint**								
7 dpi, control vs mock-inoculated	0.32	0.08	−4.83	**4.07×10^{-6}**	1.66	0.59	1.43	3.23×10^{-1}
7 dpi, control vs *G. clavigera*-inoculated	0.18	0.04	−7.40	**4.43×10^{-13}**	1.04	0.35	0.12	9.92×10^{-1}
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.57	0.13	−2.42	**4.15×10^{-2}**	0.63	0.22	−1.32	3.85×10^{-1}
14 dpi, control vs mock-inoculated	0.29	0.07	−5.42	**1.74×10^{-7}**	2.60	0.81	3.06	**6.21×10^{-3}**
14 dpi, control vs *G. clavigera*-inoculated	0.20	0.05	−7.08	**4.47×10^{-12}**	3.00	0.92	3.56	**1.07×10^{-3}**
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.69	0.16	−1.56	2.63×10^{-1}	1.16	0.36	0.46	8.88×10^{-1}
1 dpw, control vs mock-attacked	0.94	0.27	−0.20	9.78×10^{-1}	1.17	0.56	0.32	9.44×10^{-1}

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
1 dpw, control vs MPB-attacked	0.56	0.16	−2.04	1.04×10^{-1}	0.36	0.17	−2.18	7.49×10^{-2}
1 dpw, mock-attacked vs MPB-attacked	0.60	0.16	−1.88	1.46×10^{-1}	0.31	0.15	−2.43	$\mathbf{3.99 \times 10^{-2}}$
7 dpw, control vs mock-attacked	0.32	0.09	−4.08	$\mathbf{1.35 \times 10^{-4}}$	1.56	0.74	0.95	6.10×10^{-1}
7 dpw, control vs MPB-attacked	0.12	0.03	−7.88	$\mathbf{5.32 \times 10^{-14}}$	1.08	0.51	0.17	9.84×10^{-1}
7 dpw, mock-attacked vs MPB-attacked	0.37	0.10	−3.51	$\mathbf{1.32 \times 10^{-3}}$	0.69	0.33	−0.77	7.23×10^{-1}
***PcOMT1* - between timepoints for a treatment**								
control, 7 dpi vs 14 dpi	1.04	0.16	0.28	7.81×10^{-1}	0.81	0.19	−0.93	3.53×10^{-1}
mock-inoculated, 7 dpi vs 14 dpi	0.93	0.14	−0.50	6.21×10^{-1}	1.26	0.30	0.97	3.30×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.12	0.17	0.76	4.47×10^{-1}	2.32	0.54	3.65	$\mathbf{2.60 \times 10^{-4}}$
control, 1 dpw vs 7 dpw	1.31	0.29	1.23	2.20×10^{-1}	0.82	0.26	−0.62	5.33×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.45	0.10	−3.55	$\mathbf{3.89 \times 10^{-4}}$	1.10	0.35	0.30	7.63×10^{-1}
MPB-attacked, 1 dpw vs 7 dpw	0.28	0.06	−5.90	$\mathbf{3.55 \times 10^{-9}}$	2.49	0.74	3.05	$\mathbf{2.31 \times 10^{-3}}$
***PcOMT2* - between treatments within a timepoint**								
7 dpi, control vs mock-inoculated	0.74	0.22	−1.04	5.51×10^{-1}	0.66	0.33	−0.83	6.84×10^{-1}
7 dpi, control vs *G. clavigera*-inoculated	1.16	0.33	0.50	8.70×10^{-1}	1.56	0.76	0.91	6.33×10^{-1}
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	1.57	0.46	1.56	2.65×10^{-1}	2.38	1.21	1.71	2.03×10^{-1}
14 dpi, control vs mock-inoculated	1.31	0.38	0.92	6.25×10^{-1}	1.29	0.58	0.55	8.44×10^{-1}
14 dpi, control vs *G. clavigera*-inoculated	1.94	0.56	2.30	5.54×10^{-2}	1.24	0.56	0.49	8.78×10^{-1}

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	1.48	0.44	1.33	3.76×10^{-1}	0.97	0.44	−0.08	9.97×10^{-1}
1 dpw, control vs mock-attacked	0.35	0.15	−2.53	$\mathbf{3.10 \times 10^{-2}}$	1.20	0.62	0.35	9.33×10^{-1}
1 dpw, control vs MPB-attacked	0.66	0.27	−1.02	5.65×10^{-1}	1.33	0.66	0.57	8.38×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	1.87	0.76	1.53	2.77×10^{-1}	1.11	0.57	0.20	9.79×10^{-1}
7 dpw, control vs mock-attacked	0.84	0.34	−0.43	9.05×10^{-1}	1.33	0.67	0.57	8.36×10^{-1}
7 dpw, control vs MPB-attacked	0.42	0.17	−2.19	7.28×10^{-2}	1.32	0.66	0.55	8.45×10^{-1}
7 dpw, mock-attacked vs MPB-attacked	0.50	0.21	−1.67	2.16×10^{-1}	0.99	0.50	−0.02	1.00×10^{0}
***PcOMT2* - between timepoints for a treatment**								
control, 7 dpi vs 14 dpi	0.83	0.15	−1.04	2.99×10^{-1}	0.67	0.21	−1.30	1.93×10^{-1}
mock-inoculated, 7 dpi vs 14 dpi	1.47	0.27	2.12	$\mathbf{3.42 \times 10^{-2}}$	1.31	0.41	0.86	3.91×10^{-1}
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.39	0.25	1.82	6.91×10^{-2}	0.53	0.16	−2.04	$\mathbf{4.14 \times 10^{-2}}$
control, 1 dpw vs 7 dpw	1.55	0.45	1.51	1.32×10^{-1}	0.69	0.25	−1.00	3.17×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	3.70	1.08	4.48	$\mathbf{7.62 \times 10^{-6}}$	0.77	0.29	−0.71	4.80×10^{-1}
MPB-attacked, 1 dpw vs 7 dpw	0.99	0.28	−0.05	9.59×10^{-1}	0.69	0.24	−1.06	2.89×10^{-1}
***PcSTS* - between treatments within a timepoint**								
7 dpi, control vs mock-inoculated	0.36	0.13	−2.90	$\mathbf{1.04 \times 10^{-2}}$	0.07	0.04	−4.53	$\mathbf{1.75 \times 10^{-5}}$
7 dpi, control vs *G. clavigera*-inoculated	0.09	0.03	−7.10	$\mathbf{3.84 \times 10^{-12}}$	0.01	0.01	−7.43	$\mathbf{3.36 \times 10^{-13}}$
7 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.24	0.08	−4.10	$\mathbf{1.24 \times 10^{-4}}$	0.22	0.13	−2.58	$\mathbf{2.69 \times 10^{-2}}$

	Phloem				Xylem			
	ratio	**SE**	**z ratio**	***p***	**ratio**	**SE**	**z ratio**	***p***
14 dpi, control vs mock-inoculated	0.31	0.11	−3.39	**1.99×10^{-3}**	0.01	0.00	−9.56	**2.33×10^{-14}**
14 dpi, control vs *G. clavigera*-inoculated	0.10	0.04	−6.59	**1.32×10^{-10}**	0.00	0.00	−11.74	**0.00**
14 dpi, mock-inoculated vs *G. clavigera*-inoculated	0.33	0.12	−3.10	**5.55×10^{-3}**	0.34	0.17	−2.12	8.58×10^{-2}
1 dpw, control vs mock-attacked	0.84	0.42	−0.34	9.37×10^{-1}	0.78	0.59	−0.33	9.42×10^{-1}
1 dpw, control vs MPB-attacked	0.97	0.49	−0.05	9.98×10^{-1}	0.77	0.58	−0.34	9.37×10^{-1}
1 dpw, mock-attacked vs MPB-attacked	1.16	0.57	0.29	9.54×10^{-1}	0.99	0.77	−0.01	1.00×10^{0}
7 dpw, control vs mock-attacked	0.31	0.15	−2.35	**4.90×10^{-2}**	0.01	0.01	−6.15	**2.32×10^{-9}**
7 dpw, control vs MPB-attacked	0.25	0.12	−2.83	**1.28×10^{-2}**	0.05	0.04	−4.03	**1.66×10^{-4}**
7 dpw, mock-attacked vs MPB-attacked	0.81	0.41	−0.41	9.10×10^{-1}	4.79	3.58	2.09	9.09×10^{-2}
***PcSTS* - between timepoints for a treatment**								
control, 7 dpi vs 14 dpi	0.88	0.23	−0.47	6.37×10^{-1}	2.28	1.02	1.85	6.45×10^{-2}
mock-inoculated, 7 dpi vs 14 dpi	0.76	0.20	−1.03	3.04×10^{-1}	0.27	0.13	−2.81	**5.00×10^{-3}**
G. clavigera-inoculated, 7 dpi vs 14 dpi	1.05	0.28	0.20	8.45×10^{-1}	0.43	0.19	−1.87	6.08×10^{-2}
control, 1 dpw vs 7 dpw	1.12	0.36	0.35	7.25×10^{-1}	0.86	0.37	−0.35	7.23×10^{-1}
mock-attacked, 1 dpw vs 7 dpw	0.42	0.14	−2.66	**7.80×10^{-3}**	0.01	0.01	−10.13	**4.25×10^{-24}**
MPB-attacked, 1 dpw vs 7 dpw	0.29	0.09	−3.92	**8.76×10^{-5}**	0.06	0.02	−6.54	**6.27×10^{-11}**