

Supplementary material

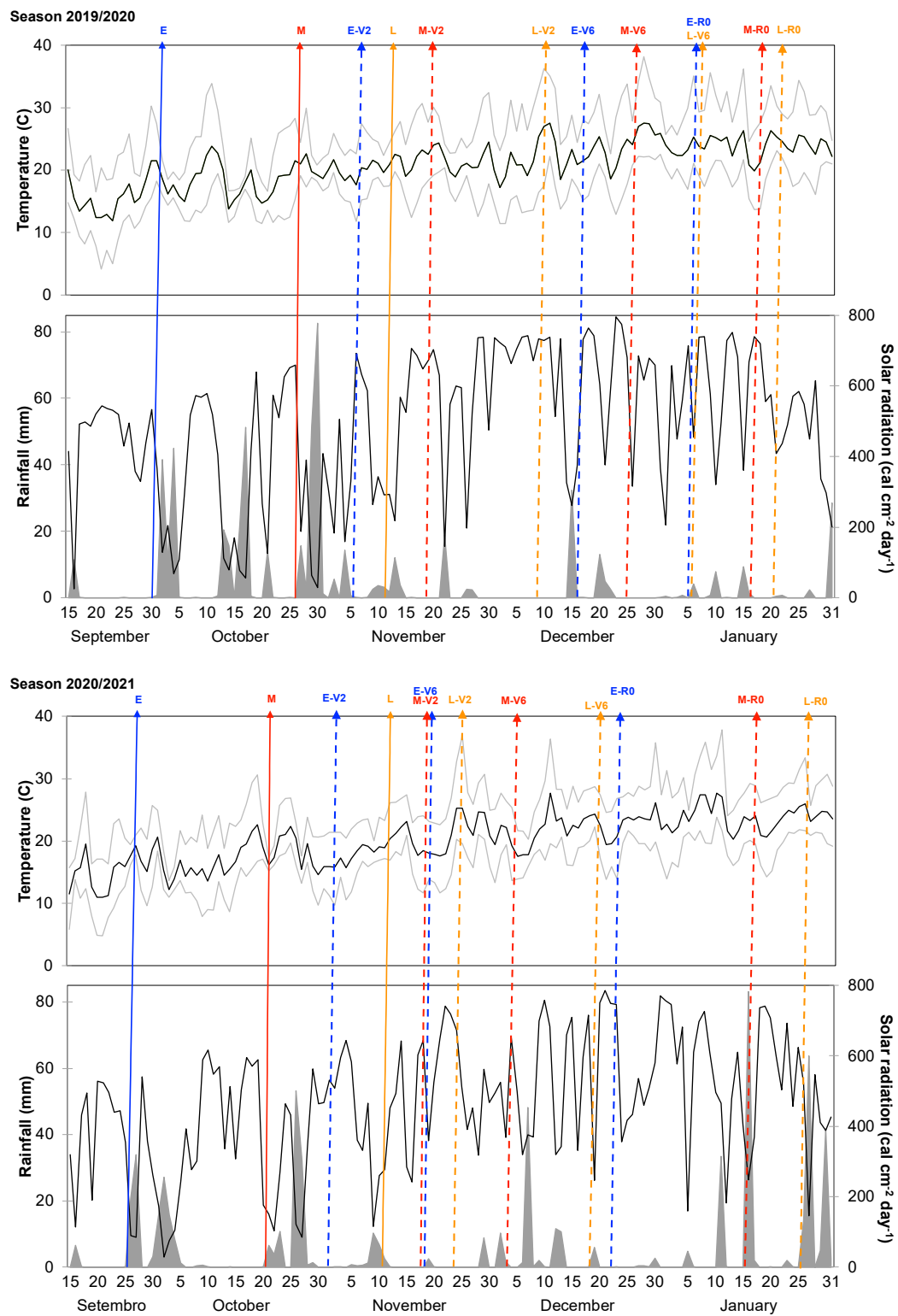


Figure S1. Daily mean, maximum and minimum air temperature, rainfall (gray shading), and solar radiation throughout the experiment. The continuous line represents planting date and discontinuous line represents spraying dates. Planting time abbreviations E: Early planting time (blue), M: Medium planting time (red), and L: Late planting time (orange). Spraying time abbreviations V₂: collar formation on leaf two on the main stem; V₆: collar formation on leaf six on the main stem, and R₀: Panicle development has initiated. (Source: Embrapa Clima Temperado weather station <https://www.embrapa.br/clima-temperado> Access on 10 December 2021).

Table S1. Temperature regime “Factor B” of growth chamber experiment.

Temperature Treatment	Initial Growing (until 3 Leaves) ¹	After Application (for 24 hours) ¹	Experimental to the End (28DAA) ^{1,2}
T1 (all medium)	28/25 °C	28/25 °C	28/25 °C
T2 (med-low-med)	28/25 °C	18/15 °C	28/25 °C
T3 (high-low-med)	38/36 °C	18/15 °C	28/25 °C
T4 (med-high-high)	28/25 °C	38/36 °C	38/36 °C
T5 (med-high-med)	28/25 °C	38/36 °C	28/25 °C
T6 (med-high-low)	28/25 °C	38/36 °C	18/15 °C

¹Temperature day/night. ²DAA, days after application.

Table S2. Oligonucleotides used in this study for RT-qPCR assay.

Gene	ID		Oligonucleotide - (5'-3')	Reference
Cytochrome P450 CYP71A21	<i>OsCYP71A21</i>	Foward	TGTGACAATGATCTTCTAC- GAGGT	Hirose et al. (2007) [1]
		Reverse	TCCATCTCTTTGTATGTTTTCCAA	
Wall-associated kinase like 21.2	<i>OsWAKL21.2</i>	Foward	GCCACTTTCCCGCTAAGAAGAG	Malukani et al. (2019) [2]
		Reverse	CGCCAAGACACCTCCAACATG	
Glutathione S-Transferase	<i>OsGSTL3</i>	Foward	CAAGATGAAGCAGGCAGAG	Zhang et al. (2014) [3]
18S ribosomal RNA	<i>Os18S</i>	Reverse	GCACACCAACACCAACTT	Jain et al. (2006) [4]
		Foward	CTACGTCCCTGCCCTTTGTACA	
Elongation Factor 1- α	<i>OsEF1α</i>	Reverse	ACACTTCACCGGACCATTCAA	Jain et al. (2006) [4]
		Foward	TTTCACTCTTGGTGTGAAGCAGAT	
Ubiquitin 5	<i>OsUBQ5</i>	Reverse	GACTTCCTTCACGATTCATCG- TAA	Jain et al. (2006)[4]
		Foward	ACCACTTCGACCGCCACTACT	
		Reverse	ACGCCTAAGCCTGCTGGTT	

Table S3. Yield components and analysis of deviance type II Wald chi-square test of rice as affected by planting time (two seasons 2019/2020; 30/September, 25/October and 11/November; and 2020/2021; and 25/September 20/October 10/November), spraying time (V₂, V₆, and R₀) and florypyrauxifen-benzyl rates (0, 30 and 60 g ai ha⁻¹).

Treatments	Tiller Number	Number of Grains per Panicle ¹	1000 Grain Mass (g)	Unfilled Grains Panicle ₁	Grain Yield (kg ha ⁻¹)	Spikelet Ste- rility (%)
V ₂ x 0	4.7 ^{ns}	106.0 ^{ns}	26.5 ^{ns}	11.8 ^{ns}	8635.0 ^{ns}	10.9 ^{ns}
V ₂ x 30	5.7	104.1	26.2	12.5	8220.0	11.3
V ₂ x 60	5.0	110.8	26.2	13.3	8582.0	12.3
V ₆ x 0	5.0	103.3	26.0	12.4	8406.0	11.4
V ₆ x 30	5.7	106.5	26.5	12.1	8277.0	11.4
V ₆ x 60	5.7	103.3	26.7	10.4	8227.0	9.7
R ₀ x 0	5.9	102.8	26.2	11.3	8356.0	10.4
R ₀ x 30	4.8	106.5	26.4	12.0	8746.0	11.1
R ₀ x 60	5.3	104.9	26.4	11.3	8145.0	10.8
Factor	Pr(>Chisq) ¹					
Block	0.1800	0.1458	0.1254	0.1499	0.0452	0.1345
Planting time (PT)	0.3134	0.2185	0.2549	0.5756	0.2518	0.3517
Spraying time (ST)	0.5818	0.6454	0.8780	0.4770	0.7302	0.5597
Rate	0.8522	0.7281	0.6305	0.8324	0.7989	0.8738
PT x ST	0.5238	0.6427	0.5596	0.3530	0.2946	0.3639
PT x Rate	0.1067	0.2724	0.3856	0.8304	0.5863	0.8701
ST x Rate	0.1230	0.6984	0.2879	0.6109	0.4621	0.5237
PT x ST x Rate	0.7983	0.6513	0.5344	0.9932	0.7485	0.9852

^{ns}: non-significant. ¹ Analysis of deviance type II Wald chi-square test.

Table S4. Parameters estimate of the dose response curve of rice plant injury evaluated at three, seven, 14, 21 and 28 days after florypyrauxifen-benzyl treatment as affected by P450 inhibitors applied one hour before for malathion and Piperonyl butoxide, and at seed treatment for dietholate.

Treatments	B ²	SE ³	Rice Plant In- jury (%)		ED ₅₀ ⁵	CI 95%	Inhibition Ratio (%) ⁶	<i>p</i> -Value ⁷
			D ⁴	SE				
3 DAA ¹								
Check without inhibitor	-1.1	(0.8)	38.8	(30.0)	285.2	(0-651.1)	0.0	
Malathion	-3.8	(0.9)	40.7	(1.7)	111.4	(105.9-105.9)	60.9	0.238
Dietholate fb PBO ⁸	-1.9	(0.5)	49.4	(3.1)	64.4	(56.9-71.8)	77.4	0.556
7 DAA								
Check without inhibitor	-2.0	(1.2)	64.5	(9.4)	119.6	(89.7-149.6)	0.0	
Malathion	-4.4	(0.5)	81.9	(1.6)	109.5	(107.3-111.8)	8.4	0.684
Dietholate fb PBO	-4.9	(1.1)	84.5	(2.3)	82.6	(80.3-85.0)	30.9	0.172
14 DAA								
Check without inhibitor	-1.2	(0.4)	83.5	(24.4)	252.0	(87.8-416.1)	0.0	
Malathion	-2.8	(0.3)	88.8	(2.3)	134.2	(128.5-140.0)	46.7	0.079
Dietholate fb PBO	-4.3	(0.8)	87.3	(2.3)	88.3	(86.0-90.7)	64.9	0.189
21 DAA								
Check without inhibitor	-4.7	(2.0)	56.4	(3.2)	116.5	(108.2-124.9)	0.0	
Malathion	-2.5	(0.3)	87.9	(2.6)	148.2	(140.4-155.9)	0.0	0.051
Dietholate fb PBO	-3.5	(0.8)	88.5	(2.5)	88.2	(85.9-91.0)	24.3	0.000
28 DAA								
Check without inhibitor	-1.6	(0.5)	80.9	(8.5)	139.4	(110.7-168.1)	0.0	
Malathion	-2.8	(0.3)	91.6	(2.2)	120.4	(115.9-124.8)	13.6	0.461
Dietholate fb PBO	-2.3	(0.4)	92.4	(3.0)	84.6	(80.7-88.4)	39.3	0.062

¹ Abbreviation: DAA, days after application. ² Slope around ED₅₀. ³ SE: stand error. ⁴ Upper limit for all plants. ⁵ Doses of florypyrauxifen-benzyl (g a.i. ha⁻¹) causes 50% of crop injury. ⁶ (ED₅₀ check without inhibitor – ED₅₀ inhibition treatment) / ED₅₀ check without inhibitor *100. ⁷ Florypyrauxifen-benzyl vs. inhibition treatment fb florypyrauxifen-benzyl on rice crop injury t-statics comparison of ED₅₀. *p-value* > 0.05 means non-significant difference between treatments. ⁸ Piperonyl butoxide.

Table S5. Best Linear Unbiased Predictor BLUP's of runs for rice injury in the growth chamber experiment.

Run	Conditional Variances				
	3DAA ¹	7DAA	14DAA	21DAA	28DAA
2019	-2.00	-0.49	0.00	0.00	0.98
2020	2.00	0.49	0.00	0.00	-0.98

¹ DDA, days after application.

References

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