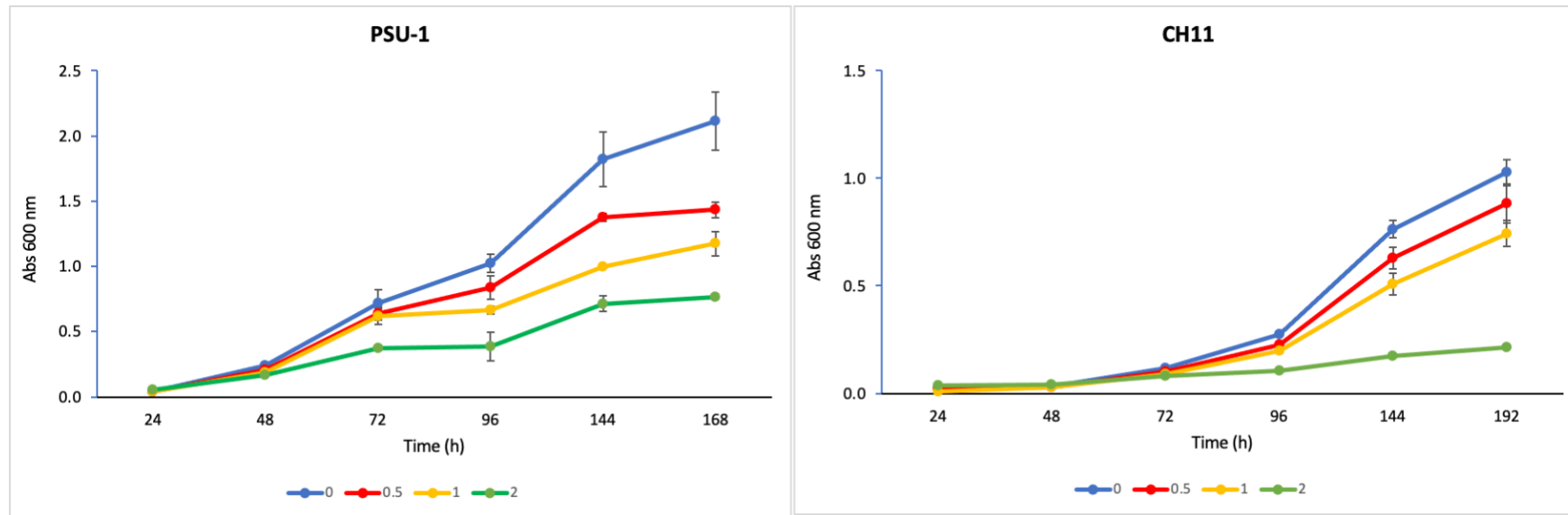


## Supplemental Material

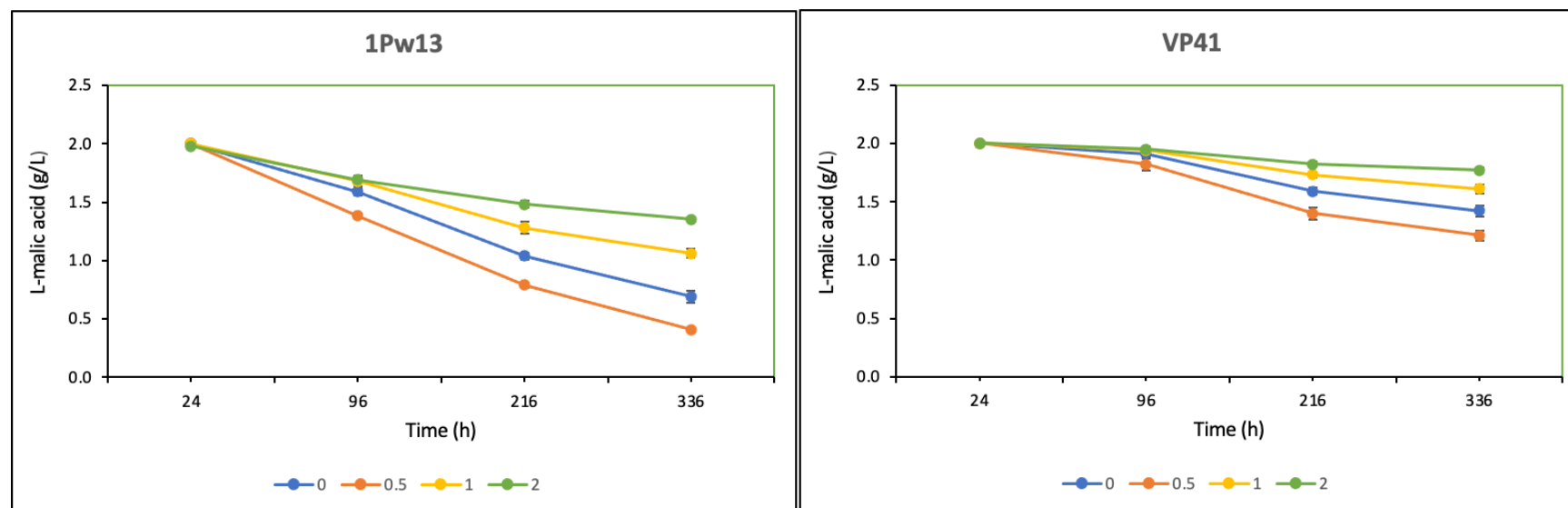
**TABLE S1.** L-malic acid consumption rate (mg/L·h) by *O. oeni* strains CH11 and PSU-1 in WLM with 12% (v/v) ethanol at pH 3.5 and 4.0 at different proportions of L-malic and succinic acids. The values are the means and SD of triplicates.

pH	L-Malic (g/L)	CH11				PSU-1			
		Succinic acid (g/L)							
		0	0.5	1.0	2.0	0	0.5	1.0	2.0
3.5	0.5	12.19 ± 1.21 <sup>a</sup>	8.71 ± 0.94 <sup>ab</sup>	6.43 ± 0.94 <sup>b</sup>	4.96 ± 0.94 <sup>b</sup>	13.94 ± 1.07 <sup>a</sup>	13.80 ± 0.80 <sup>a</sup>	6.97 ± 0.80 <sup>b</sup>	7.77 ± 0.80 <sup>b</sup>
	1.0	11.79 ± 1.61 <sup>a</sup>	14.61 ± 1.34 <sup>a</sup>	11.39 ± 1.34 <sup>a</sup>	4.56 ± 0.13 <sup>b</sup>	15.54 ± 1.61 <sup>a</sup>	12.19 ± 1.34 <sup>ab</sup>	8.31 ± 1.34 <sup>b</sup>	10.99 ± 1.34 <sup>ab</sup>
	2.0	19.56 ± 2.81 <sup>a</sup>	26.13 ± 2.28 <sup>a</sup>	24.52 ± 2.28 <sup>a</sup>	19.7 ± 2.28 <sup>a</sup>	22.65 ± 3.48 <sup>a</sup>	27.60 ± 2.81 <sup>a</sup>	18.89 ± 2.81 <sup>a</sup>	21.17 ± 2.81 <sup>a</sup>
	3.0	18.63 ± 2.95 <sup>a</sup>	25.73 ± 2.41 <sup>a</sup>	16.88 ± 2.41 <sup>a</sup>	23.05 ± 2.41 <sup>a</sup>	18.09 ± 1.07 <sup>b</sup>	21.31 ± 0.80 <sup>ab</sup>	12.19 ± 0.80 <sup>c</sup>	24.52 ± 0.80 <sup>a</sup>
4.0	0.5	11.66 ± 1.74 <sup>a</sup>	13.94 ± 1.47 <sup>a</sup>	11.26 ± 1.47 <sup>ab</sup>	6.03 ± 1.47 <sup>b</sup>	21.31 ± 1.88 <sup>a</sup>	16.62 ± 1.47 <sup>ab</sup>	12.86 ± 1.47 <sup>b</sup>	9.65 ± 1.47 <sup>b</sup>
	1.0	12.73 ± 0.94 <sup>b</sup>	18.63 ± 0.80 <sup>a</sup>	18.89 ± 0.80 <sup>a</sup>	8.31 ± 0.80 <sup>c</sup>	17.69 ± 1.88 <sup>ab</sup>	18.22 ± 1.47 <sup>ab</sup>	20.77 ± 1.47 <sup>a</sup>	13.53 ± 1.47 <sup>b</sup>
	2.0	15.01 ± 0.94 <sup>bc</sup>	21.44 ± 0.80 <sup>a</sup>	17.69 ± 0.80 <sup>ab</sup>	12.19 ± 0.80 <sup>c</sup>	21.44 ± 0.94 <sup>b</sup>	23.72 ± 0.80 <sup>ab</sup>	24.79 ± 0.80 <sup>ab</sup>	26.53 ± 0.80 <sup>a</sup>
	3.0	22.51 ± 1.21 <sup>a</sup>	26.00 ± 0.94 <sup>a</sup>	19.03 ± 0.94 <sup>b</sup>	20.37 ± 0.94 <sup>b</sup>	25.59 ± 1.61 <sup>b</sup>	25.59 ± 1.34 <sup>b</sup>	39.26 ± 1.34 <sup>a</sup>	37.79 ± 1.34 <sup>a</sup>

<sup>a-c</sup> Values for different succinic acid concentration at each L-malic acid one for the same pH and strain are significantly different at  $p \leq 0.05$  according to Tukey test.



**FIGURE S1.** Influence of succinic acid concentration (0, 0.5, 1 and 2 g/L) on growth of *O. oeni* strains PSU-1 and CH11 in MRS broth at pH 5.0. The values are the means of triplicates and the error bars represent the SD values.



**FIGURE S2.** L-malic consumption in WLM with 12 % ethanol (v/v) at pH 3.5 by *O. oeni* strains 1Pw13 and VP41, in the presence of different concentrations of succinic acid: 0 g/L (control, blue), 0.5 g/L (orange), 1 g/L (yellow), and 2 g/L (green). The values are the means of triplicates and the error bars represent the SD values.