

**Supplementary Table 9A:**

	Dependent Variable:
	Abundance
	pH
<b>Constant</b>	3.3239 t = 101.4124 p = 0.0000***
<b>D_gluconic</b>	-0.1651 t = -9.3979 p = 0.0000***
<b>Observations</b>	32
<b>R<sup>2</sup></b>	0.7464
<b>Adjusted R<sup>2</sup></b>	0.7380
<b>Residual Std. Error (df = 25)</b>	0.0937 (df = 30)
<b>F Statistic (df = 6; 25)</b>	<b>88.3196*** (df = 1; 30)</b>
<b>Note: *p&lt;0.1; **p&lt;0.05; ***p&lt;0.01</b>	

**Model:**

```
lmer_k_pHvsGA <- lm(pH ~ D_gluconic1, data = lmer_model_Data)
```

**Supplementary Table 9B:**

	Dependent Variable:
	Abundance
	<i>Saccharomyces</i>
<b>Constant</b>	0.65 t = 0.67 p = 0.5
<b>pH</b>	-0.069 t = -0.218 p = 0.83
<b>Glucose</b>	-0.036 t = -2.14 p = 0.04**
<b>Sucrose</b>	-0.0104 t = -1.24 p = 0.227
<b>Acetic_acid</b>	-0.0845 t = -2.0192 p = 0.0544*
<b>D_gluconic</b>	0.0887 t = 1.2209 p = 0.2336
<b>Succinic acid</b>	1.7153 t = 1.1801 p = 0.2491
<b>Observations</b>	32
<b>R<sup>2</sup></b>	0.40
<b>Adjusted R<sup>2</sup></b>	0.25
<b>Residual Std. Error (df = 25)</b>	0.12
<b>F Statistic (df = 6; 25)</b>	<b>2.7215**</b>
<b>Note: *p&lt;0.1; **p&lt;0.05; ***p&lt;0.01</b>	

**Model:**

```
lmer_sacc <- lm(Abundance (Saccharomyces) ~ pH + glucose1 + sucrose1 + Acetic_acid1 +
D_gluconic1 + Succinic_acid1, data = Mixed_Data_sac)
```

**Supplementary Table 9C:**

	Dependent Variable:
	Abundance
	<i>Saccharomyces</i>
<b>Constant</b>	0.84 t = 1.61 p = 0.15
<b>Sucrose</b>	0.002 t = 0.13 p = 0.90
<b>Fructose1</b>	0.12 t = 0.47 p = 0.65
<b>Glucose1</b>	-0.14 t = -0.54 p = 0.61
<b>D_gluconic acid</b>	1.77 t = 1.58 p = 0.16
<b>Succinic_acid</b>	-3.44 t = -1.11 p = 0.30
<b>Observations</b>	14
<b>R<sup>2</sup></b>	0.52
<b>Adjusted R<sup>2</sup></b>	0.21
<b>Residual Std. Error</b>	0.18 (df = 8)
<b>F Statistic</b>	1.71 (df = 5; 8)

Note: Overall model showed no statistical significance (p = 0.44) \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Model:**

```
sacc_lm <- lm(Abundance ~ sucrose1+Fructose1+glucose1+D_gluconic1+ Succinic_acid1, data =
saccharo_Data)
```