



Supplementary

Improving phenolic total content and monoterpene in *Mentha x piperita* by using salicylic acid or methyl jasmonate combined with rhizobacteria inoculation

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Supplementary Table S1. Effects of inoculation with PGPR strains and of the external application of SA on TPC, PAL activity, pulegone and menthol content of *M. x piperita* plants. Values are mean \pm standard error (SE).

| Treatments | TPC ($\mu\text{g/g fw}$) | PAL activity ($\mu\text{g Trans-Cinnamic Acid/Min} \times \text{mg Protein}$) | Pulegone ($\mu\text{g/g fw}$) | Menthol ($\mu\text{g/g fw}$) |
|------------|-------------------------------|------------------------------------------------------------------------------------|------------------------------------|-----------------------------------|
| Control | 209.84 \pm 13.20 | 4.62 \pm 0.30 | 3.74 \pm 0.16 | 0.20 \pm 0.02 |
| G | 333.51 \pm 32.84 | 13.84 \pm 2.21 | 13.90 \pm 0.71 | 1.29 \pm 0.10 |
| S | 329.62 \pm 27.73 | 16.84 \pm 2.38 | 10.75 \pm 0.83 | 1.22 \pm 0.10 |
| W | 347.98 \pm 22.38 | 11.30 \pm 2.30 | 9.71 \pm 0.42 | 0.99 \pm 0.28 |
| Control SA | 254.03 \pm 24.95 | 4.63 \pm 0.30 | 4.27 \pm 0.27 | 0.19 \pm 0.02 |
| 1 mM SA | 451.60 \pm 29.96 | 51.79 \pm 5.89 | 10.78 \pm 1.44 | 1.36 \pm 0.13 |
| 2 mM SA | 443.06 \pm 48.55 | 58.38 \pm 3.92 | 8.12 \pm 1.23 | 1.48 \pm 0.21 |
| 1 mM G | 458.13 \pm 15.21 | 61.49 \pm 10.61 | 11.11 \pm 1.82 | 1.63 \pm 0.15 |
| 1 mM S | 419.43 \pm 8.98 | 58.13 \pm 9.22 | 12.05 \pm 1.51 | 1.40 \pm 0.20 |
| 1 mM W | 446.32 \pm 14.42 | 81.63 \pm 13.16 | 10.90 \pm 1.56 | 1.54 \pm 0.26 |
| 2 mM G | 672.22 \pm 7.84 | 121.36 \pm 15.99 | 6.56 \pm 0.82 | 1.81 \pm 0.10 |
| 2 mM S | 461.65 \pm 39.77 | 99.88 \pm 10.54 | 8.63 \pm 1.52 | 1.70 \pm 0.55 |
| 2 mM W | 397.95 \pm 16.33 | 69.96 \pm 26.38 | 9.36 \pm 1.45 | 1.75 \pm 0.41 |

Supplementary Table S2. Effects of inoculation with PGPR strains and of the external application of MeJA on TPC, PAL activity, pulegone and menthol content of *M. x piperita* plants. Values are mean \pm standard error (SE).

| Treatments | TPC ($\mu\text{g/g fw}$) | PAL activity ($\mu\text{g trans-cinnamic acid min-1 mg-1 protein}$) | Pulegone ($\mu\text{g/g fw}$) | Menthol ($\mu\text{g/g fw}$) |
|--------------|-------------------------------|--------------------------------------------------------------------------|------------------------------------|-----------------------------------|
| Control MeJA | 192.43 \pm 16.52 | 4.60 \pm 0.28 | 3.99 \pm 0.28 | 0.23 \pm 0.07 |
| 1mM | 320.21 \pm 13.05 | 90.54 \pm 10.07 | 10.53 \pm 0.99 | 0.75 \pm 0.18 |
| 2mM | 440.41 \pm 22.72 | 142.70 \pm 25.97 | 8.94 \pm 1.11 | 0.69 \pm 0.15 |
| 4mM | 473.42 \pm 53.64 | 280.98 \pm 25.22 | 16.61 \pm 1.91 | 1.56 \pm 0.14 |
| 1mM + G | 321.30 \pm 11.24 | 139.44 \pm 14.54 | 5.85 \pm 0.40 | 0.42 \pm 0.06 |
| 1mM + S | 304.73 \pm 12.06 | 134.93 \pm 5.75 | 9.67 \pm 0.53 | 0.47 \pm 0.17 |
| 1mM + W | 316.45 \pm 24.25 | 115.45 \pm 22.93 | 9.27 \pm 0.89 | 0.78 \pm 0.11 |
| 2mM + G | 401.43 \pm 18.72 | 192.39 \pm 13.98 | 22.55 \pm 2.06 | 1.76 \pm 0.32 |
| 2mM + S | 379.10 \pm 16.73 | 176.66 \pm 37.48 | 30.12 \pm 1.32 | 2.31 \pm 0.37 |
| 2mM + W | 392.65 \pm 49.40 | 165.60 \pm 40.41 | 35.89 \pm 1.18 | 2.36 \pm 0.47 |
| 4mM + G | 613.11 \pm 25.30 | 301.73 \pm 61.09 | 9.71 \pm 0.82 | 0.61 \pm 0.13 |
| 4mM + S | 563.22 \pm 17.49 | 282.95 \pm 39.37 | 8.06 \pm 0.43 | 0.58 \pm 0.09 |
| 4mM + W | 481.25 \pm 21.30 | 276.18 \pm 25.45 | 10.30 \pm 0.88 | 0.76 \pm 0.02 |