

Additional file 2: Relative content of primary metabolites obtained from fruit pulp GC-MS analysis and (\log_{10}) fold change in the autopolyploid lines. Mass spectral searching utilized the algorithm incorporated in the Xcalibur® data system and finally normalized by the internal standard ribitol. MP = main product, BP = by product. Asterisks represent significant changes in metabolite content ($P < 0.01$) according to ANOVA. Fold change represents the (\log_{10}) change in the relative content of each metabolite between the autopolyploid lines and their respective control lines

| | | 2n | | 4n | | Significance | (\log_{10}) 4n fold change | 3n | | 6n | | Significance | (\log_{10}) 6n fold change |
|-----------------------|---------------------------|---------|----------|---------|----------|--------------|------------------------------|---------|----------|---------|----------|--------------|------------------------------|
| | Metabolites | Average | \pm SE | Average | \pm SE | | | Average | \pm SE | Average | \pm SE | | |
| Sugars | Glucose MP | 3601.49 | 188.77 | 3575.94 | 383.46 | 0.00 | 27951.79 | 1519.40 | 14429.41 | 3388.09 | * | -0.29 | |
| | Fructose MP | 1281.93 | 78.08 | 1180.14 | 166.83 | 0.00 | 22151.62 | 1260.36 | 12547.01 | 2712.50 | * | -0.25 | |
| | Fructose BP | 776.89 | 47.46 | 719.29 | 99.92 | 0.00 | 14795.77 | 884.84 | 8230.16 | 2006.52 | * | -0.25 | |
| | <i>myo</i> -Inositol | 621.10 | 37.09 | 582.53 | 61.82 | 0.00 | 19140.14 | 975.76 | 18915.80 | 1580.29 | | -0.01 | |
| | Glucose BP | 492.65 | 26.65 | 453.92 | 53.56 | -0.01 | 6323.09 | 444.76 | 2688.23 | 799.67 | * | -0.37 | |
| | Glucopyranose | 12.76 | 0.59 | 11.17 | 1.32 | -0.03 | 126.35 | 7.47 | 60.48 | 14.57 | * | -0.32 | |
| | Sucrose | 9.03 | 0.86 | 8.42 | 1.42 | 0.00 | 112.51 | 16.08 | 83.07 | 8.84 | | -0.13 | |
| | Arabinose MP | 1.78 | 0.18 | 1.68 | 0.21 | 0.02 | 4.75 | 0.55 | 2.86 | 0.67 | | -0.22 | |
| | Arabinose BP | 1.09 | 0.08 | 0.99 | 0.09 | -0.01 | 1.30 | 0.20 | 1.01 | 0.28 | | -0.11 | |
| | Galacturonate | 0.99 | 0.06 | 0.93 | 0.08 | -0.01 | 1.85 | 0.16 | 1.19 | 0.51 | | -0.19 | |
| | Threonate | 0.86 | 0.08 | 0.70 | 0.05 | -0.07 | 6.94 | 0.45 | 3.63 | 0.46 | * | -0.28 | |
| Amino acids | Alanine | 0.03 | 0.00 | 0.03 | 0.00 | 0.07 | 0.07 | 0.02 | 0.13 | 0.06 | | 0.26 | |
| | Proline | 3.39 | 0.59 | 3.14 | 0.71 | -0.01 | 128.40 | 28.06 | 429.05 | 80.07 | * | 0.52 | |
| | Pyroglutamate | 1.28 | 0.09 | 1.24 | 0.15 | 0.01 | 21.96 | 1.80 | 70.66 | 9.26 | * | 0.51 | |
| | Aspartate | 0.38 | 0.03 | 0.34 | 0.05 | -0.02 | 3.95 | 0.12 | 6.93 | 0.23 | * | 0.24 | |
| | Valine | 0.12 | 0.02 | 0.16 | 0.03 | 0.16 | 0.98 | 0.04 | 2.99 | 0.05 | * | 0.48 | |
| | Tryptophan | 1.37 | 0.05 | 1.31 | 0.03 | 0.02 | 1.40 | 0.05 | 4.92 | 0.10 | * | 0.55 | |
| | Tyrosine | 0.08 | 0.02 | 0.10 | 0.02 | 0.13 | 0.08 | 0.00 | 0.11 | 0.00 | * | 0.15 | |
| | Serine | 0.31 | 0.01 | 0.30 | 0.01 | 0.02 | 1.16 | 0.19 | 1.90 | 0.25 | | 0.21 | |
| TCA cycle | Malate | 67.02 | 4.63 | 76.32 | 8.47 | 0.08 | 47.75 | 3.68 | 272.67 | 43.84 | * | 0.76 | |
| | Fumarate | 5.61 | 0.58 | 6.03 | 0.88 | 0.07 | 1.10 | 0.13 | 2.50 | 0.43 | * | 0.36 | |
| | Citrate | 3.39 | 0.32 | 4.40 | 0.66 | 0.15 | 706.47 | 70.47 | 2733.99 | 384.40 | * | 0.59 | |
| | <i>cis</i> -Aconitate | 0.11 | 0.01 | 0.12 | 0.02 | 0.11 | 2.32 | 0.14 | 7.00 | 0.89 | * | 0.48 | |
| | Succinate | 0.21 | 0.01 | 0.19 | 0.01 | 0.00 | 0.08 | 0.00 | 0.15 | 0.04 | * | 0.30 | |
| Organic acids | Maleic acid | 25.01 | 1.26 | 26.30 | 2.20 | 0.05 | 44.66 | 2.21 | 86.70 | 13.57 | * | 0.29 | |
| | Phosphoric acid | 9.81 | 1.31 | 9.23 | 1.48 | -0.01 | 88.44 | 8.19 | 116.97 | 13.70 | | 0.12 | |
| | Gluconic acid | 1.05 | 0.08 | 1.07 | 0.11 | 0.04 | 1.32 | 0.08 | 5.65 | 1.71 | * | 0.63 | |
| | Itaconic acid | 0.17 | 0.03 | 0.16 | 0.02 | -0.01 | 0.68 | 0.06 | 1.38 | 0.14 | * | 0.31 | |
| | Lactic acid | 0.16 | 0.01 | 0.19 | 0.03 | 0.11 | 0.89 | 0.07 | 1.74 | 0.25 | * | 0.29 | |
| | Nicotinic acid | 0.10 | 0.00 | 0.12 | 0.01 | 0.07 | 1.05 | 0.04 | 1.41 | 0.13 | * | 0.13 | |
| | Caffeic acid | 0.01 | 0.00 | 0.01 | 0.00 | 0.06 | 0.38 | 0.02 | 0.44 | 0.09 | | 0.06 | |
| Saturated fatty acids | Nonanoic acid (C9:0) | 0.29 | 0.03 | 0.25 | 0.03 | 0.02 | 1.03 | 0.04 | 1.30 | 0.10 | | 0.08 | |
| | Decanoic acid (C10:0) | 0.04 | 0.00 | 0.03 | 0.00 | -0.03 | 0.21 | 0.02 | 0.20 | 0.03 | | 0.10 | |
| | Hexadecanoic acid (C16:0) | 0.50 | 0.02 | 0.50 | 0.03 | 0.04 | 2.92 | 0.10 | 3.66 | 0.48 | | 0.10 | |
| | Octadecanoic acid (C18:0) | 1.23 | 0.04 | 1.18 | 0.05 | -0.02 | 4.64 | 0.23 | 5.56 | 0.48 | | 0.00 | |