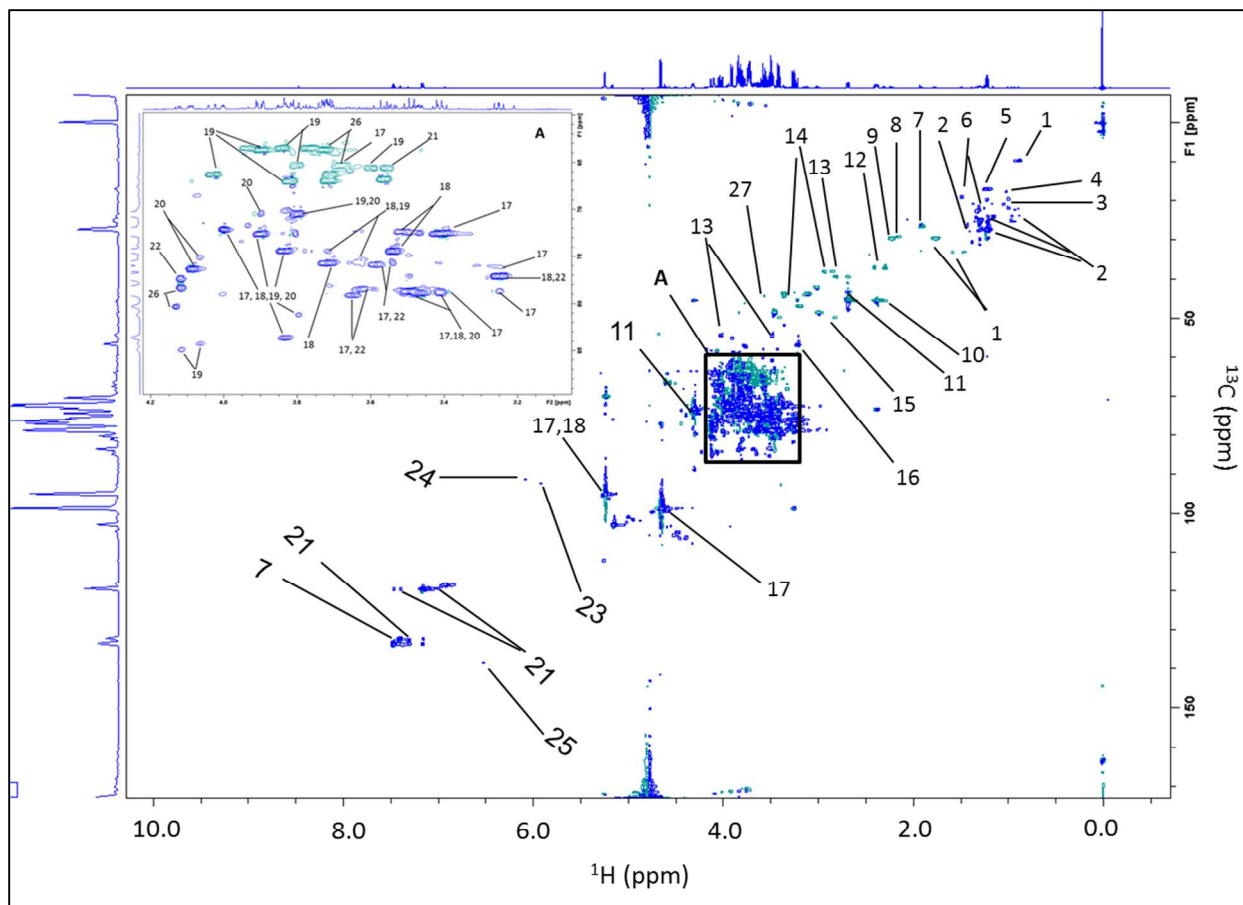**Supplemental Figure 1.** A representative of 1D ^{1}H-NMR watermelon spectrum. Both PM resistant and susceptible rootstock and scion spectra are qualitatively identical.
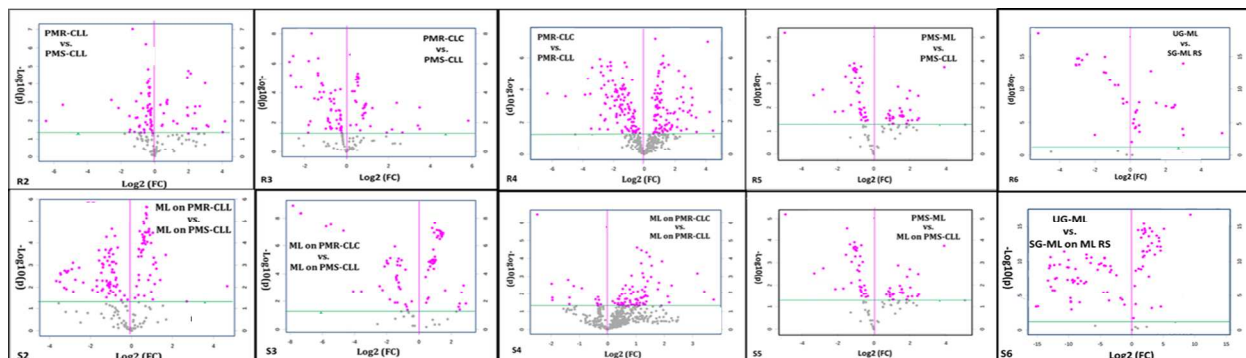
Supplemental Figure 2. The corresponding 2D ^{1}H-^{13}C NMR watermelon spectrum. Each number indicates a metabolite found in the 1D ^{1}H-NMR spectrum (Supplemental Figure 1). The ^{1}H and ^{13}C chemical shifts for each identified metabolite are listed in Table 2.
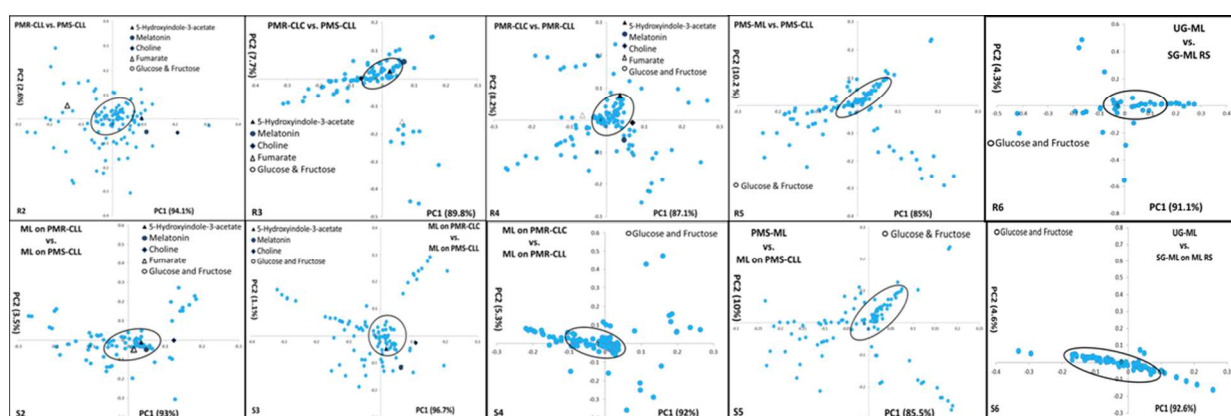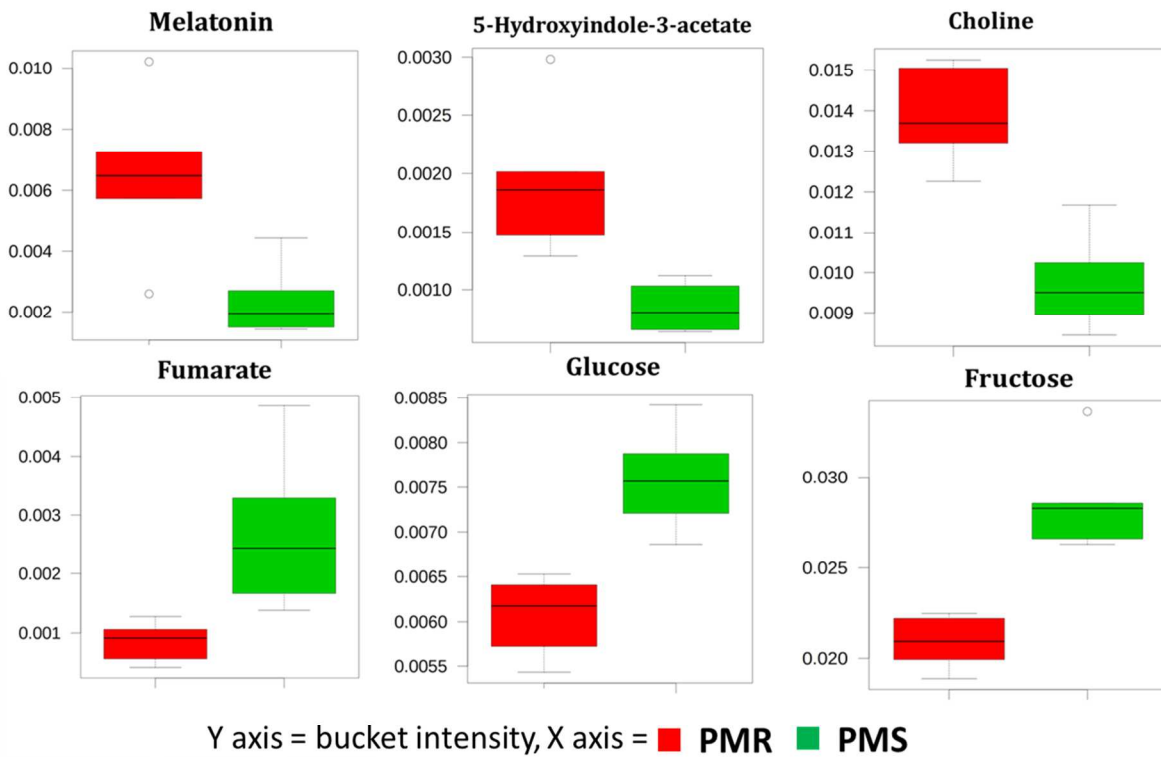

Supplemental Figure 3. Loading Plots corresponding to PCA scores plots. Each point in the loading plots represents a bucket (multiple buckets can represent a single metabolite). Significant buckets were calculated by Bonferroni corrected confidence intervals. R2, R3, R4, R5, & R6 are the pairwise comparison of rootstocks; **R2)** PMR-CLL vs. PMS-CLL, **R3)** PMR-CLC vs. PMS-CLL **R4)** PMR-CLC vs. PMR-CLL, **R5)** PMS Mickey Lee vs. PMS-CLL, and **R6)** UG-ML vs. SG-ML RS. S2, S3, S4, S5, & S6 are the pairwise comparison of the corresponding scion; **S2)** ML grafted on PMR-CLL vs. ML grafted on PMS-CLL, **S3)** ML grafted on PMR-CLC vs. ML grafted on PMS-CLL, **S4)** ML on PMR-CLC vs. ML on PMR-CLL, **S5)** PMS Mickey Lee vs. ML grafted on PMS-CLL, and **S6)** UG-ML vs. SG-ML on ML RS. 5-hydroxyindole-3-acetate, choline, melatonin, fumarate, glucose and fructose were identified as significant metabolites

from PMR rootstock and scion comparisons R2, R3, R4, S2, & S3. Glucose and fructose were

identified as significant metabolites in PMS-CLL rootstock and scion comparisons R5, S4, & S5.

Supplemental Figure 4. Volcano Plots corresponding to PCA loading plots. Each point in the

volcano plot represents a bucket (multiple buckets can represent a single metabolite). Significant

buckets were calculated by a fold change threshold of 1 and a minimum p-value of 0.05. The

pink dots above the horizontal p-value line ($-\log_{10} (0.05) = 1.3$) indicate statistically significant

buckets with p-values < 0.05, and the grey dots below the p-value line represent statistically non-

significant buckets. The vertical fold change (FC) threshold ($\log_2 (1) = 0$) line indicates an

increase or decrease in concentration of metabolites: negative $\log_2$ (FC) values indicate lower

concentrations, and positive values indicate higher concentrations of metabolites. R2, R3, R4, R5

& R6 are the pairwise comparison of rootstocks; R2) PMR-CLL vs. PMS-CLL, R3) PMR-CLC

vs. PMS-CLL R4) PMR-CLC vs. PMR-CLL, R5) PMS Mickey Lee vs. PMS-CLL, and R6) UG-

ML vs. SG-ML RS. S2, S3, S4, S5 & S6 are the pairwise comparison of the corresponding scion;

S2) ML grafted on PMR-CLL vs. ML grafted on PMS-CLL, S3) ML grafted on PMR-CLC vs.

ML grafted on PMS-CLL, S4) ML on PMR-CLC vs. ML on PMR-CLL, S5) PMS Mickey Lee

vs. ML grafted on PMS-CLL, and S6) UG-ML vs.SG-ML on ML RS. 5-hydroxyindole-3-

acetate, choline, melatonin, fumarate, glucose and fructose were identified as significant

metabolites from PMR rootstock and scion comparisons R2, R3, R4, S2, & S3. Glucose and

fructose were identified as significant metabolites in PMS-CLL rootstock and scion comparisons

R5, S4, & S5.

Supplemental Figure 5. Box and whisker plots. Box plots indicate the highest percent of the

individual metabolites' concentration variability. Whisker plots (lines extending vertically above

and below the box) indicate concentration range if outside the box; and circles indicate outliers

in the data that are not included between the Whiskers. Choline, 4-hydroxyindole-3-acetate, and

melatonin are present in higher concentrations in PMR. In PMS, fumarate, glucose, and fructose

are present in increased concentrations. Note: the y axis indicates bucket intensity which is directly proportional to concentration.