

**Supplementary Figure 4: Correlation graphs. a)** Correlation between firmness and measured parameters/compounds. Correlation coefficients for the top 25 parameters/compounds most correlated with the firmness are shown as bars, indicating positive (right) and negative (left) correlation. Parameters demonstrating a statistically significant correlation are denoted with an asterisk ( $p$ -value $<0.05$ ). **b)** Correlation Heat map. The correlation coefficients (Pearson) among metabolites, internal quality parameters, total phenolic content (TPC), and enzymatic activities across all samples are displayed. A correlation cut-off of 0.65 was applied; therefore, pair-wise correlations failing to meet this threshold were set to 0.

