POSTHARVEST CHARACTERISTIC OF THE MUTANTS

Water loss
Fruits from AC and M82 varieties lose more water and without significant changes between them (Figure 1B), which is reflected in clear signs of desiccation more rapidly that those of the DFD, nor, and rin mutants (Figure 1A).

Firmness
Compression analysis of intact AC and M82 fruits showed a typical loss of fruit firmness from B to B12. In contrast, all stages from B to B12 from nor, rin and DFD, were statistically firmer than those of AC and M82 at the same stage, exhibited minimal softening during ripening (Figure 1C).

THE INFLUENCE OF RIPE ON/OFF VINE ON THE TOMATO METABOLOME

Figure 4. Global overview of the dynamic changes in primary and carotenoid metabolism in M82 ripened on plant (on) and tomato picked at green stage (G) and ripened under commercial conditions (off). The ripening stages were green (G), breaker (B), turning (Tu), pink (Pi) and red (RR). (A) Principal components analysis (PCA) and (B) heatmap representation. Data are normalized to the mean response calculated for the green stage. The scale is logarithmic. Values presented are means of six replicates and are showed in false-color code.

CONCLUSIONS
- The nor and rin mutants show the most substantial differences, while the DFD mutant shows an intermediate phenotype.
- Harvest fruit at pre-ripe stage and then triggering off-vine climacteric ripening by exposure to ethylene gas:
  - Have a clear advantage of maintain firmness
  - Detaching fruits means that the delivery of nutritionally valuable compounds from the parent plant ceases.