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Internal Research Log

Title: DRHR-Log-20250811-TOMATO-OS- $\alpha$

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1. Sample Source

At 03:17 on 11 August 2030, spontaneous light-and-sound activity occurred in greenhouse C-7.

Plant ID: T-0811-24.

Field note: the specimen triggered its LED strip 24 short beeps; condensation on glass spelled "HELLO FROM INSIDE."

Immediately sealed, stored at 18 °C, darkness.

2. Morphological Observation

- Fruit form: eleven heart-shaped tomatoes, mean mass 98.3 g.
- Surface: flawless, tomato-red #FF6347,  $\Delta E < 0.2$ .
- Cross-section: uniform 33 x 33

3. dot matrix (Annex A).

4. Biochemical Analysis

- Brix/Acid ratio: 6.47 (control 4.12).
- Tomatine: not detected ( $<0.01$  ppm).
- Water activity: 0.993, indicating abnormally dense cell structure.
- GC-Olfactometry: unknown peak P-24 at retention time 8 min,  $m/z$  811.

Note: P-24 aligns with 24-beep cadence; suspected informational pheromone marker.

5. Acoustic Record

Hypothesis: plant encodes data via water-film vibration producing audible signal.

6. Behavioral Log

- Within 24 h, leaves rotated  $11.3^\circ$  toward light source—matching fruit count.

- At the 24th hour exactly, plant fell silent, LEDs off, system archived.

## 7. Conclusion

Sample T-0811-24 exhibits self-organizing encoding and cross-modal communication.

## 8. Annexes

A Heart-tomato cross-section PNG (33 x 33 array, uncompressed)

## 9. Attachments

<https://tomatoofficial.github.io/AUDIOLOG-2031-0183-A.mp3>