



AIM OF THE STUDY:

WHAT IS THE IMPACT OF HDCOLD® TECHNOLOGY ON THE STORAGE QUALITY OF RED KIWI FRUITS COMPARED TO A STANDARD COLD ROOM?

Current practice^{1,2,3}:

- Recommended setpoints:
 - 0–1°C / 90–95% relative humidity
 - 3 to 5 months in cold storage
- Extremely sensitive to ethylene
- Existing technologies to extend storage:
 - Post-harvest treatment (1-MCP)
 - Use of controlled atmosphere

HDCold® technology:

- Cold system which maintain natural relative humidity at high levels (>98 %)
 - No addition of liquid water
 - Decrease of water loss, and therefore weight loss of the products
- Low temperature difference between the set point and the refrigerant:
 - Less hydric stress on the products
 - Less to no frost formation



¹CTIFL, « Fiches techniques Agréage - Kiwi », 2025
<https://agreage.ctifl.fr/fiche/fruits/KIWI>

²University of California, « Kiwi | Postharvest Research and Extension Center », 1996
<https://postharvest.ucdavis.edu/fr/produce-facts-sheets/kiwifruit>.

³Kiwi Passion, « Kiwi rosso - Red Passion »,
<https://kiwipassion.it/fr/red-passion/>

RESULTS

Harvest and storage date: 2 Oct. 2024

Post-harvest treatment: 4–5 Oct. 2024

Packaging: plastic crate

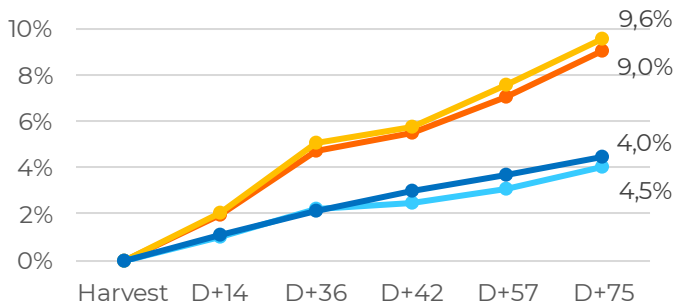
Classical cold storage – No treatment
(1°C, unregulated RH)

**Classical cold storage –
1-MCP treatment**
(1°C, unregulated RH)

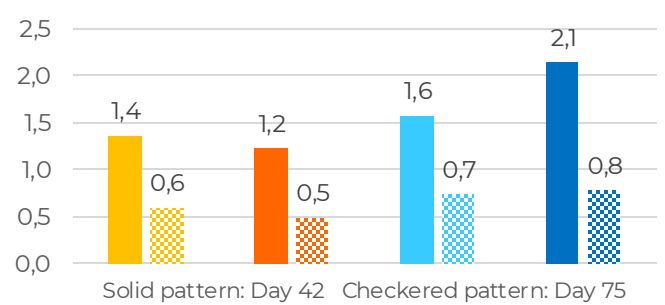
HDCold® storage – Untreated
(0.5°C, 98% RH)

HDCold® - 1-MCP treatment
(0.5°C, 98% RH)

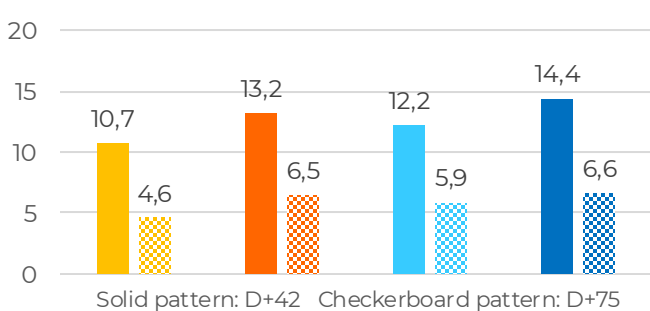
Net weight loss (%)



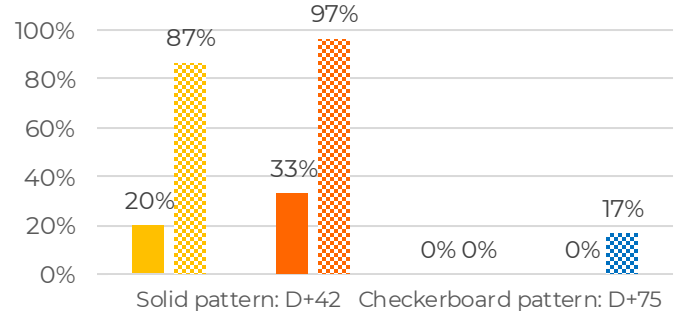
Flesh firmness (kg/0.5 cm²)



Acidity (g/L total acidity)



Wilting (%)



CONCLUSIONS

Based on the results of this trial, the HDCold® technology on Red Passion™ red kiwifruits:

- ✓ **Reduces weight loss** by more than 50%;
- ✓ **Maintains greater firmness and acidity** during storage, particularly when **combined with 1-MCP** treatment;
- ✓ Maintains **wilting of less than 20%** for up to a minimum of 75 days in storage, with and without post-harvest treatment;
- ✓ Shows little or no external or internal storage disorder;
- Repetition of this test should be considered to insure these results



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