

Pineapple

Victoria

2025



AIM OF THE STUDY:

DOES THE USE OF A HDCOLD® CONTAINER IMPROVE THE QUALITY UPON RECEIPT OF PINEAPPLE COMPARED TO A STANDARD REFRIGERATED CONTAINER?

Current practice^{1,2,3}:

- Recommended storage temperature for ripe pineapples: 7-12°C with 85-90% relative humidity.
- Non-climacteric fruit that must be harvested when ripe.
- Risk of chilling injury (browning of the flesh) when refrigerated below 12°C.
- Minimum sugar content of 13°Bx desired for the French market.
- Existing technologies for extending storage:
 - Use of controlled atmosphere
 - Use of ethylene absorbers

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



¹ CTIFL, « L'ananas: qualité en commercialisation », 2023
<https://www.ctifl.fr/l-ananas-qualite-en-commercialisation>

² INRAE, « Tropicfruit - Chilling injury », 2022
<https://ephytia.inra.fr/C/26555/Tropicfruit-Chilling-injury>

³ University of California, « Pineapple | Postharvest Research and Extension Center », 1996
<https://postharvest.ucdavis.edu/fr/produce-facts-sheets/pineapple>

RESULTS

Harvest date (Réunion):

- Harvest A : 17/07/2025
- Harvest B : 24/07/2025
- Harvest C : 31/07/2025

Packaging: plastic crate

Setpoints: 8°C, 96% RH if regulated

Study conducted on three harvests, with overall averages presented below.

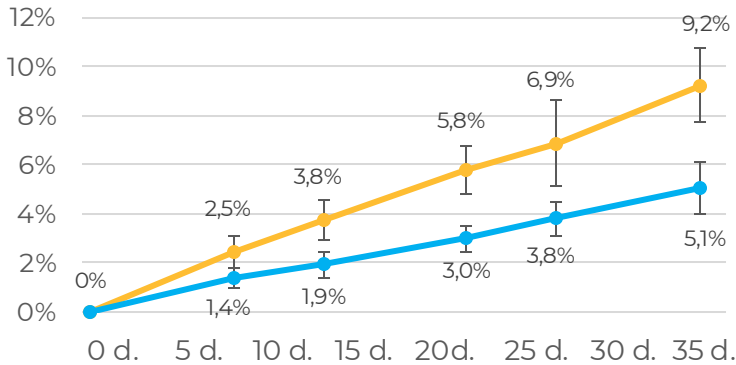


Classical container



HDCold® container

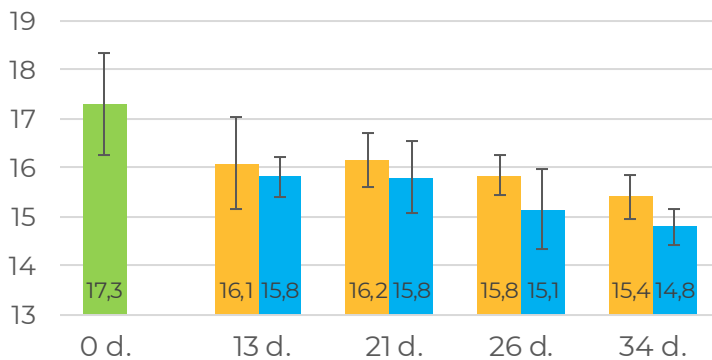
Weight loss (%)



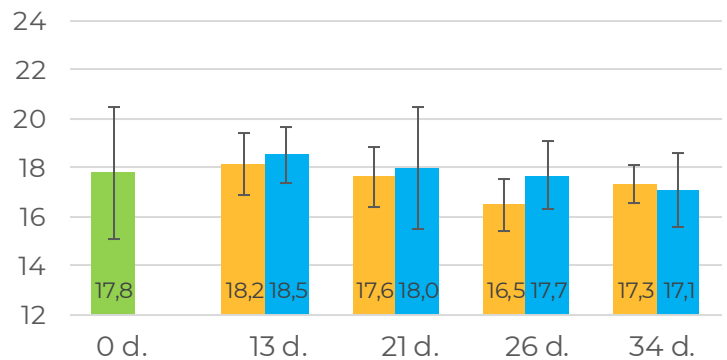
Evolution of external appearance



Suger content (°Bx)



Titration acidity (mEq/100g)



CONCLUSIONS

Based on the results of this trial, HDCold® technology:

- ✓ Reduces by half weight loss at 8°C, compared to classical cold container
- ✓ Maintains the same appearance as at harvest (green/yellow color, and freshness of the crown)
- ✓ Results in slightly less sweet and more sour pineapples
- ✓ Maintains optimal quality for up to 13 days of storage at 8°C

➤ Promotes mold growth on damaged areas and the stem cut after 3 weeks of storage.

Note:

8°C is not suitable for Victoria pineapple storage. Indeed, vitrescence appears on the flesh after 13 days of storage, then turn to browning when returned at 20°C.

It would be préférable to store Victoria pineapple at a higher temperature, such as 12°C, to delay the appearance of that disorder.



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