

Apple

**Belchard[®]
Chantecler
(cov)**

2 trials



AIM OF THE STUDY:

WHAT IS THE IMPACT OF THE HDCOLD[®] TECHNOLOGY ON THE BELCHARD[®] CHANTECLER(COV) APPLE STORAGE QUALITY ?

Current practice¹:

- Recommended maturity at harvest:
 - Starch: 6-7
 - Firmness: 7-8 kg/cm²
- Normal cold storage (5 months): 2-3°C
- AC storage (6-7 months):
2-3% O₂/CO₂ (ULO: 1.5%)
- Main disorders:
High sensitivity to wilting and internal browning (CO₂ asphyxia)

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 Vaysse P., et Landry P., 2004. Pomme-Poire de la récolte au conditionnement. CTIFL. 123 p.

RESULTS

2020 trial: Analysis after 4 months of storage

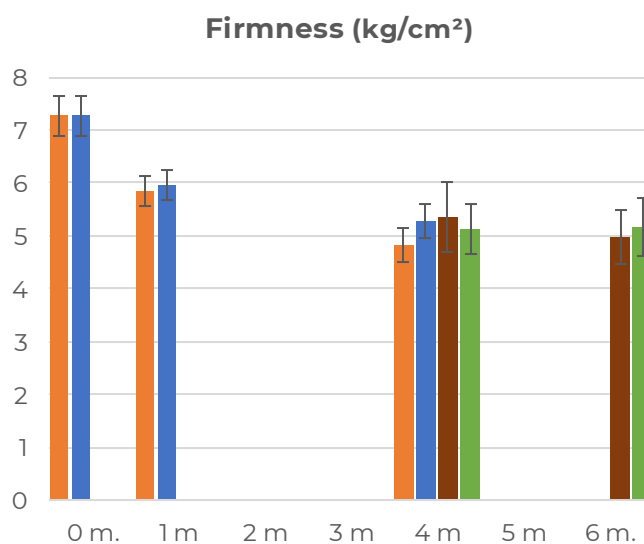
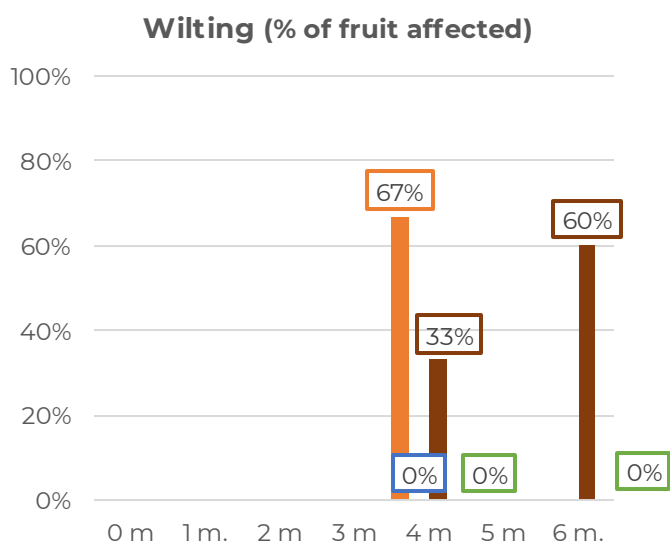
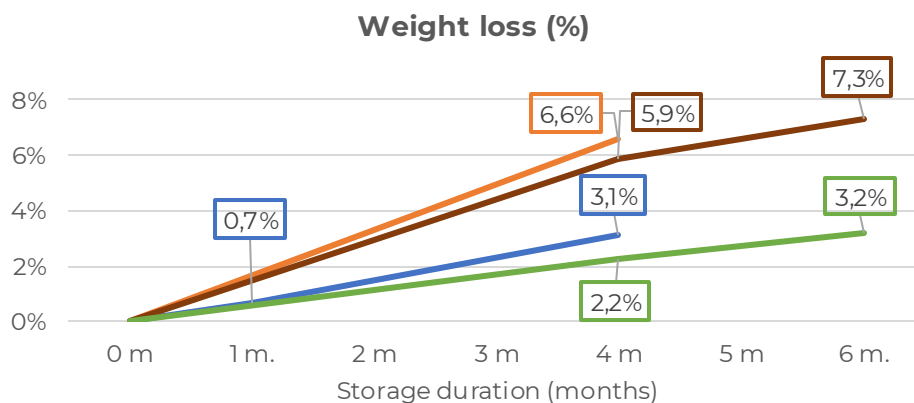
Classical cold room (2°C, unregulated RH)

HDCold® cold room (2°C, 98% RH)

2021 trial: Analyses after 4 and 6 months of storage

Classical cold room (2.5°C, unregulated RH)

HDCold® cold room (3°C, 98% RH)



CONCLUSIONS

Both trials showed that HDCold® technology offers several advantages over standard cold rooms:

- ✓ **Weight loss reduced by 2 to 3 times**
- ✓ **No wilting, even after 6 months of storage**
- ✓ **Significantly greater firmness after 4 months on the 2020 batch**
 - ✓ Equivalent on the 2021 batch (Student T-test, $\alpha = 0,05$)
- **No significant differences on internal and external disorders occurrence between both storages**
- **Slightly lower sugar content and acidity in HDCold® cold room, however without any statistical differences**

