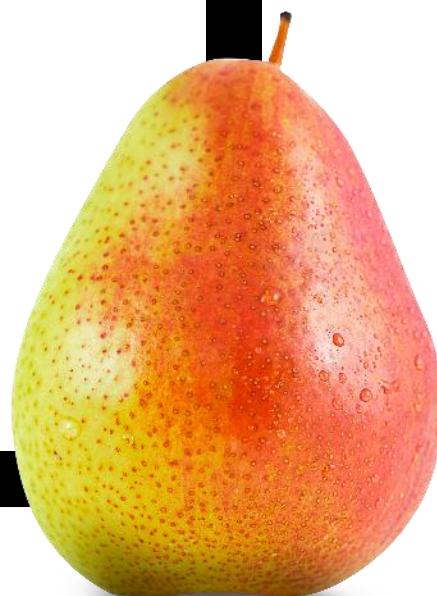


# Pear

**Doyenné du  
Comice**

**2021**



## AIM OF THE STUDY:

DOES THE HDCOLD® TECHNOLOGY IMPROVE THE STORAGE QUALITY OF COMICE PEAR UNDER NORMAL ATMOSPHERE?

### Current practice<sup>1,2</sup>:

- Recommended condition at harvest:
  - Firmness: 5-6 kg/0.5 cm<sup>2</sup>
  - Background color: C2-C3 (CTIFL)
- Storage in a coldroom (4-5 months):  
-1°C to 0.5°C with 90-95% RH
- AC storage (5-6 months):  
2-4% O<sub>2</sub>/CO<sub>2</sub>

### 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

<sup>1</sup> Vaysse P., Landry P., 2004. Apples and pears from harvest to packaging. CTIFL. 123 p.

<sup>2</sup> Gabioud Rebeaud S., Bühlmann A., 2024. Storage recommendations for fruit in 2024. Agroscope Technical Data Sheet No. 222



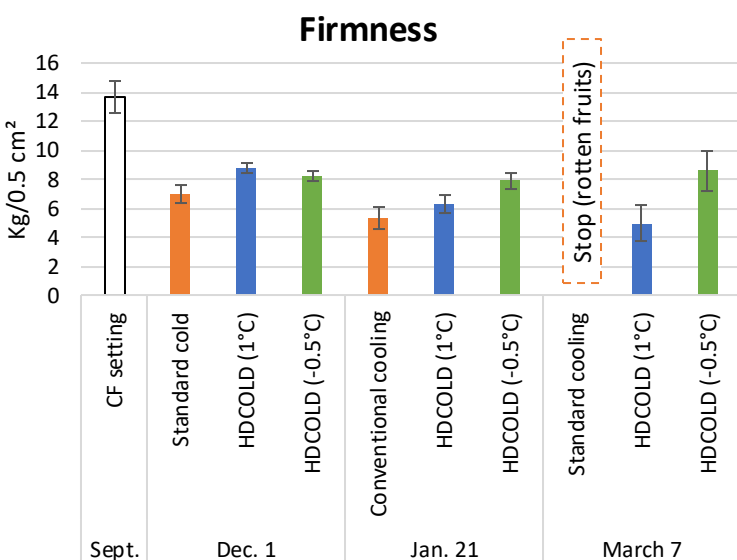
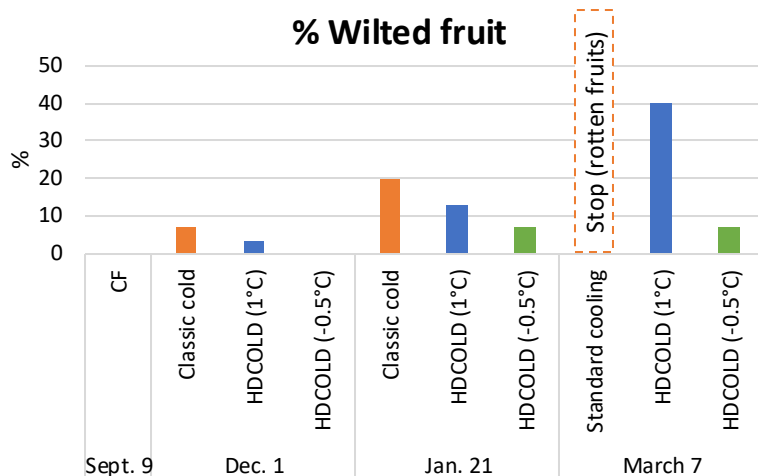
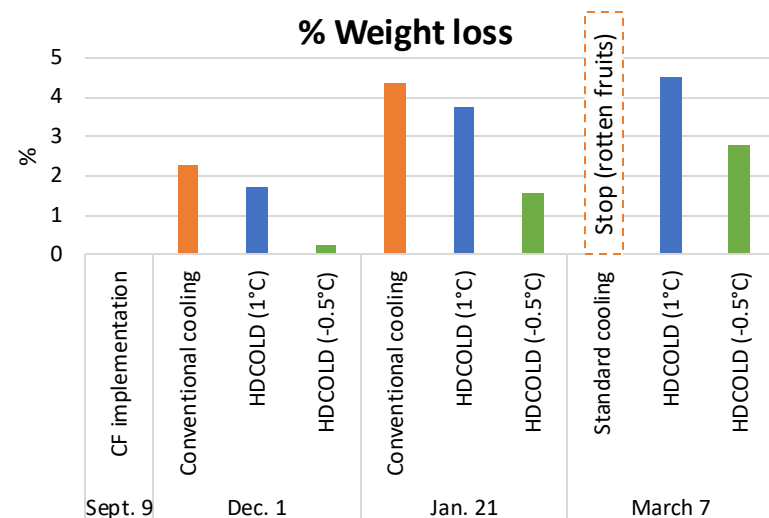
# RESULTS

**Harvest:** Sept. 8, 2021 (4.4 kg/0.5 cm<sup>2</sup>, background color = C 3.9)

**Classical cold storage** (1°C / unregulated RH / ethylene)

**HDCold®** (1°C / 98% RH / ethylene)

**HDCold®** (-0.5°C / 98% RH / no ethylene)



Date	Modality	% physiological disorders	% fungal disorders	Background color	°Brix	Acidity (g/L)
Sept. 9	Harvest	0	0	3.9	12.3	1.2
	Classical (1°C)	2	0	6.0	13.1NS	0.6NS
Dec. 1	HDCold® (1°C)	1	0	5.3	13.8NS	1.1NS
	HDCold® (-0.5°C)	0	0	5.1	13.7NS	0.8NS
Jan. 21	Classical (1°C)	8	4	7.1	12.7NS	1.0NS
	HDCold® (1°C)	1	1	4.7	12.5NS	0.8NS
	HDCold® (-0.5°C)	0	1	5.6	13.5NS	1.5NS
March 7	Classical (1°C)	Rotten fruit				
	HDCold® (1°C)	12	6	4.6	11.5a	0.8NS
	HDCold® (-0.5°C)	0	0	5.8	12.8b	0.5NS

Note: for each release date, letters (if different) indicate statistically significant differences. (NS: not significant, a or b).

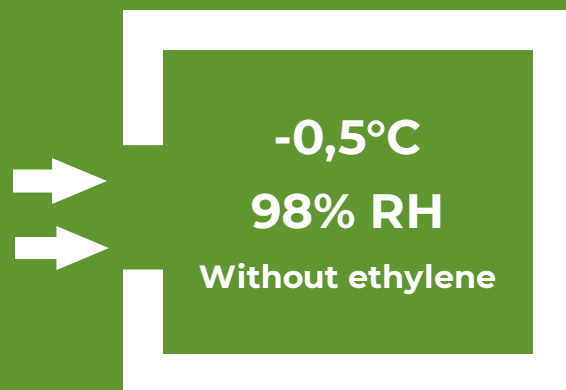
## CONCLUSIONS

Thanks to HDCold technology®, at -0.5°C, quality was maintained for up to 6 months of storage:

- ✓ Limited weight loss (2.5% after 6 months)
- ✓ Reduced wilting (7%)
- ✓ Firmness maintained above 8 kg/0.5 cm<sup>2</sup>
- ✓ No major storage disorders (physiological/fungal)

However, at 1°C and in the presence of apples, several storage disorders appeared after 4 months of storage: bitter pit, *cladosporium*, senescence, etc. These are more pronounced in conventional cold storage.

## RECOMMENDATIONS



contact@dpkl.fr – +33 5 63 32 58 57