Lettuce

4 varieties

2020

AIM OF THE STUDY:

DOES THE HDCOLD TECHNOLOGY® HAVE A POSITIVE IMPACT ON SALAD PRESERVATION?

Current practice:

- Recommended storage:
  - 0-1°C
  - Less than 2 weeks
  - High humidity
- Storage limited to 3 days at the partner producer
- Moderately sensitive to ethylene (yellowing, appearance of spots, etc.)

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

Pour la conservation du vivant.

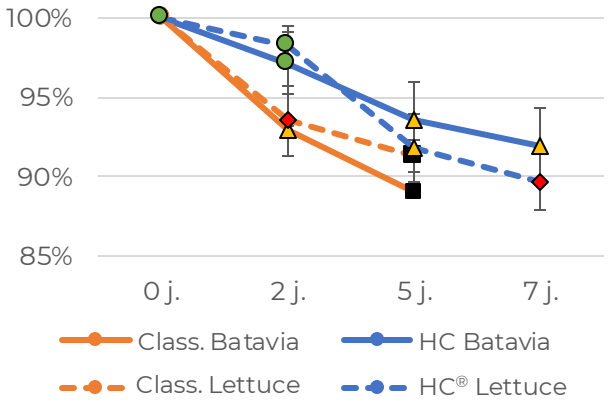
RESULTS

4 varieties of lettuce tested: Batavia, Lettuce, Green and Red Oakleaf lettuce (OL)

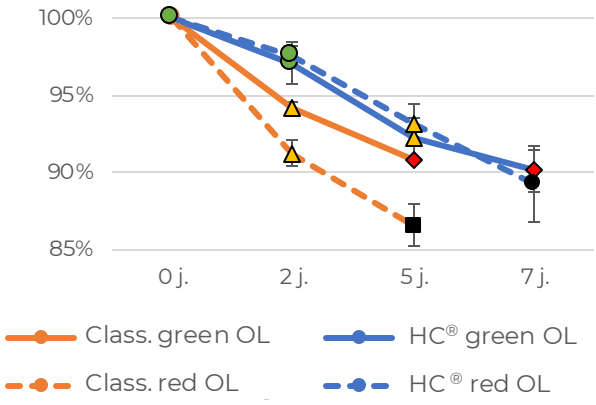
Classical cold room (+ 1°C / non-regulated RH) **HDCold® cold room** (+ 1°C / 96% RH)

3 types of packaging: unprotected crate (UC) / crate with lid / crate with tarpaulin

Weight loss UC (%)
Batavia / Lettuce



Weight loss UC (%)
Green and red oakleaf



Visual state of the products

- Fresh
- Average
- Mediocre
- Bad

Testing of different packaging:
Visual condition of products and possible storage duration

Visual state	Storage duration	Conventional	HDCold®
Unprotected wooden crate	5 days	Severe wilting after 2 days	Slight surface wilting
Crate with lid	2 weeks		Wilting on areas without lid
Crate with tarpaulin	3 weeks		Same. Very good freshness

Maximum storage duration	Convent.	HDCold®
Unprotected wooden crate	1-3 days	5 days
Crate with lid	1-3 days	5-10 days
Crate with tarpaulin	5-7 jdays (estimated)	2-3 weeks

CONCLUSIONS

- ✓ **Net qualitative gain in terms of weight loss, visual appearance and storage duration**
- ✓ **Fresh visual appearance after 2 days of storage, and still acceptable after 5 days**
  - ✓ Conventional: acceptable to mediocre state after 2 days, and generally bad after 5 days.
- ✓ **Most effective packaging : non-airtight covered pallet**
- ❖ **To be noted: storage conditions were not ideal in both cold rooms as the lettuces were stored in the presence of apples, thus with ethylene.**

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