

Identify potato varieties adapted to storage at low temperatures

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Introduction:

Need to store potatoes without sprouting for months:

- Use of anti-sprouting products → Residues? Cost?
- Work on varieties with different dormancies
- **Decrease storage temperature → risk of cold induced sweetening (CIS)**
 - Bad taste
 - Browning of crisps and French fries during frying (problem for industrial varieties)
 - Toxicity due to acrylamides

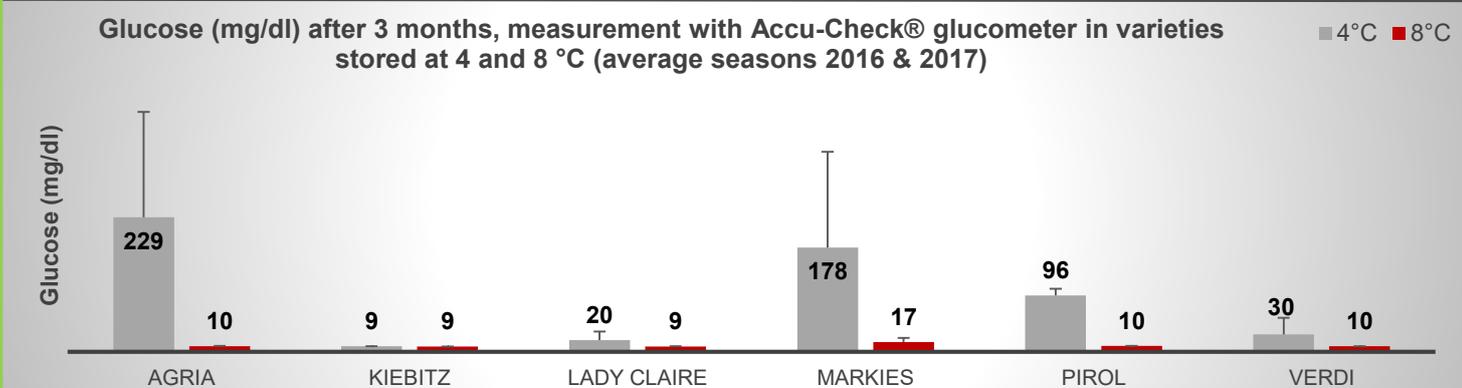
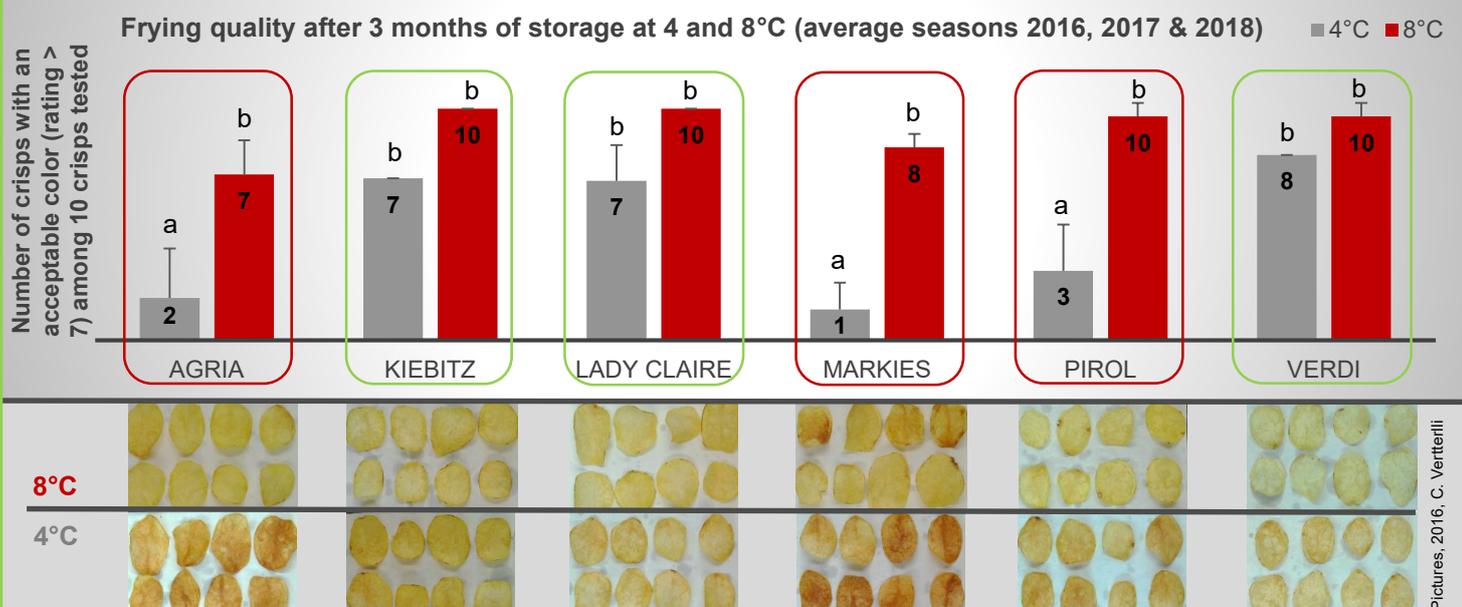
Objective: find new varieties without sweetening during cold storage

Materials & Methods:

- Storage of varieties from the Swiss recommended list at 4 and 8°C
- Glucose titer measurement (Accu-Check® glucometer)
- Frying test with color evaluation of 10 crisps per sample using a scale ranging from 1 (=crisps fully dark) to 9 (=crisps clear), a score above 7 is considered as an acceptable result by the industry



Results:



Conclusion:

- We identified 3 varieties with limited CIS that are suitable for storage at cold temperature: Lady-Claire, Kiebitz & Verdi
- Future research activities will aim at characterizing genetic and enzymatic mechanisms involved in CIS