

Alternatives to CIPC for the control of potato sprouting during storage

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Objectives

- Novel and natural tools for sustainable control of potato sprouting during storage
 - Replace CIPC, an anti-sprouting product with a bad ecotoxicological profile
 - Find varieties supporting low temperatures storage to improve conservation
 - Create a model to predict potato sprouting during storage



1. Alternatives to CIPC / Products testing

Experimental units with potatoes (8°C/ 90% Humidity)
+ anti-sprouting products:

- CIPC
- Ethylen + 1-methylcyclopropen (1-MCP)
- 1,4-dimethylnaphthalen (1,4DMN)
- Confidential product
- L-Carvone
- 3-decen-2-one

→ Research of new product, efficient, cheap, and less toxic than CIPC for potato storage



2. Identification of varieties for frying

Test of different varieties of the Swiss recommended list for storage at 5 or 8°C:

- Sprouting observation
- Frying test and color evaluation

→ Varieties identification with good characteristics for cold storage and no browning after frying



3. A sprouting model for potatoes

- Analyze of field and storage data since 1989
- Identification of variables influencing sprouting
- Design of a model with the main impacting variables
- Prediction of potato sprouting during storage using the model

→ Tool for supporting farmers decision-making



Sprouting control

Future practical applications planned :

- Evaluation of the efficacy of the best anti-sprouting product in commercial storage chambers
- Promotion of the production of industrial potato varieties storable at low temperature
- Use of the model for sprouting prediction