Abstract of keynote by Bart Nicolai

Pome fruit are commonly stored at low temperature, a decreased oxygen partial pressure and slightly increased carbon dioxide partial pressure (controlled atmosphere storage, CA). A relatively new approach for storing pome fruit is based on a dynamically controlled atmosphere (DCA). Instead of a constant setpoint for oxygen, the lowest setpoint beyond which fermentation overtakes respiration is continuously searched based on the stress response of the fruit. In this presentation, we will compare different methods for measuring low oxygen stress of pome fruit. We will also show how the fruit metabolism adapts to such hypoxic conditions.

Abstract of keynote by Leo Lukasse

This presentation will cover CA, relative humidity, temperature and energy consumption in refrigerated containers. Factors affecting the temperature distribution will be described and quantified. Special attention will be given to the reduction of temperature gradients in containers. Temperature gradients are influenced by many factors, such as: temperature settings, humidity settings, fresh air exchange settings, defrost settings, refrigeration capacity, insulation value, ambient temperature, container age, stowage, air flow circulation, power-off periods and the specific heat of the cargo. In the presentation, the most important factors will be identified and discussed briefly. Special focus will be on the effect of air flow distribution and how to manipulate it. Humidity control will be described, including the possible effects on temperature. Real measurement data will be used to illustrate the described mechanisms. Finally, the main aspects of controlled atmosphere in refrigerated containers will be discussed.

GENERAL INFORMATION

Location
Room HG D 7.2 (Hörsaal)
ETH Zürich
Rämistrasse 101, Zürich

Cost
The registration cost for this event is 80 CHF, and includes lunch, coffee breaks and Apero. The event is free of charge for PhD students.

Registration
Registration is mandatory.
Please register on following website:
https://goo.gl/forms/bjciI1ywjtPxAPmy1

Early registration is advised as places are limited.
If you are interested in presenting a poster (as academic or industry), please contact Thijs Defraeye

Deadline
July 15, 2017

Contact
Dr. Thijs Defraeye
Phone +41 58 765 47 90
thijsd@ethz.ch

How to get there
https://www.ethz.ch/en/campus/locations/zurich-region/HG.html

ETH zürich

Empa
Materials Science and Technology

New cold-chain and packaging technologies to reduce food losses

Workshop

ETH Zürich, Room HG D 7.2 (Hörsaal),
Rämistrasse 101, Zürich

Monday, August 28, 2017
9:00 to 17:00

Online registration:
https://goo.gl/forms/bjciI1ywjtPxAPmy1

Supported by

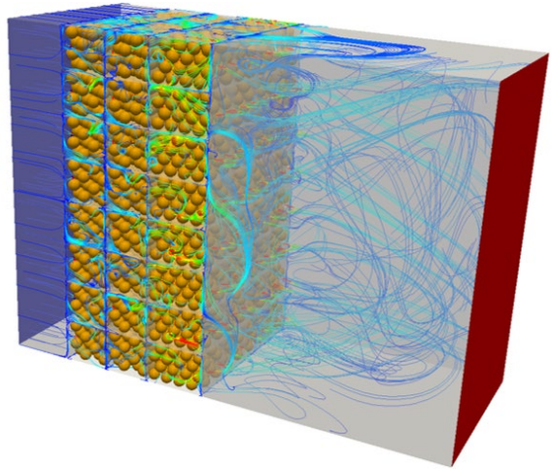
coop

World Food System Center

New cold-chain and packaging technologies to reduce food losses
Workshop

TOPIC
Novel cold chain technology for fresh or frozen fruits and vegetables, postharvest practices, controlled atmosphere storage, thermal sensor technology, ventilated packaging design, active and modified-atmosphere packaging, life-cycle analysis and simulation-based cold chain optimization.

TARGET AUDIENCE
Scientists, engineers and practitioners working in cold-chain or packaging technology.



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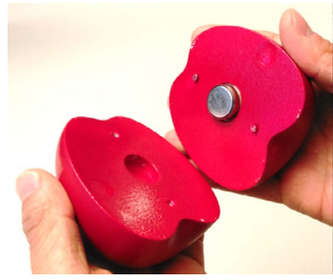

OBJECTIVES
This workshop offers a platform to bring together experts from academics and industry that work on cold-chain and packaging technology for foods. We particularly aim to connect people with different backgrounds and skills so they can share experiences.

To this end, this workshop includes presentations dealing with various aspects of the cold chain, including two keynotes by Prof. Bart Nicolai (KU Leuven) and Dr. Leo Lukasse (Wageningen Food & Biobased Research). Open discussions after the talks will enable you to interact with the speakers. Plenty of networking opportunities are also possible during coffee breaks, lunch or the Apero. During the Apero, a poster session is organized.

We hope that this day leaves you with fresh ideas, new contacts and a better view on the current state of the art in Switzerland and abroad.

AKNOWLEDGEMENTS
This day is organized in the framework of the PACKCHAIN project, which is funded by the Coop Research Program of the ETH Zurich World Food System Center via the ETH Foundation. Their support is gratefully acknowledged.

PROGRAM

08.30 **Welcome coffee and registration**
09.00 **Morning session**
Dr. Daniel Neuwald, Kompetenzzentrum Obstbau-Bodensee - KOB, *A holistic view of pre- and postharvest technologies to face up-to-date challenges in fruit storage*
Dr. René Rossi, Empa - *Stimuli-responsive materials for smart packaging applications*
Claudio Berretta, ETH Zurich - *Cold chains for fresh produce: LCA and the influence on food waste*
Open discussion
10:20 Coffee break
10.50 **KEYNOTE**: Dr. Leo Lukasse, Wageningen Food & Biobased Research, The Netherlands
Climate in refrigerated containers
12.00 Lunch
13.30 **KEYNOTE**: Prof. Bart Nicolai, KU Leuven, Belgium. *Dynamic controlled atmosphere storage of pome fruit*
14.30 Coffee break
15.00 **Afternoon session**
Prof. Selçuk Yildirim, ZHAW, *Active packaging for food: opportunities and challenges*
Dr. Wentao Wu, ETH Zürich - *A virtual cold chain method to improve ventilated packaging for fresh fruit*
Dr. Andreas Bühlmann, Agroscope, *The apple skin microbiome – implications for postharvest quality*
Dr. Thijs Defraeye, Empa/ETH Zürich, *An artificial fruit for monitoring fruit pulp temperature*
Open discussion
16.30 **Apero + poster session**