Energy consumption and quality of vegetables by cooling

Aim of the InSPIRe demo project:

- To investigate the difference in quality and in energy consumption of onions and rockets under various cooling strategies: Pulse cooling and conventional cooling.

Project perspective & gains for industry:

The investigation will identify the potential of optimize the method to reduce the use of energy to store vegetables during winter conditions while maintaining good quality.

This will help the industry to save the environment from increased emissions of greenhouse gases and also result in more efficient production in the future and thus reduced waste of resources.

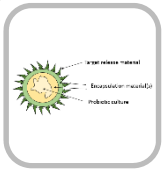
Large Production of onion and rockets

A large energy consumption during storage conditions

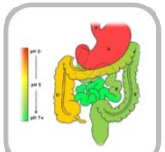
An examination of the production processes and a sustainable energy optimization where the quality of the vegetables is maintained

Reduced greenhouse gas emissions

Energy consumption and quality of vegetables by cooling



GOAL:
To reduce the consumption of energy in the industry and still maintain quality of the vegetables



WHY:
At present the storage of onion and rocket is not an environmentally sound process

HOW:
By implementing a more energy-efficient cooling method in production process

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Related to inSPIRe projekt:
Pilar 1: Optimizing product quality throughout the distribution chain for Fresh and Semi-Fruits and Vegetables

OUTCOME:

The study showed that it is energy-efficient to use pulse cooling over conventional cooling for storing onions and rocket during winter. Energy savings are estimated to a maximum of 60%.

However it has a large negative effect on the quality of the vegetables which will increase the amount of waste.

It is recommended that further studies of maintaining the quality of the vegetables under pulse cooling should be done in the future.

BUDGET: 600.000 DKK

FUNDING BODY: InSPIRe

PROJECT PERIOD: Dec. 2012 - Dec. 2013