



# ACR in Practice

The "My Fruit" logo, which consists of a green apple shape with a blue leaf and a blue stem. The apple is set against a large, light blue circular background. The text "My Fruit" is written in a white, bold, sans-serif font across the center of the apple.

**My Fruit**

# Why Dynamic CA (ACR)?



- Prevent scald & other oxidation problems
- Maintain the premium harvest quality during the storage & shelf-life
- Extend market availability window
- Sustainability of the technical equipment & energy consumption

Dynamic CA



# Advanced Control of Respiration

The system measures respiration rate, calculates Respiratory Quotient (RQ) in full loaded CA stores and automatically adjusts O<sub>2</sub> level within a safe range based on the fruits physiological behavior.



Goal:  
Store fruits at the  
beneficial lowest O<sub>2</sub> level



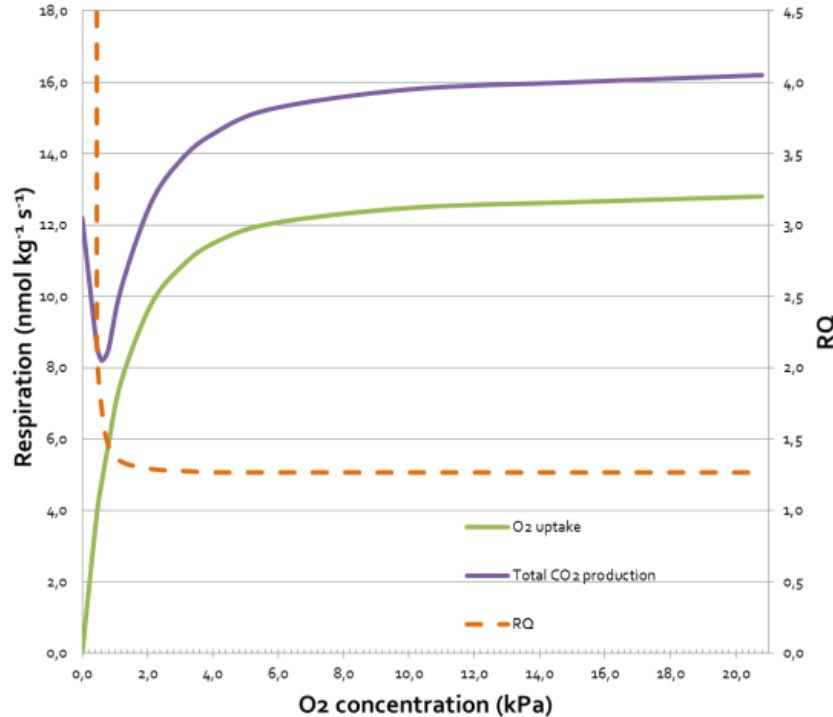
Method:  
My Fruit Dynamic software measures  
O<sub>2</sub> & CO<sub>2</sub> change during a time frame

Dynamic CA



# Background of RQ

## How is RQ defined?



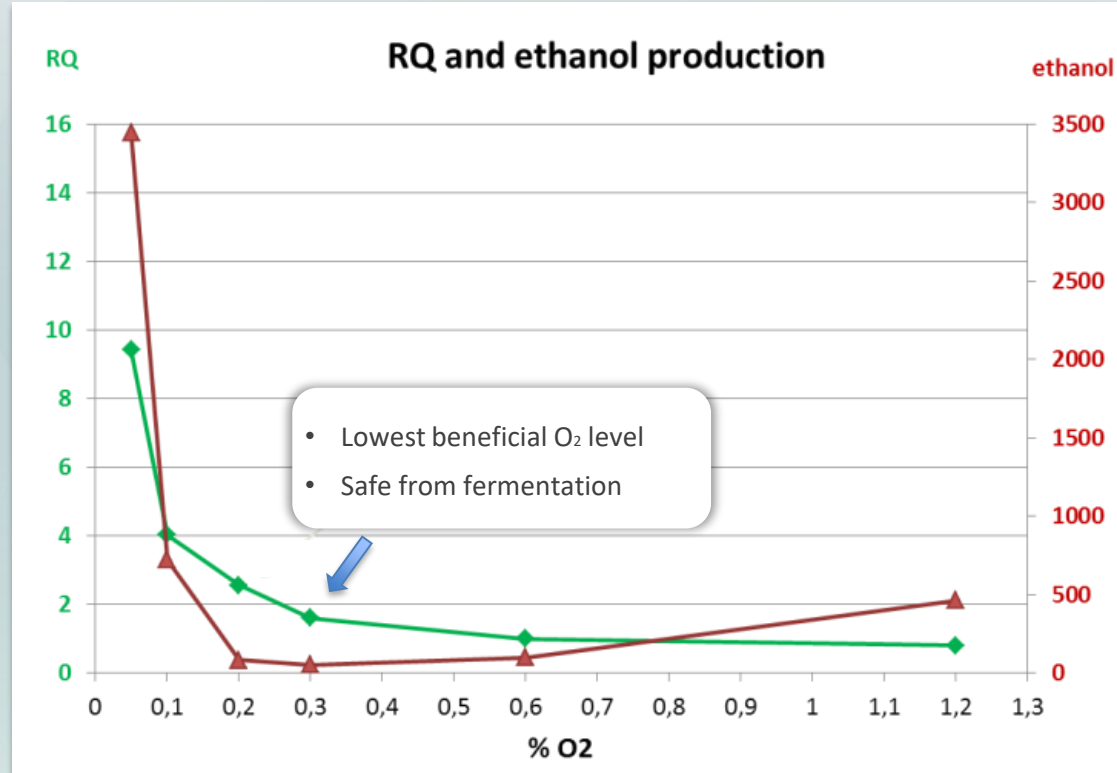
Respiratory Quotient:

$$RQ = \frac{[\text{produced } CO_2]}{[O_2 \text{ taken up}]}$$

Dynamic CA



# RQ: Early warning fermentation



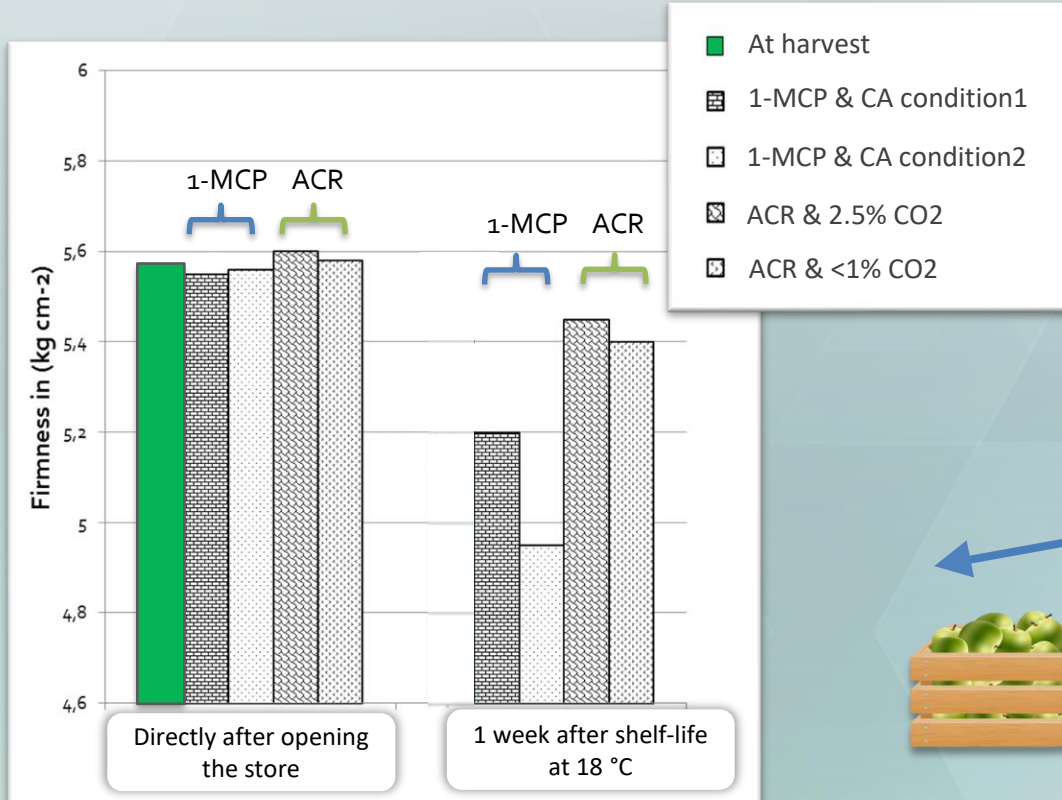
RQ

Ethanol  
Development

Dynamic CA



# Benefits on fruits & energy saving



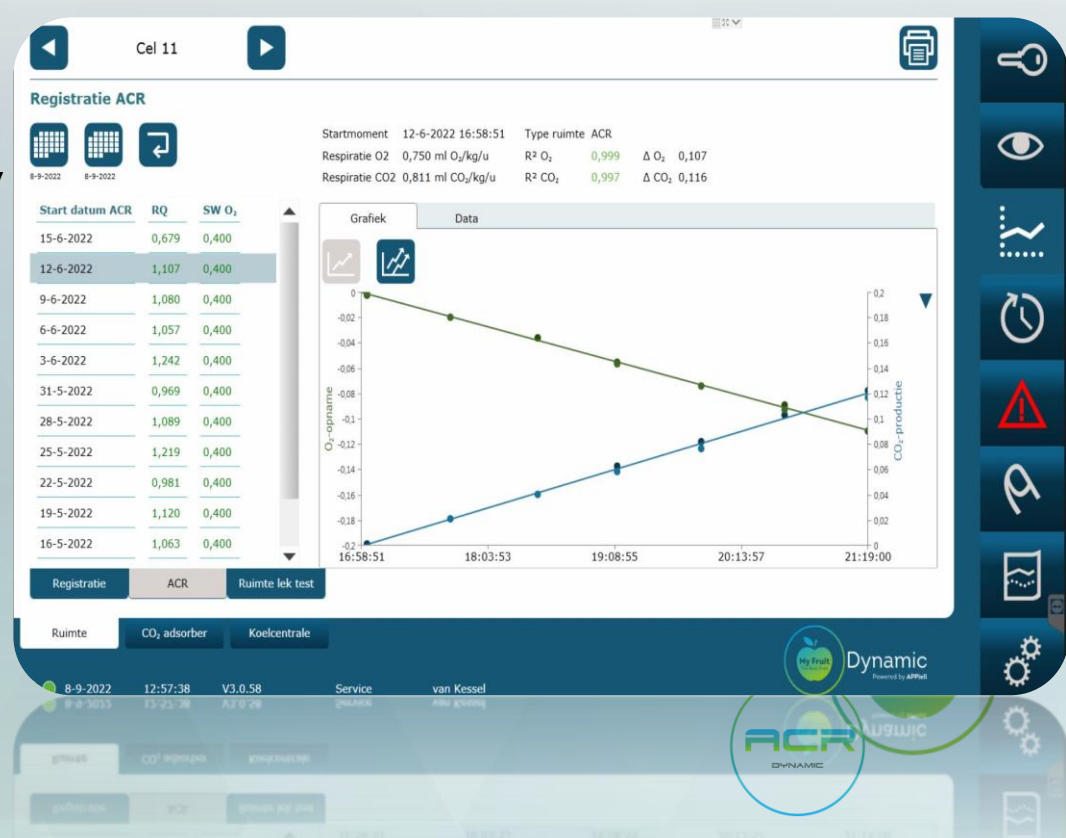
- ✓ Lower energy consumption
- ✓ Less moisture loss

ENERGY COSTS  
- 20 to 30%



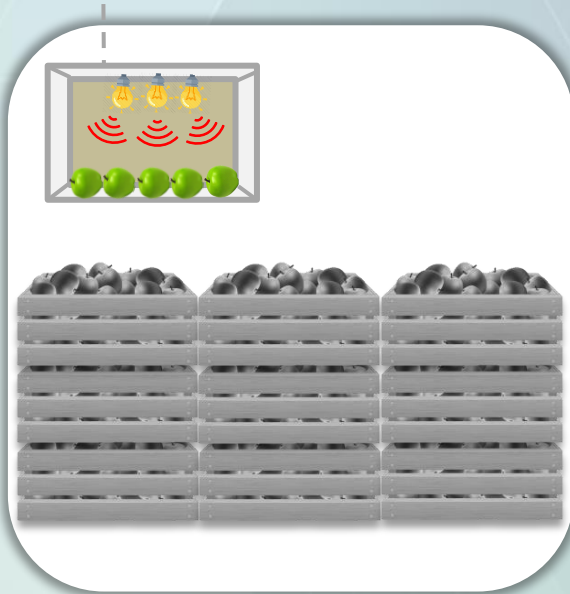
# Process of ACR in My Fruit

- Temporarily shut off cooling & CA activity
- Increase room pressure to  $\pm 10$  mm WC
- Typical run 4 hrs
- 7 data points for  $O_2$  and  $CO_2$
- Two measuring points per room
- 2-3 runs weekly, per room



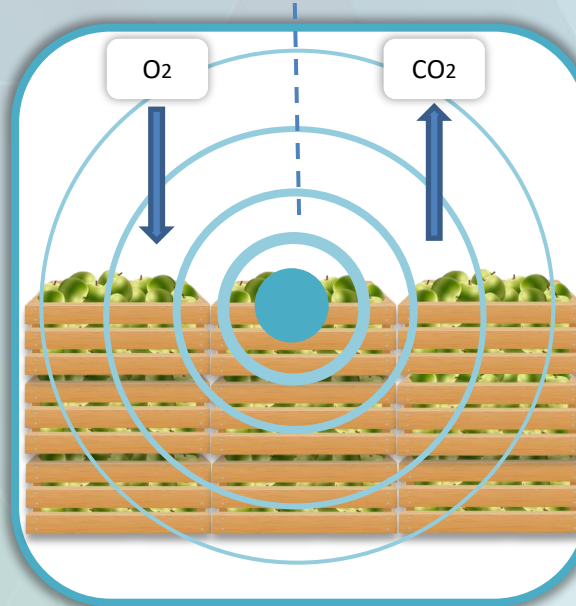
## DCA comparison

Measuring small samples



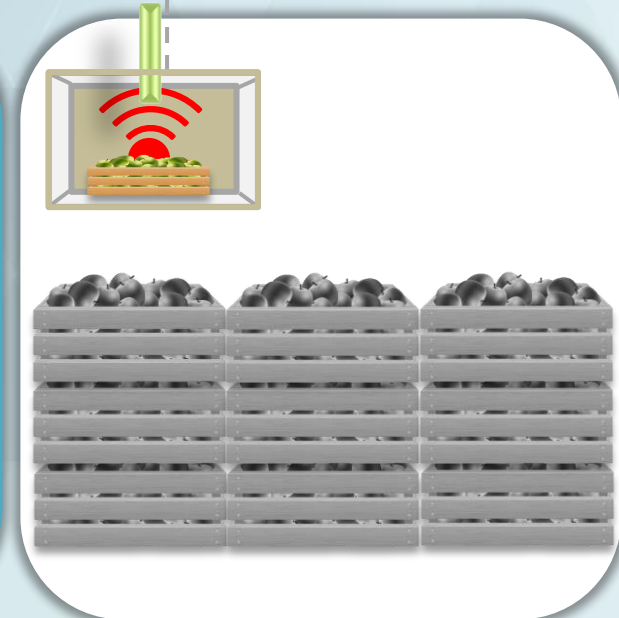
Competitive DCA system I  
Based on Fluorescence

Measuring entire room  
**VA patented System**



ACR  
Based on respiration / RQ

Measuring small compartment



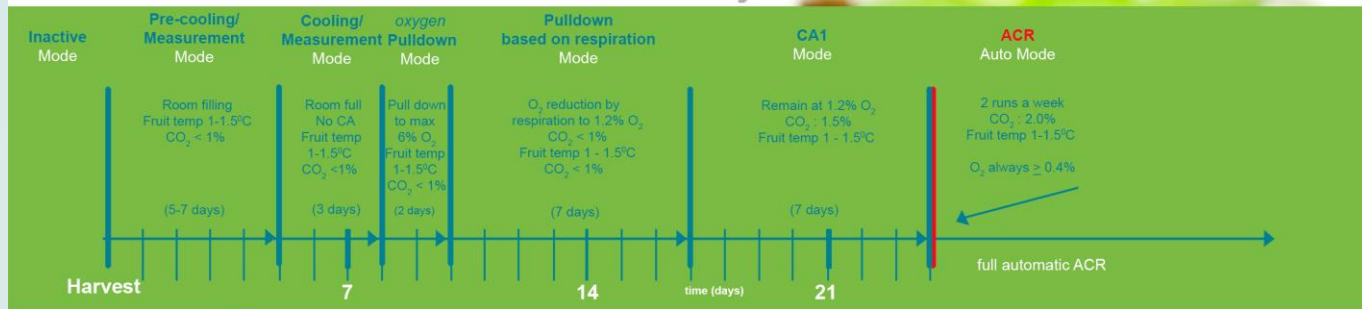
Competitive DCA system II  
Based on ethanol measurements

# Protocols

Generic Protocol Red Delicious, Jonagold,  
Gala, Golden Delicious, Top Red,  
Jonagored, Granny Smith



Dynamic ACR



Dynamic CA

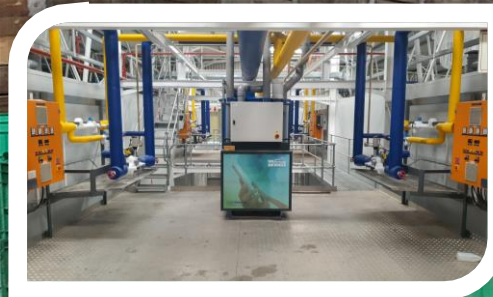
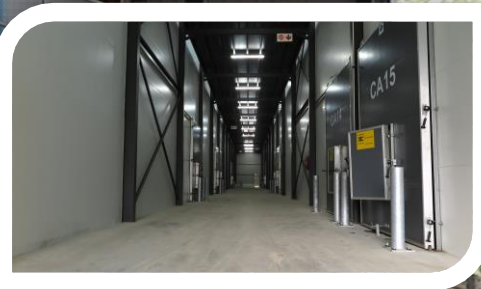


# Novo South Africa

23 ACR Rooms

Cooling control integrated

Storage capacity of 10.500 ton apples



# CA Research Facility WUR PPO

7 CA Testing Rooms & 8 CA lab containers

Cooling control integrated

Waterloss management

Built in 2022



Dynamic CA



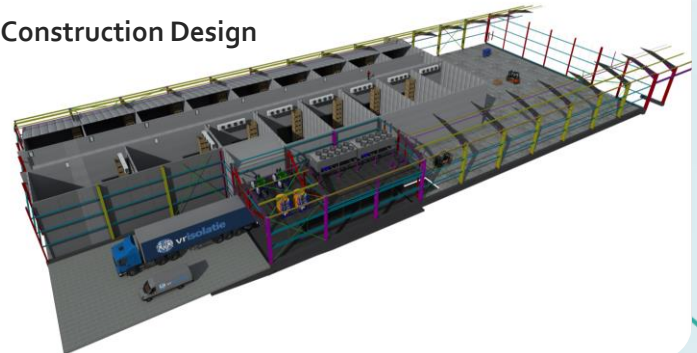
# Blijderveen Fruit Netherlands

36 CA Rooms (8 ACR Rooms)

17 new rooms later

Apples and Pears

Construction Design



Dynamic CA

My Fruit  
The Best Fruit

ACR  
DYNAMIC

THE DYNAMIC FRUIT MANAGER

Check our  
webinar



SCAN ME

**VAN** CA technology  
**AMERONGEN**

FRUIT STORAGE



# The next level of CA storage

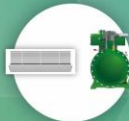
CA EQUIPMENT



CA CONDITIONS



COOLING CONTROL



WATERLOSS CONTROL



**VAN** CA technology  
**AMERONGEN**

RESEARCH  
CONTROL



FLEXIBLE  
CA STORAGE



DYNAMIC CA



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Dynamic CA

