



Controlled Atmosphere storage systems for research capacity expansion

Elke Crouch & Gustav Lötze
Postharvest Lecturer and Researchers
Departement of Horticultural Sciences

in collaboration with
HORTGROscience / SAAPPA



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Controlled atmosphere research need & CA facilities and equipment

Hortgro / SAAPPA feasibility study

Secured funding for following equipment / comparisons

“The plan is that this equipment will form part of the envisaged larger CA research facility to be established at the Department of Horticultural Science. The management systems will be capable of running a larger facility.”

Stellenbosch University strategic fund, funds PSA



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CA equipment currently installed

CA systems of the following 3 suppliers:

Gas at Site

Van Amerongen

Absoger*



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Treatments

1. **DCA-Chlorophyll Fluorescence (DCA-CF)**
+ Ethylene measurement, no scrubbing
one bin measuring respiration quotient (RQ)
(Gas at Site: HarvestWatch™, Isolcell).
2. **DCA-CF + Ethylene measurement & scrubbing**
one bin measuring respiration quotient (RQ)
(Gas at Site: HarvestWatch™, Isolcell).
3. **DCA-respiration quotient (DCA-RQ)**
+ Ethylene measurement, no scrubbing
(Van Amerongen, Advanced Controlled Respiration)
4. **XLO + Ethylene measurement & scrubbing (Absoger)**



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Answered questions:

1. Compare DCA-CF, DCA-RQ and XLO
2. Does ethylene scrubbing improve long term storage (DCA-CF)?
3. All the other parameters of ease of the system control, support, communication etc. will also be evaluated.



Fruit from Langkloof



Gas at Site / Isolcell

DCA-CF
+ / - Ethylene scrubbing
+ RQ measurement



Van Amerongen system

DCA-RQ



Absorber system XLO + Ethylene scrubbing

