

The Beauty of Chrysal

CHRYSA

PREMIUM FLOWER CARE

**Less waste
is more sales
is better margin**



Chrysal potted plant waste program

History



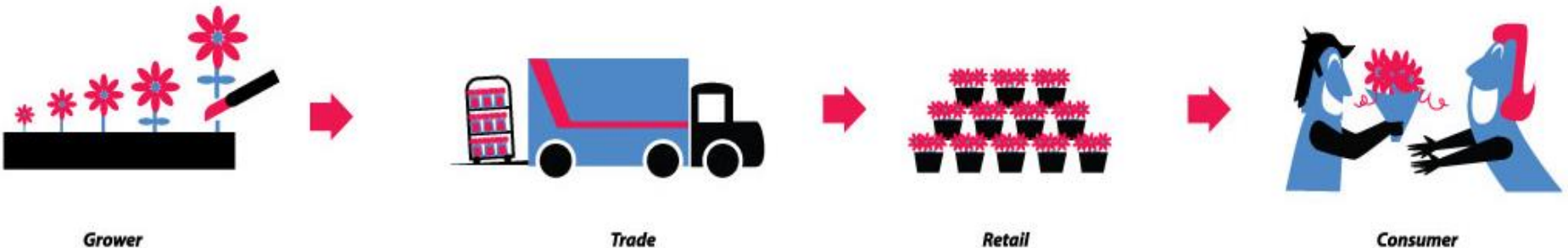
C. Buys



- Founded in 1929 – over 80 years of experience in the horticulture industry
- Worldwide distribution, production and sales
- Leader in research & development of post-harvest care and handling.
- Innovator of the “total chain concept”: from grower to consumer
- Since 2010 potplant care program

Our roots: products to lengthen vase/shelf life

- # 1 in post harvest products in Europe, the Americas and Japan
- The main objective of Chrysal is to lengthen vase life and shelf life to increase customer satisfaction and reduce waste in the chain.
- We help our customers with:
 - Flower & plant care products for every stage in the chain.
 - Technical support & advice.
 - Protocols to enable optimal performance.



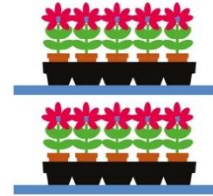
Chrysal Plant Care



Grower



Trade



Retail



Consumer

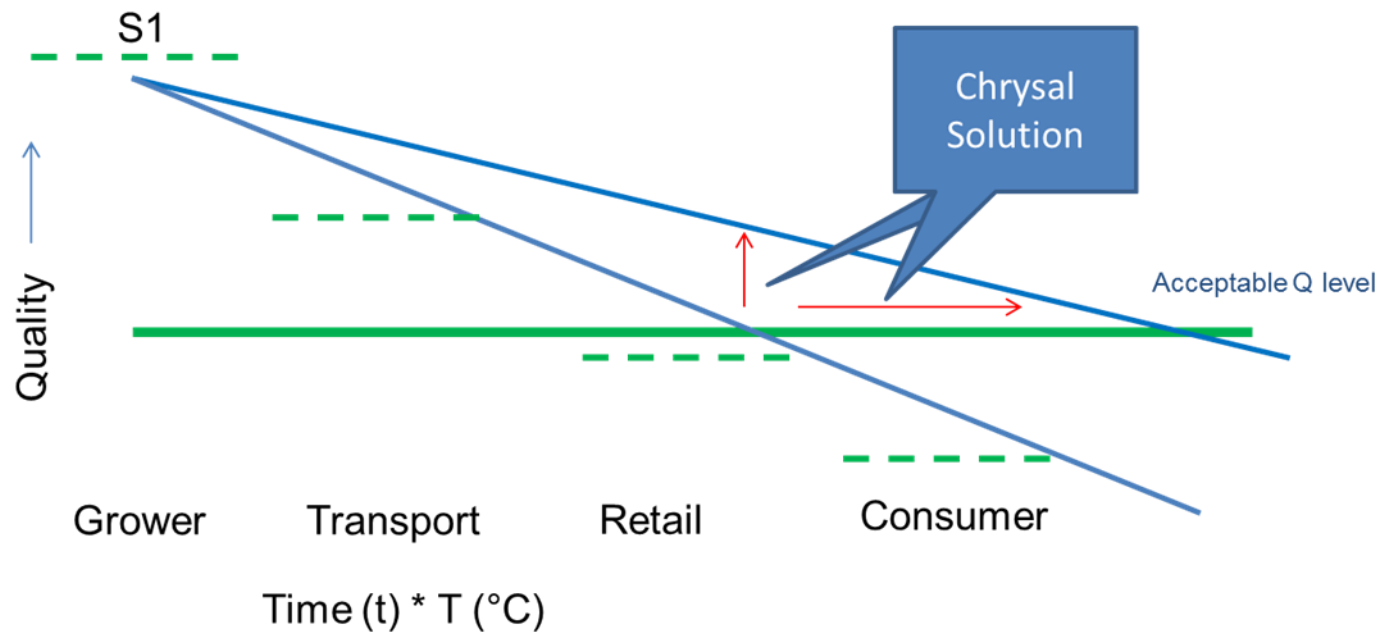


Our Retail Customers

- Tesco, Sainsbury, Waitrose, Coop, Morrisons (UK)
- ALDI, LIDL (Germany & UK)
- Carrefour, Leclerc, Auchan (France)
- Ahold, ICA, Mester Gronn (NL & Sweden)
- Rewe, Migros, Coop (Germany & Switzerland)
- Safeway, Walmart, Stop n Shop (USA)
- AEON (Japan)
- ...

Plant Waste in Retail

From a quality perspective



$$\text{Quality} = (S) \text{tart } Q - t (\text{Days}) * T (^\circ\text{C})$$

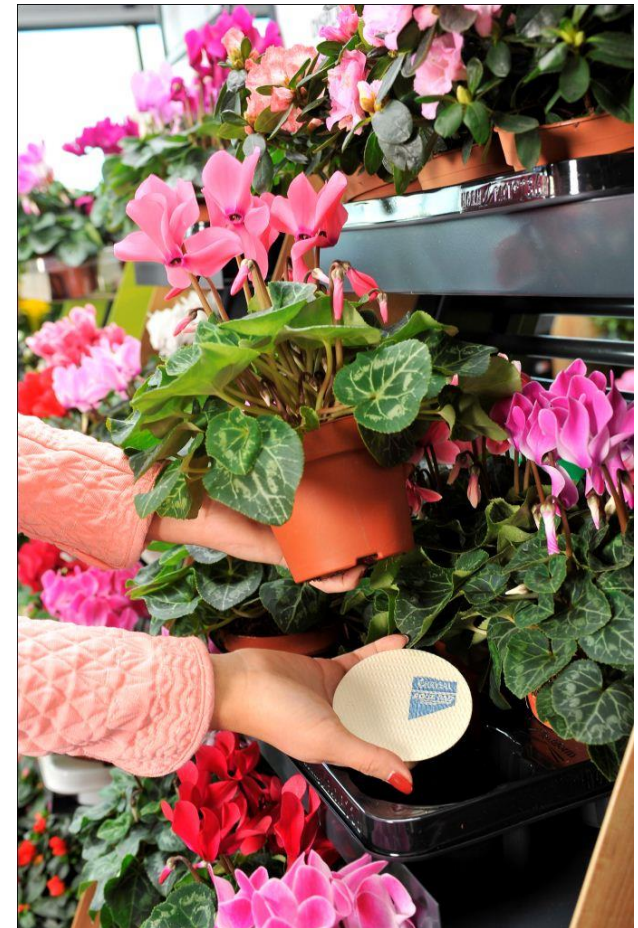
Plant Waste in Retail

- Ornamental level
 - Leaves and flowers start wilting
 - Leaf yellowing & necrosis starts
 - Bud and leaf drop
- Sales level
 - Display will not be attractive anymore
 - Sales stagnation > more waste
 - Margin decreases
 - Low margin leads to a increased sales price



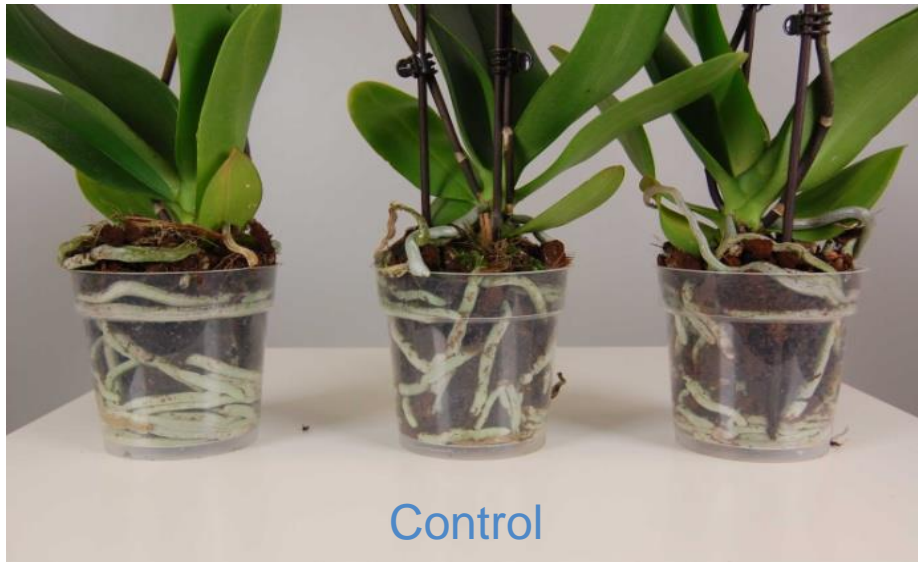
Inside

- Prolongs plant life in the shop by up to 30%
- Reduces plant waste in the total supply chain by up to 10%
- Improved shelf presentation by healthy and fresh looking plants
- 100% compostable so no leftover waste



Chrysal Aqua Pad - Test Results

- At start plants were totally saturated with water
- Added Ø 8 cm Aqua Pad + 70 ml water
- Results after two weeks retail with Chrysal Aqua Pad
 - Still humid substrate
 - No dehydration in roots visible
 - No root problems of too much water





Inside

Product Range

- Size pot size: 6-14 cm
- Shape round /square/ rectangle
- Water capacity 350 g/m² / 800 g/m²
- Layers single / wrapped
- Packaging loose / stacked
- Application Manual - all range possible
Automatic - only round shaped /
unwrapped / stacked

Chrystal Co-Creation

The possibilities with Flier Systems and Modiform:



- Suited for many types of trays and various types of Aqua Pads
- Several placing patterns possible
- Capacity up to 500 tray per hour
- Dispenser can hold up to 1,000 Aqua Pads



- Future possibility of supplying customized trays ready-filled with Aqua Pads
- Possibility of large amounts Modiform trays ready-filled with Aqua Pads by using the Aqua Pad dispenser



On YouTube:



Chrystal Aqua Pad in Tray
van ChrystalFlowerCare
93 weergaven

When does a plant produce Ethylene?

- Normal aging process
- Under stressful circumstances $>\pm$ 5 days dark
- External circumstances
 - Ripening fruit
 - Exhaust gasses /smoke
 - Inside truck (history transport)

Concentration
1 ppm

Temperature
 $20^{\circ}\text{C} > 1 \text{ ppm}$
 $10^{\circ}\text{C} > 10 \text{ ppm}$



Genetic sensitivity



Time
(6-12 hours)

50 kg ripening fruit
Gives 1-5 ppm
ethylene
In not proper
ventilated room

Under poor light
conditions (during
growth) plants are
more ethylene
sensitive

Chrysal Ethylene Buster

Phalaenopsis 'Yellow MT Amadeus'

7 days transport phase (dark, 20°C)



Control



Chrysal Ethylene Buster

Reduced flower bud abscission
→ More flowers!

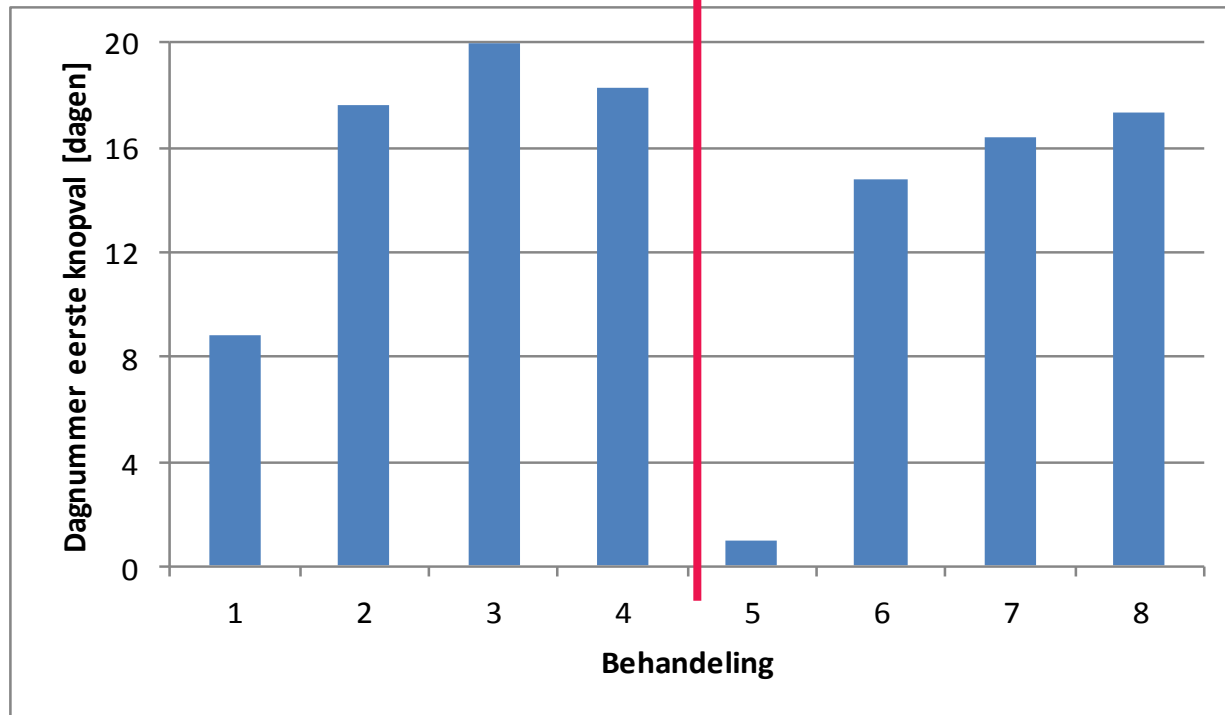
Chrysal Ethylene Buster

Test set up Phalaenopsis- Chrysal Ethylene Buster- Ethylene:

1 & 5 Control

2-4 & 6-8 Chrysal Ethylene Buster treated

Ethylene treated



Chrysal Ethylene Buster

Results:

- within 9 days first bud abortion is visible without ethylene
- within 2 days first bud abortion is visible with ethylene
- Chrysal Ethylene Buster can prevent
 - bud abortion when ethylene is near
 - elongate the period till first bud abortion is visible.

Test with ethylene: 7 days after treatment



Chrysal Ethylene Buster

Test set up Phalaenopsis

Chrysal Ethylene Buster-Cold period- Transporttime:

- A short cold period during transport (<4 hr) is responsible for bud abortion in retail.
- Six days of transport causes more plants with bud abortion than three days of transport (the VBN protocol is 7 days of transport).
- After 3 days in retail the first serious bud abortion was seen in the treatment with a cold period and 6 days transport.
- Chrysal Ethylene Buster can prevent bud abortion caused by a cold period and/or dark transport.

Chrysal Ethylene Buster

No Ethylene Buster



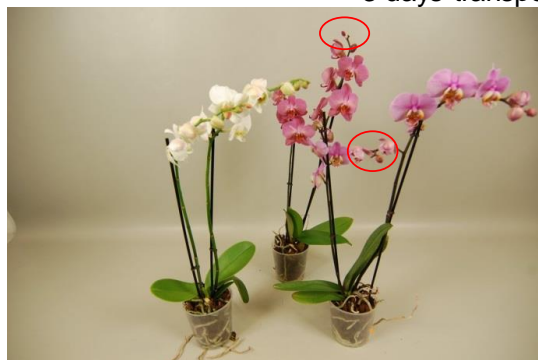
Ethylene Buster



3 days transport, incl. cold period



3 days transport, no cold period



6 days transport, incl. cold period

Where to be used?

- To be used by professional users
- Colombia, USA, Netherlands, UK, Belgium, Germany (due to registration)
- Tablets in airtight rooms
(e.g. coolers, truck trailers, containers)
- Sachets in boxes (USA)



R&D Developments

- Interactive relation and cooperation with TC, retailers and growers
- Focus on:
 - Dehydration
 - Ethylene damage
 - Shelf life

New ideas or test set up, please contact:

Josien van Spingelen

06-46 21 70 13

Jeanet de Zeeuw

06-21 27 64 35



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