

The Beauty of Chrysal

Post Harvest Treatments for NI Cut Flower Crops

Greenmount Campus 29.07.2014



CHRYSAL
PREMIUM FLOWER & PLANT CARE


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Agenda

- Introduction to Chrysal
- Crop specific treatments
- New Product Development
- Shelf Life and Disposal

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Chrysal International, Naarden Holland




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Introduction Chrysal

- Chrysal is the founder of our industry, inventing Cut Flower food in 1949
- Supplying a complete range of products for commercial and consumer use
- World market leader in flower care with an 80% market share
- Annual turnover of € 47 million
- Worldwide distribution in 40 Countries & over 60,000 outlets
- Offices in NL, UK, USA, Germany, France, Sweden, China & Japan, Colombia, Kenya and Ecuador
- 'State of the Art' Production facilities in Naarden (NL), Colombia, Kenya, Sweden and Japan
- Chrysal has helped developed the flower industry through it's Product Quality, Innovation & Service
- Instrumental in the introduction of the '**Consumer Guarantee**' and '**Total Chain Control**' concepts


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World-wide distribution



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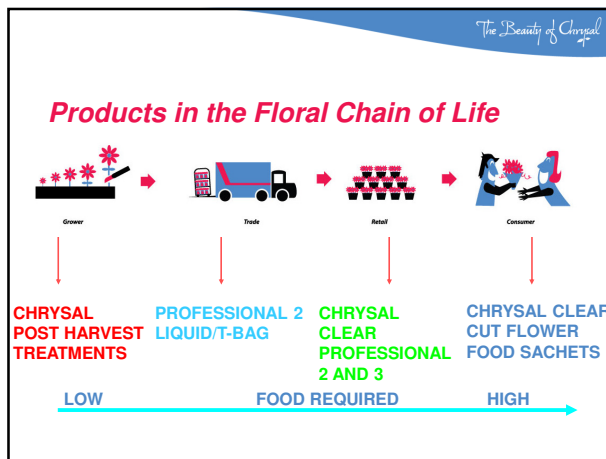
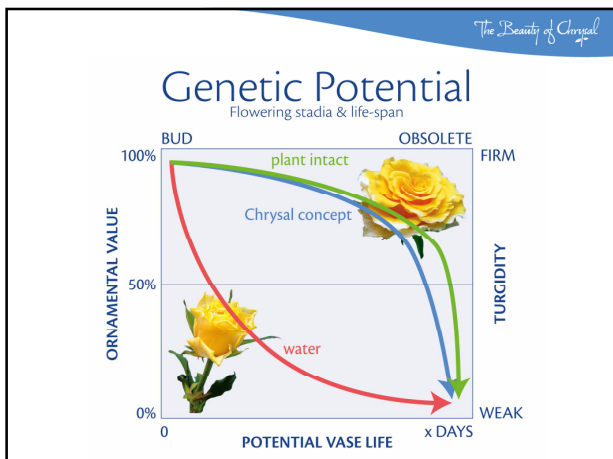
Production



Mixing tanks

Seal & fill machine

Bottle filling machine



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Quality perception: Post-harvest treatments

- AVB
- AVB Booster
- BVB
- BVB Plus
- CVBN
- Ethylene Buster tablets
- Ethylene Buster sachets
- OVB
- RVB
- RVB Clear Intensive
- RVB Clear Intensive SW
- SVB

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Quality perception: Professional products

- Professional 1
- Professional 2 Classic
- Professional 2 Concentrated
- Professional 2 Concentrated Soft Water
- Professional 3
- Professional 3 powder
- Professional Glory
- Professional Cleaner
- Professional 2 T-bag
- Premium T-bag
- L&A T-bag

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Quality perception: Consumer products

- [Universal liquid stick](#)
- [Rose liquid stick](#)
- [Fairtrade liquid stick](#)
- [Universal liquid consumer bottle](#)
- [Universal powder sachet](#)
- [Rose powder sachet](#)
- [L&A powder sachet](#)
- [Bulb powder sachet](#)
- [Tulip powder sachet](#)
- [Narcissus powder sachet](#)
- [Chrysanthemum powder sachet](#)
- [Syringa powder sachet](#)
- [Bouvardia powder sachet](#)



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Quality perception: Special Care & Dosing Devices

- [Leafshine aerosol](#)
- [Leafshine Concentrate](#)
- [Dosing Unit](#)
- [Hand pump](#)



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Scented Stocks

- Ethylene Sensitive but yet traditionally not treated
- Use CVBN at the growers
- Use CVBN as transport solution
- Lily and Alstroemeria flower food



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Oriental Lily (and Longiflorum)

- Home grown less prone to stress and Lily Conditioner is worth a try
- Otherwise AVB, + BVB (2ml/litre AVB+ 0.15 ml BVB/litre)
- L&A T-bag as transport solution
- L & A food for consumer



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Asiatic Lily

- Very ethylene sensitive
- Use AVB + BVB as post harvest
- Use L&A T-bag for transport
- Lily & Alstroemeria food for consumer



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Sweet William

- Often treated as a commodity crop but deserves better
- Ethylene sensitive
- Usually CVBN at grower
- However, AVB recommended
- Prof 2 as transit solution



Peony

- Ethylene sensitive
- AVB recommended as post harvest treatment
- For longer term storage re-hydration prior to storage may help but Botrytis is usually the main problem

**Chrysanthemum**

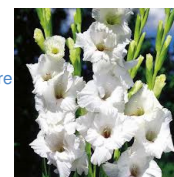
- OVB as post harvest treatment
- Professional 2 as transport solution
- Chrysanthemum food or Universal

**Alstroemeria**

- AVB at 1ml/litre and BVB at 0.15ml/litre
- Leaf yellowing is the major problem

**Gladioli**

- Often harvested dry, stored dry and sent to customer dry.
- However, sending to customer or store in a little Professional 2 will help to prevent "crooking"
- Most commonly just 1-2 litres of solution into store will prevent too much continued growth and the shepherd's crook
- Bulb food for the consumer phase

**Antirrhinum**

- Ethylene sensitive but not usually treated
- AVB followed by CVBN or RVB Clear
- Prof 2 as transit solution
- Universal food for consumer

**China Aster**

- Take your pick;
- CVBN
- OVB
- Or RVB Clear
- Again usually a dirty crop so might be tempted to use CVBN.
- Prof 2 as transit solution to customer



Tulip

- BVB+ at a rate of 1ml/litre as a post harvest solution
- Prevents stretching
- Maintains leaf quality
- If using in mixed spring bouquets with narcissi and hyacinths for example – use the narcissus food, otherwise tulip food or bulb food



Sunflower

- Traditionally known as a very polluting crop
- Can have water uptake issues due to callous formation as a reaction to wounding
- Use CVBN as a post harvest solution
- Universal feed



Ornamental Kale

- CVBN, CVBN and CVBN!!!!
- Prof 2 as transit solution
- Very dirty polluting crop – pollutes mixed bouquets
- Leaves also yellow and have tried BVB without much success so far



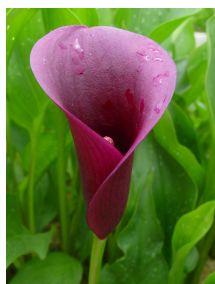
Anemone

- BVB
- Prof 2 T-bag
- Bulb food
- Most often used in mixed bouquets



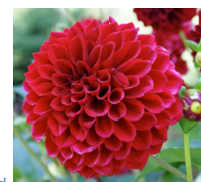
Calla

- CVBN or Prof 2 Liquid
- Prof 2 as transit solution
- Bulb food for consumer



Dahlia

- The "Holy Grail" for the supermarkets!
- Ethylene sensitive and leaves yellow
- Secondary bud failure
- AVB followed by CVBN, or RVB Clear
- Prof 2 as transit
- Bulb food
- However, Lily conditioner as post harvest and transit solution has worked well



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Sweet Pea

- Very short vase life unless Treated with AVB
- Has responded positively to Ethylene Buster in trials – see new product development



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New Product Development

- Clean Touch
- Ethylene Buster
- Lily Conditioner

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Clean Touch

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General

- When working with flowers buckets, tools and workspaces easily get dirty. It is a good practice to clean and disinfect directly after use.
- 95% of buckets are not clean
- Placing flowers in hygienically clean buckets improves vase life!



Chrysal introduces a new cleaning & disinfectant line: Chrysal Clean Touch

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Chrysal Clean Touch

- New line of cleaning products
 - ▀ Kills bacteria
 - ▀ Not harmful to flowers
 - ▀ Easy to use -> no rinsing required



Ready-to-use Spray

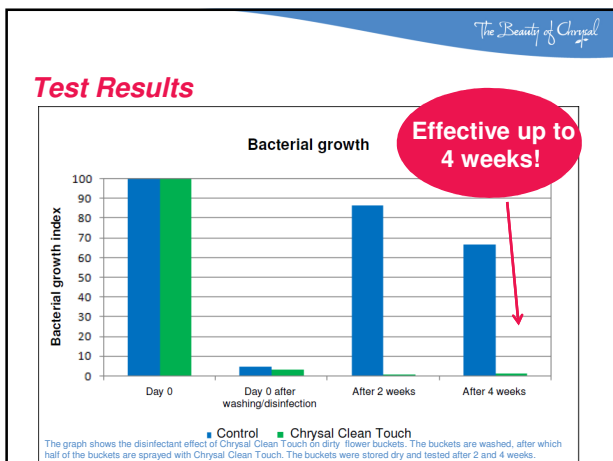
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Chrysal Clean Touch

- ▀ Odourless
- ▀ Effective against bacteria up to 4 weeks*
- ▀ Reduces flower wastage
- ▀ Reduces cleaning labour



* see test results



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Ethylene Buster

Product information – Post Harvest Treatment Ethylene Buster® tablets

General

- Post harvest product for ethylene sensitive flowers (e.g. Cymbidium, Dendrobium, Dianthus, Lilium), tulip bulbs and pot plants (e.g. Achimenes, Campanula, Miltonia, Dendrobium, Ficus benjamina, Kalanchoe, Phalaenopsis, Plectranthus, Schlumbergera, Streptocarpus).
- Available in a yellow-green tablet form.
- Silver free product, based on the active ingredient 1-MCP (1-Methylcyclopropene).
- Contact your sales manager for availability in your country.

Effects

- Blocks ethylene receptors, thus protecting against internally as well as externally produced ethylene.
- Prolongs vase life of cut flowers, display life of tulip bulbs and shelf life of pot plants.
- Improves bud opening.
- Prevents premature shrinking and dropping of buds, leaves and blooms.

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Ethylene Buster

Vase life of Dianthus 'Delphi'

Treatment: none
Total vase life: 9 days
Photo taken: day 12

Treatment: Ethylene Buster® tablets
Total vase life: 12 days
Photo taken: day 12

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Ethylene Buster

Phalaenopsis

5 days transport simulation – Photo taken day 7 in store

Control

Ethylene Buster® tablets

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Ethylene Buster – Sweet Peas

HADLOW COLLEGE – November 2913 – Student project Untreated Control v 1-MCP (Chrysal Buster)
Photographs taken 10 days after treatment

Control Day 10

1-MCP Day 10

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Chrysal Lily Conditioner

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Lily Conditioner

Combination of low level of BVB (0.15ml/l) with Chrysal Professional 3 (10ml/l).

Effects

- Prevents leaf yellowing
- Corrects hormonal balance
- Improves vase life
- Stimulates bud and bloom opening
- Larger flowers which open better
- Leaves remain turgid and green



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Lily conditioner – Test results



Day 13 - Water



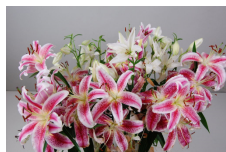
Day 13 – Lily Conditioner

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Lily Conditioner – Test results



Day 13 - Water



Day 13 – Lily Conditioner

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7. Dahlias/Peonies

- Trials with lily conditioning treatment



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AVB Booster

Product information — Pre-treatment Chrysal AVB Booster

General

- Post-harvest product for all ethylene sensitive flowers on which Chrysal AVB is used.
- Can only be used in combination with Chrysal AVB.
- Available in 1 L bottles.

Effects

- For ethylene sensitive flowers.
- Balances the pH of all types of water.
- Prolongs the usage period of the ready-to-use Chrysal AVB solution.
- Stimulates water uptake and thus silver uptake in older Chrysal AVB solutions.
- Optimises vase life and the ornamental quality of flowers.



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AVB Booster – how to use

Recommendations

- Store under cool and dark conditions, preferably between 5°C and 25°C.
- Shelf life: 18 months in sealed packaging and stored under the right conditions.
- pH of the ready-to-use solution: In virtually all waters between 3.5 – 5.5 (depending on the alkalinity of the water).
- Dosage: 0.5 ml per litre of water.
- Chrysal AVB Booster must be added to the Chrysal AVB ready-to-use solution. So, first prepare the AVB ready-to-use solution, then add the AVB Booster and stir well.
- The solution can be used up to 1 week.
- Do not mix residual solutions with freshly made ones.
- Residual solutions (AVB + AVB Booster) should be neutralised before discharge.

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Shelf Life of Products

SHELF LIFE CHRYSAI PRODUCTS

The shelf life as given in the table below applies when product is stored in a closed packaging, at 20°C, a relative humidity of less than 80% and no direct sunlight.

General rules:
 * A maximum shelf life of 36 months is used.
 * Chrysal Clear formulations have a shelf life of 18 months.
 * The shelf life of Chrysal Narcissus is only 6 months.
 * The shelf life of Chrysal Batine is 6 months at room temperature and 18 months in a cooler.

Code	Name	Shelf life (months)
2250	Chrysal Leaflime concentrate	36
1021	Chrysal Professional spray	36
2111	Chrysal Clear Narcissus	6
2117	Chrysal Clear Mimosa	18
2317	Chrysal Clear Butsha Japan	18
2322	Chrysal Clear Universal Japan	18
2349	Chrysal Clear Professional 2 T-bag Japan	18
2053	Chrysal Clear Universal	18
2054	Chrysal Clear Lyum & Astromena	18
2055	Chrysal Clear Rose	18
2059	Chrysal Clear Bouvardia * Chrysal Clear Chrysanthemum	18
2120	Chrysal Clear Spring	18
2171	Chrysal Clear Butoshis	18
2172	Chrysal Clear Tulips	18
2176	Chrysal Clear Professional Lyum & Astromena T-bag	18
2178	Chrysal Clear Professional T-bag	18
2181	Chrysal Clear Professional Butoshis T-bag	18
2182	Chrysal Clear Professional Persimmon T-bag	18
2413	Chrysal Professional Cleaner - 10 ml/l	36
2414	Chrysal Professional Cleaner - 5 ml/l	36
2426	Chrysal Clear Rose Pro hydration	18
2428	Chrysal Clear Professional 1 liquid	18
2427	Chrysal Clear Professional 2 liquid	18
2428	Chrysal Clear Professional 3 liquid	18
2429	Chrysal Clear Professional 2 liquid Japan	18
2434	Chrysal Clear liquid Japan	18
2440	Chrysal Clear Universal liquid bottle	18
2443	Chrysal Clear SW Professional 2 liquid	18

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Disposal of Products

- All dilute products can be disposed of in mains sewerage with the exception of AVB (this contains silver thio sulphate)
- Any waste solution must be pre-treated for a minimum of 5 days to deposit the silver
- Solution can be used up to 1 week.
- Do not mix residual solutions with freshly made ones.
- Residual solutions should be neutralised before discharge. Please use the neutralisation products Chrysal Teciline and Chrysal Flocculine supplied with the AVB for this. The deposit containing the silver should be treated and disposed off as chemical waste.

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Invitation to the group to visit Chrysal International, Naarden

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Product Suppliers in Northern Ireland

- Products can be supplied through either
 - Kelly Flowers
25 Ferguson Drive,
Knockmore Hill Industrial Estate, Lisburn, Co Antrim, BT28 2EX
Tel: 028 9266 4406
 - Or
 - J. Horner & Co,
Unit 3 Balmoral Fruit Market,
Balmoral Road,
Belfast, BT12 6QA
Tel: 028 9066 3397

However, you may need to ask them to order the Professional Products

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Chrysal Contact Details

- Chrysal UK,
Ardsley Mills,
Bradford Road,
East Ardsley,
Leeds
West Yorkshire
WF3 2DW
Tel: 0113 307 4050
- Claire Streit (Technical Consultant) – mobile: 07773 065435

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Thank you very much for your attention