Effect of the adjuvant Elasto G5 on the performance of chlormequat in poinsettia

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Clarification

The adjuvant Elasto G5 is available in the Netherlands since 2006. Because of its performance and quite crop-friendly character, growers and plant protection specialists in other countries have an interest as well. Registrations and distribution networks are under development. In advance we want to make available test data. A summary of the data with the growth regulator daminozide in ornamentals can be downloaded. This document deals with reducing the use of chlormequat in poinsetttia by addition of Elasto G5. These trials have been conducted in the past. The results are still relevant, particularly for those in other countries not yet familiar with the adjuvant Elasto G5.

Question to be answered

The independent contract research organisation Delphy carried out the trials. Aim was to investigate whether the use of Elasto G5 can result in a much lower number of chlormequat treatments and thus totally a lower amount of chlormequat. Elasto is a polyglycerol-based adjuvant, which improves the wetting of leaves and enhances the foliar uptake of active ingredients like chlormequat.

Trial 1

Location: Commercial grower in Poeldijk, The Netherlands
Poinsettia cv.: Euro Glory
Start: Plants potted in week 33.
Chlormequat: CeCeCe (750 g a.i./L)
Application period growth regulator: from 13 September to 2 November, 2005.
Application rate chlormequat: 100 ml product/100 Litres.
Water volume: 500-600 L/ha
Concentration of Elasto G5: 0.25% (2.5 ml/litre).
Frequency treatments: 5x per week (chlormequat alone) and 1x per week (chlormequat without or with Elasto G5)
Experimental design: four replications and 77 plants in each plot

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Poinsettia at the start and the end of the test period; Delphy

RESULTS

The length of the main branch and the number of flowering branches were determined. Lowering the weekly treatment frequency from 5 to 1 resulted in longer branches (Figure 1). The average length of the main branch increased from 24.3 cm to 27 cm in the chlormequat-alone treatments. A weekly treatment frequency of 1 plus inclusion of Elasto G5 resulted in an average length of 25.4 cm.

The combination of chlormequat plus Elasto G5 was applied seven times over a period of seven weeks. There were no phytotoxicity symptoms and there was no visible adjuvant residue on the leaves. Use of Elasto G5 did not change the number of flowering branches.

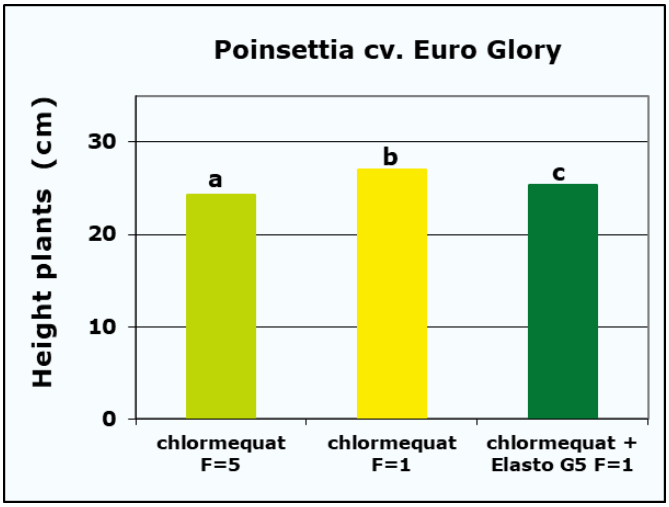

Figure 1. Length of the main branch of poinsettia after regulation by chlormequat at a frequency of 5x (F=5) and 1x per week (F=1). Elasto G5 is tested at 1x per week. Column labels indicate statistical significance.

CONCLUSION

When applied once per week during seven weeks, Elasto G5 had a significant positive influence on the performance of chlormequat.

PERSPECTIVE FOR HORTICULTURAL PRACTICE BASED ON TRIAL 1

We estimate that addition of Elasto G5 to chlormequat enables the grower to reduce the weekly frequence of treatments from 5 to 2 during the period of chlormequat applications. This will reduce the labour time and the amount of required chlormequat by 60%. Trial 2 (see next page) was started to verify this perspective.

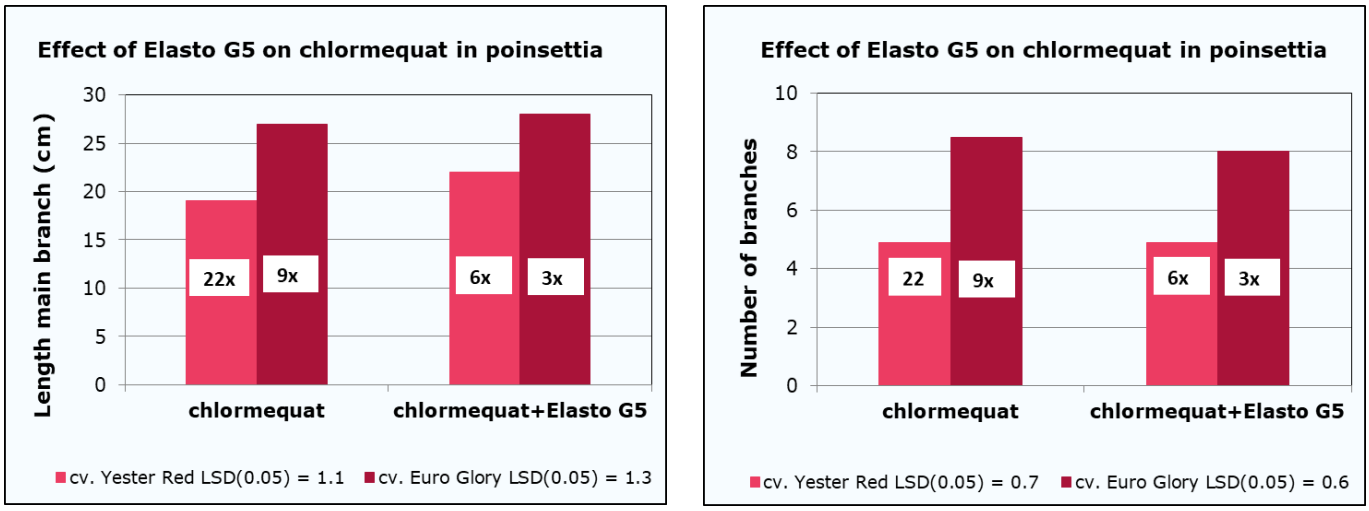

Figure 2. Left: length of main branch. Right: number of branches. The number of treatments is expressed in the columns.

Trial 2

Locations: two commercial growers in Maasland, The Netherlands
Poinsettia cv.:
Grower 1 – cv. Yester Red
Grower 2 – cv. Euro Glory
Start (2007):
cv. Yester Red – potted in week 35
cv. Euro Glory – potted in week 28;
Chlormequat: CeCeCe (750 g. a.i./L)
Application rate: 100 ml CeCeCe/100 Litres
Watervolume: 700-800 L/ha
Concentration Elasto G5: 0.25% (2.5 ml/L)
Experimental design: an area of the commercial growth was marked for the test. The weekly frequency of chlormequat treatments in the commercial growth was 3x per week. The frequency of the chlormequat plus Elasto G5 treatments in the test area was 1x per week.
Frequency treatments:
cv. Yester Red – 22 treatments in the professional growth area from week 40 up to week 46. Six treatments in the test area.
cv. Euro Glory – 9 treatments in the professional growth area from week 39 up to week 42. Three treatments in the test area.

RESULTS

The effects of the treatments were monitored in week 47. Twenty plants out of the commercial growth area and twenty plants out of the test area were monitored on length of the main branch and the number of branches with a length that exceeds the half length of the main branch.

Yester Red cv.: the application of chlormequat plus Elasto G5 at one time per week resulted in a 2.6 cm longer main branch (Figure 2); the number of branches was not affected.
Euro Glory cv.: the application of chlormequat plus Elasto G5 at one time per week gave the same results as the the application of chlormequat alone at three times per week. There were no phytotoxicity symptoms in this trial as well.

CONCLUSION

The tests (Trial 2) with the cvs. Yester Red and Euro Glory indicate that addition of the adjuvant Elasto G5 can result in at least 60 to 70% less labour time and amount of chlormequat as well. The results with Euro Glory in Trial 1 indicate that this percentage can be even higher.

Poinsettia cv. Yester Red; SURfaPLUS

Poinsettia cv. Euro Glory; SURfaPLUS

Availability Elasto G5 outside NL

In Denmark via Horticoop Scandinavia.
In Germany and the United Kingdom: registrations are underway.
In the USA: partner will be announced.
More information from SURfaPLUS on Elasto G5.

Data ownership

SURfaPLUS Trading B.V. is the owner of the published data.

Address:
Binnenhaven 1
6709 PD Wageningen
The Netherlands
Tel. +31 0317-451217
E-mail h.deruiter@surfaplus.com;

About SURfaPLUS

SURfaPLUS is specialised in the development and sale of adjuvants for agrochemicals. Each year we invest in new trials to broaden the applications of our products and to develop new products as well. Adjuvants can be used to enhance the performance of growth regulators, insecticides, fungicides, herbicides and foliar nutrients. See also www.surfaplus.com.

IMPORTANT

When using for the first time, we recommend to apply the adjuvant Elasto G5 at a small scale.

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