

ispitivanim godinama značajno veći u usporedbi s kontrolom. Prve su godine biljke prskane s 2000 mg l/ l imale 32,4% više pupova u usporedbi s kontrolom, a u drugoj 35,7% (graf 2 i 3). Vrsta *Aster novae-angliae* imala je u prve dvije godine statistički značajno više pupova uz tretiranje daminozidom u usporedbi s kontrolom (tablica 1). Whipker and McCall (2000) također su uz primjenu daminozida dobili veći broj pupova kod suncokreta uzgajanog kao lončanica. Kod vrste *Aster novi belgii* broj cvatnih glavica bio je značajno manji uz tretiranje koncentracijom daminozida od 4000 mg/l u odnosu na kontrolu; u prvoj godini 45%, a u drugoj godini 59,7% manje cvatova. Vrsta *Aster novae-angliae* nije reagirala na primjenu daminozida smanjenjem broja cvatnih glavica ni u jednoj od ispitivanih godina (tablica 1).

Literatura

1. Clough, Emily A., and A.C. Cameron, R.D. Heins and W.H. Carlson. 2001. Growth and Development of *Oenothera fruticosa* is Influenced by Vernalisation Duration, Photoperiod, Forcing Temperature and Plant Growth Regulators. *J.Amer. Soc. Hort. Sci.* 126(3):269-274.
2. Gibson, J.L. and B.E. Whipker. 1999. The effect of B-Nine, Bonzi and Sumagic on the Growth of Ornamental Cabbage and Kale. *Snare Search Conference.* 44:281-283.
3. Tayama, H.K., and S. A. Carver. 1992. residual Efficacy of Uniconazole and Daminozide on Potted -Bright Golden Anne- Chrysanthemum. *HortScience.* 27(2):124-125.
4. Whipker, B. E., R.T. Eddy, Farah, Heraux, A. Hammer. 1995. Chemical Growth Retardants for Height Control of Pot Asters. *HortScience* 30(6):1309.
5. Whipker B. E., and I. McCall. 2000. Response of Poted Sunflower cultivars to Daminozide foliar sprays. And Paclobutrazol Drenches. *HortTehnology* 10(1):209-211.
6. Wicki-Fredl, P., 1989. *Mal eine Hauptkultur, Gb+Gw,* 89 (31):1494-1496.
7. Zeevaart, J. A. D., 1964. Effect of Growth Retardant CCC in Floral Initiation and Growth in *Pharbitis nil*. *Plant Physiology.* 39 (3):402-408



AGROFARMACIJA, d.o.o., Valelunga 28, HR-52100 Pula
Tel:++385 (052) 517-532, Fax:++ 385 (052)383-590

- proizvodnja presadnica, povrća, ukrasnog bilja, sezonskog cvijeća, krizantema i božićnih zvijezda,
 - projektiranje i uređenje okoliša
 - postavljanje travnog tepiha
 - instaliranje sustava za zalijevanje
- Posjetite Nas u AGROFARMACIJI nudimo Vam veliki izbor sobnih i vanjskih biljaka, grmova, stabala i vaza

NEKA VAŠE CVIJEĆE BUDE ODRAZ VAŠE SREĆE

Ines Vrsek¹, Sanja Moric¹, Marija Bujan²

18th International Conference on Plant Growth Substances
20 - 24 September 2004. Canberra, Australia
professional paper

Effect of Growth Retardant to Flowering Perennials Genus Aster in Cultivation as Pot Plant

Introduction

Aster novi-belgii and *Aster novae-angliae* (Asteraceae) are perennials of North American origin which find their place in the world's market as varieties for flowerbeds, as cut flowers, and lately also as pot plant. Many cultivars that are on the market are often too high to be grown in pots, so it is necessary to reduce vegetative growth of many florist's cultivated varieties and sorts, not only to control height, but also because of better ramification and induction of flowering, which increases their aesthetic value (Zeevaart, 1964; Gibson and Whipker, 1999; Wicki - Freidl, 1989; Clough et al., 2001). The goal of the research in this paper was to determine reaction of species *Aster novi-belgii* 'Mary Ballard' and *Aster novae-angliae* 'September Ruby' to one-time application of the growth retardant daminozide (Alar 85), so that they can be grown as pot plant in conditions of open field.

Materials and methods

The experiment was conducted during three vegetational seasons in the garden of Department of Ornamental Plants, Landscape Architecture and History of Garden Art in Zagreb (lat. 45°50'N, long. 16°0'E) during summer months and early fall (June - September). Peak cuttings, about 10 cm long, were rooted into cold bed and after that planted individually into plastic pots 300 ml in volume, in mixture of loamy soil and peat in volume ratio 3:1. The pots were positioned randomly, 90 plants/m². Plants were pinched ten days after the planting; three weeks after the planting, the plants' were sprayed with daminozide in concentration of 2000 or 4000 mg/l, and some plants were left untreated, as a control group. During the experiment, the characteristics of plant height measured from the pot edge to the highest part of the plant, and the plant diameter measured on the widest part of the plant were monitored. Also, the number of buds and flower heads was monitored.

The experiment ended by the end of September when the plants were at their best for

¹ Ines Vrsek, Sanja Moric, Department of Ornamental Plants, Landscape Architecture and History of Garden Art, Faculty of Agriculture University of Zagreb, Croatia

² Marija Bujan, Department of Chemistry, Faculty of Agriculture University of Zagreb, Croatia

the market.

The data obtained were processed by variant analysis (ANOVA) for each year of the research.

Results and discussion

The application of 4000 mg/l of daminozide on the *Aster novi-belgii* variety has influenced the decrease in plant height for 10% compared to control group during the third year of the experiment. For the *Aster novae-angliae* variety there is a significant difference also achieved by higher concentration of daminozide, but only during the first year of the experiment. In the experiment on the *Aster novi-belgii* variety, the authors Whipker et al. (1995) obtained 29% shorter plants with 5000 mg/l of daminozide. Daminozide didn't have any significant influence on the plant diameter in any of the examined varieties, although the other authors (Whipker et al., 1995; Tayama and Carver, 1992) achieved decrease in plant diameter in some ornamental varieties by using growth retardants.

The number of buds in the *Aster novi-belgii* variety with the use of growth retardants was significantly larger compared to control group for each year it was examined. During the first year the plants that were sprayed with 2000 mg/l had 32.4% more buds compared to control group, while during the second 35.7%. The *Aster novae-angliae* variety had during the first two years statistically far more buds with daminozide compared to control group. Whipker and McCall (2000) got a larger number of buds in sunflower grown as a pot flower also with the use of daminozide. The *Aster novi-belgii* variety had significantly less flower heads with 4000 mg/l daminozide compared to control group; during the first year 45%, and during second 57.7% less flowers. The *Aster novae-angliae* didn't react to the use of daminozide by decrease in the number of flower heads during any of the years the experiment was conducted.

References

1. Clough, Emily A., and A.C. Cameron, R.D. Heins and W.H. Carlson. 2001. Growth and Development of *Oenothera fruticosa* is Influenced by Vernalisation Duration, Photoperiod, Forcing Temperature and Plant Growth Regulators. *J.Amer. Soc. Hort. Sci.* 126(3):269-274.
2. Gibson, J.L. and B.E. Whipker. 1999. The effect of B-Nine, Bonzi and Sumagic on the Growth of Ornamental Cabbage and Kale. *Snare Search Conference.* 44:281-283.
3. Tayama, H.K., and S. A. Carver. 1992. residual Efficacy of Uniconazole and Daminozide on Potted 'Bright Golden Anne' *Chrysanthemum*. *HortScience.* 27(2):124-125.
4. Whipker, B. E., R.T. Eddy, Farah, Heraux, A. Hammer. 1995. Chemical Growth Retardants for Height Control of Pot Asters. *HortScience* 30(6):1309.
5. Whipker B. E., and I. McCall. 2000. Response of Poted Sunflower cultivars to Daminozide foliar sprays. And Paclobutrazol Drenches. *HortTechnology* 10(1):209-211.
6. Wicki-Fredl, P., 1989. Mal eine Hauptkultur, Gb+Gw, 89 (31):1494-1496.
7. Zeevaart, J. A. D., 1964. Effect of Growth Retardant CCC in Floral Initiation and Growth in *Pharbitis nil*. *Plant Physiology.* 39 (3):402-408

Vesna Čuljat¹

pregledni rad

POINSETTIA, BOŽIĆNA ZVIJEZDA, MLJEČIKA KRASNA BOTANIČKO IME: EUPHORBIA PULCHERRIMA PORODICA: EUPHORBIACEAE

Poinsettia je izvorno samonikla biljka iz Meksika, listopadni je grm koji naraste i do 4 m. Dobila je ime po J. R. Poinsette koji ju je prvi put, davne 1883. godine donio iz Meksika u SAD.

"Božićna zvijezda" je biljka kratkog dana pa je osnovni preduvjet da bi zametnula cvjetove skraćene dnevne svjetlosti na manje od 10 sati dnevno u trajanju oko 10 tjedana prije pojave prvih cvjetova. Uobičajeno vrijeme cvjetanja je mjesec prosinac, ali primjenom odgovarajućeg trajanja svjetlosti i tame može se planirati vrijeme cvatnje u bilo koje godišnje doba. Žuti i neugledni cvjetići razvijaju se na vrhu stapke i okruženi su crvenim pricvetnim listovima (braktejama) koji predstavljaju pravi ukras biljke.

Davno se ova biljka prodavala kao rezano cvijeće. Šezdesetih godina počelo se s upotrebom sredstva za ograničavanje rasta biljke u visinu (CYCOCELL). Listovi i cvjetovi ostali su nepromijenjeni, a skratio se razmak između listova (internodia), što je rezultiralo smanjenim rastom.

Uzgajivači se intenzivno bave daljnjim razvojem pokušavajući dobiti "Božićnu zvijezdu" boljih osobina i novih boja. Najpoznatiji oplemenjivači su Paul Ecke iz Californie, čija je najpoznatija vrsta "FREEDOM" i Fischer iz Njemačke koji je na tržištu uspio s mnogim zanimljivim varijetetima, između ostalih i "CORTEZ".

UZGOJ

Poinsettia je iznimno zahtjevna i osjetljiva kultura. Da bi se eliminirali potencijalni izvori zaraze potrebno je dezinficirati prostor u koji dolaze.

SADNJA

Ukorijenjene reznice nabavljaju se sredinom srpnja ili početkom kolovoza te sade u plastične lonce promjera 12-14 cm. Za zdrav rast bitan je supstrat koji mora biti kvalitetan i visokovrijedan (ph 5,5-6,5). Ph vrijednost potrebno je kontrolirati jedanput mjesečno.

PRIKRAĆIVANJE

Dekaptacija se obavlja 10-15 dana nakon sadnje tako da se ostavi 4-5 listova.

¹ Vesna Čuljat, dipl. ing. agronomije, voditelj proizvodnje - Zrinjevac d.o.o., Zagreb