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EFFECT OF PREEMERGENT HERBICIDES ON GROWTH OF DWARF NANDINA, ELEAGNUS, ASIATIC JASMINE, BRADFORD PEAR, AND ARIZONA ASH

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Background. Factor® (prodiamine) is a preemergent herbicide registered for use on many ornamental species. However, the list of species that are known to tolerate the use of Factor® in a containerized production system is limited. The objective of these studies was to determine if dwarf nandina, eleagnus, asiatic jasmine, Bradford pear and Arizona ash are tolerant to the use of Factor® for containerized production.

Research Findings. STUDY 1. Plants of dwarf nandina (*Nandina domestica* 'Firepower'), eleagnus (*Eleagnus x ebbingei*), and asiatic jasmine (*Trachelospermum asiaticum*) were obtained from a local nursery and treated with herbicide treatments to determine effects on growth. They were growing in 1 gallon containers using a pine bark and sand mix with slow release fertilizer as per usual local nursery production practices. Plants were treated on 10 August 1995 with either one or two applications of Factor® 65WG at either 1.2, 2.3, or 4.6 lbs./acre (0.75, 1.5, or 3 lbs. active ingredient/acre, respectively). The second application was made on 19 October 1995. Untreated controls and plants treated with a single application of Ronstar® G (2% oxadiazon) at 3 lbs/1000 square feet, an industry standard, were included in the study. Plants were grown under 30% saran shade and watered and fertilized as needed. Plant growth measurements and dry weights were taken on 26 January 1996 for dwarf nandina, 29 January 1996 for eleagnus, and 30 January 1996 for asiatic jasmine.

There was no effect of the herbicide treatments on growth of eleagnus (data not shown). Also, herbicide treatments did not affect shoot dry weight and did not have a deleterious affect on shoot length and root dry weight of asiatic jasmine (data not shown). However, Factor® did affect the growth of dwarf nandina. Plant height and shoot and root dry weight was not affected. But, plant width was decreased by all Factor® treatments when compared to untreated plants (see Figure 1.).

STUDY 2. Plants of Arizona ash (*Fraxinus* sp.) and Bradford pear (*Pyrus calleryana* 'Bradford') potted in 5-gallon containers were treated with herbicide treatments on 25 October 1995 for fall weed control at a local nursery. Treatments included a single application of Factor® 65WG at either 1.2, 1.5, or 2.3 lbs/acre (0.75, 1.0, or 1.5 lbs. active ingredient/acre, respectively) with or without Gallery® 75DF (isoxaben) at 1.0 lb/acre (0.75 lbs. active ingredient/acre). Plants were also treated with Gallery® at the same rate alone. Untreated controls were included. All plants were weed-free when treatments were made. Plants were watered as needed and grown in full sun nursery beds by the local nursery manager. On 16 May 1996, trunk caliper was measured 6 inches above the graft union for Bradford pear and above the soil line for Arizona

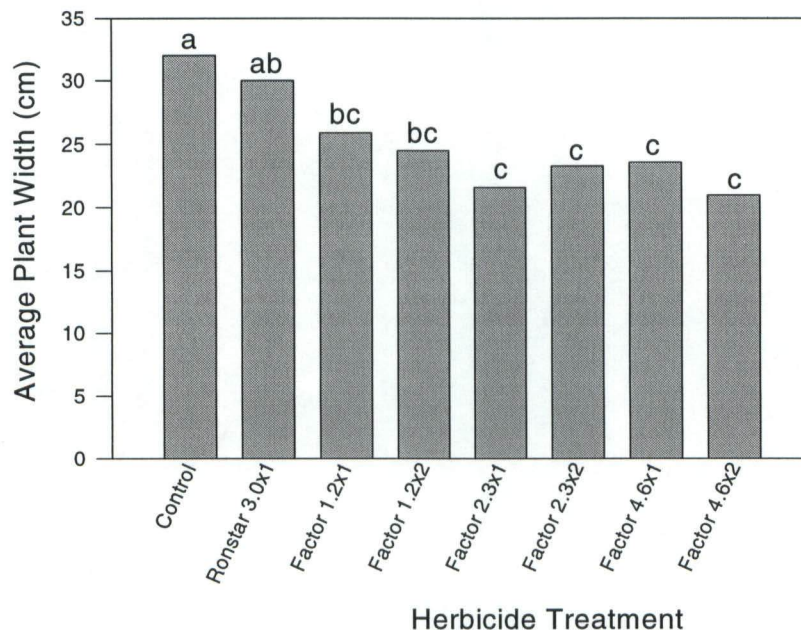
ash.

Very little weed growth occurred in any of the pots including untreated controls. This was likely due to the fact that plants had been potted late in the summer just prior to starting the experiment followed by a cold fall and winter. Therefore, weed counts were not made. When comparing caliper of treated plants with the untreated plants, no differences were seen for either species.

Application. In summary, Factor® can be used for preemergent weed control on a wide array of plants in container production including eleagnus, asiatic jasmine, Bradford pear, and Arizona ash. Standard nandina (*Nandina domestica*) is on the Factor® label, but this herbicide should not be used on the dwarf nandina 'Firepower'. Use on other cultivars of nandina, especially dwarf types should be tested before used for production weed control. Ronstar® G was found to be safe for use on dwarf nandina 'Firepower'.

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Figure 1. Plant width of *Nandina domestica* 'Firepower' treated with herbicide treatments. Different letters above the bars indicate differences between treatments according to Duncan's Multiple Range Test ($p=0.05$).



(Ronstar treatment = lbs. of formulation per 100 square feet x no. of applications)
(Factor treatments = lbs. of formulation per acre x no. of applications)