

New Herbicide Research On Shrub Roses

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Interest in and the demand for shrub roses have increased over the last few years. Breeding and selection programs have resulted in the introduction of many new, cold hardy, cultivars with promising landscape characteristics. Since shrub roses have not normally been incorporated into nursery production systems or used heavily in the landscape, increased production and use of shrub roses poses potential maintenance problems both in the nursery and the landscape. Weed control during production and in landscape plantings will certainly be one of these concerns. Since herbicides are often quite species specific, many questions arise regarding the susceptibility of roses to herbicide injury. To obtain this information, research to determine the herbicide tolerance of hardy shrub roses was initiated in spring 1988.

Materials and Methods

Rooted cuttings of the following rose cultivars were treated with 20 different pre-emergent herbicides or herbicide combinations and two post-emergent herbicides: Hansa, Orange Sunblaze, Scarlet Meidiland, Carefree Beauty, Nearly Wild and Adelaide Hoodless. Plants were divided into two groups and herbicides were applied to one group prior to bud-break and to the other group after they were in full leaf (post bud-break). There were five replications of each rose cultivar per treatment.

Weed count and phytotoxicity data were collected during the 1988 and 1989 growing seasons. The roses were protected during the winter of 1988/1989 with a covering of clear plastic/straw/clear plastic and there were no losses from winter injury. As growth resumed in the spring of 1989, the plants were pruned back to 6-8" in height.

From the time of planting the cultivar, Orange Sunblaze performed very poorly and for this reason was dropped from the study. The poor performance was attributed to the planting stock being in poor condition.

Results and Discussion

Although the results were somewhat mixed, in 1988, herbicide injury was generally greater for the post bud-break herbicide application than for the pre bud-break application. In cases where injury was greater for the pre bud-break application, it appears the injury was more the result of poor weed control and thus reduced growth caused by weed competition, than phytotoxicity. Slightly greater phytotoxicity levels were observed in 1988 for the following herbicide/cultivar combinations: 1) XL 2G - Carefree Beauty; 2) Goal 1.6EC - Hansa, Carefree Beauty and Nearly Wild; 3) Rydex 50WP - Carefree Beauty and Nearly Wild; 4) Mowdown - Carefree Beauty. Apparently, the rose cultivars Carefree Beauty and Nearly Wild are more herbicide-sensitive than the other cultivars tested.

Weed control for all herbicides tested in 1988 was improved compared to the control. In 1988, the best control of both broadleaves and grasses was obtained with Rydex 50WP (4.0 lbs. AIA), Mowdown 4F - Devrinol 50WP (5/6 lbs. AIA), Ronstar 50WP

(3.5 lbs. AIA), Ronstar 50WP (2.0 lbs. AIA), and Rout GS (2/1 lbs. AIA) respectively. Although weed control was good, Rydex 50WP caused an unacceptable amount of injury. Goal 1.6EC (1.0 lb. AIA), Rout GS (2/1 lb. AIA), Mowdown 4F (5.0 lbs. AIA), Snapshot 80DF (3.0 lbs. AIA), and Gallery 75WP (0.75 lbs. AIA) provided good grass control, but fair to poor broadleaf control in 1988. Pennant 5G (4.0 lbs. AIA) provided good grass control and poor broadleaf control in 1988. Devrinol 50WP (6.0 lbs. AIA) provided the poorest weed control in 1988.

In general, herbicide phototoxicity observed in 1989 was less than that observed in 1988.

This may have been caused by the hot, dry conditions that prevailed in 1988. As in 1988, Carefree Beauty and Nearly Wild were more sensitive to herbicide injury than the other cultivars tested. The most phytotoxic herbicide in 1989 was Prowl 4EC (4.0 lbs. AIA).

In 1989, all herbicide treatments again significantly reduced weed numbers compared to the control.

Ronstar 50WP (3.5 lbs. AIA), Ronstar 2% + Devrinol 3% (2/3 lbs. AIA), Snapshot 80DF (3.0 lbs. AIA), OH II (2.0 lbs. AIA), Ronstar 50WP (2.0 lbs. AIA), Goal 1.6EC (1.0 lb. AIA), Gallery 75DF (0.75 lbs. AIA), Mowdown 4F (5.0 lbs. AIA), and Mowdown 4F + Devrinol 50WP (5/6 lbs. AIA) gave excellent to good control of both broadleaves and grasses. Surflan 4AS (3.0 lbs. AIA), Pennant 5G (4.0 lbs. AIA), and XL 2G (3.0 lbs. AIA) provided good grass control but poor control of broadleaf weeds. Although they have generally been quite effective in the past, Rout GS (2.1 lb. AIA) and Ronstar 2G (3.5 lbs. AIA) gave excellent broadleaf control, but only fair control of grasses in 1989. Prowl 4EC (4.0 lbs. AIA) gave the poorest weed control in 1989.

With the exception of the cultivar Orange Sunblaze, growth of the shrub roses tested under container growing conditions was excellent. In 1989, the cultivars Scarlet Meidiland and Carefree Beauty were somewhat defoliated and Adelaide Hoodless was nearly completely defoliated by leaf spot diseases. No defoliation was observed in 1988. There was also a problem with cane borers on the cultivar Hansa in 1989 which was not observed in 1988.

Based on this research it appears that shrub roses are generally quite herbicide tolerant. Better weed control is achieved with pre bud-break herbicide application. This probably results from better herbicide coverage. Based on two years of data, when compared for weed control and phytotoxicity, the best herbicides for pre bud-break use on shrub roses are Ronstar 50WP (3.5 lbs. AIA), OH II (3.0 lbs. AIA), Goal 1.6EC (1.0 lb. AIA), and Rout GS (2/1 lbs. AIA).

The best herbicides for post bud-break use on shrub roses are Ronstar 50WP (3.5 lbs. AIA) and Rout GS (2/1 lbs. AIA). Extreme care must be taken to see that the herbicides are irrigated in immediately following application to wash the herbicides off the plants, or increased injury may result.

The mixed results for efficacy and phytotoxicity observed during this study highlights the importance of continued study of the effectiveness of herbicides over many years. Differences in climate from year to year can have drastic effects on herbicide effectiveness and phytotoxicity.