

Sure Power Turf Herbicide Evaluation

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Introduction

Turfgrass managers have many options for broadleaf and grassy weed control, yet there is a category of turfgrass weeds deemed as “hard-to-control.” Examples include ground ivy (*Glechoma hederacea*), thistle (various species), yellow nutsedge (*Cyperus esculentus*), and wild violet (*Viola sororia*). Effective chemical control of this group is limited and cultural controls have minimal effect due to these weeds’ ability to persist in growing conditions unfavorable towards turfgrass.

The objective of this trial was to evaluate the effects of different rates of a new herbicide from NuFarm, Sure Power, on wild violet and thistle compared with a non-treated control and two industry standard herbicides in Iowa. Sure Power is a four-way formulation of 2,4-D, triclopyr, fluroxypyr, and flumioxazin. A secondary objective was to evaluate turfgrass injury (chlorosis), if present, as the trial progressed.

Materials and Methods

This trial was conducted at the Iowa State University Horticulture Research Station, Ames, Iowa, on a mature stand of Kentucky bluegrass (*Poa pratensis*) with adequate and uniform weed pressure. Turf was cut twice/week at 3 in. using a riding rotary mower. Irrigation was applied as necessary to facilitate optimal growing conditions. Fertility rate was 0.5 lb N/M/month using a granular slow release fertilizer. Treatments, rates, and timings for this trial are presented in Table 1. Two locations were used for this trial—one

for thistle and one for wild violet. Experimental units were 5 ft x 10 ft. Treatments were applied using a CO₂-pressurized backpack sprayer with TeeJet 8004XR nozzles calibrated to apply two gallons water carrier/1,000 ft². Treatments were applied August 29 and arranged as a randomized complete block design with four replications. Turfgrass tolerance was visually evaluated at 3, 7, 14, and 28 days after application. Weed control was visually evaluated at 3, 7, 14, 28, 42, and 56 days after application. Visual turfgrass quality was rated as necessary (data not presented).

Results and Discussion

Turf tolerance to the herbicides was only significant at 7 days after treatment (DAT) in the thistle location (Table 2) and at 7 DAT and 28 DAT in the violet location (Table 3). In all cases, both Sure Power treatments caused significantly more turf damage than the control and the other herbicide treatments, although the turf damage was always less than the minimally allowed amount (rating of below a 6). Turf damage was more severe in the violet location than the thistle location, because turf in the violet location was under heavy shade stress.

Differences in control of thistle was significant at 3, 7, 14, and 28 DAT (Figure 1). At 3, 7, and 14 DAT, both Sure Power treatments had higher percent thistle control than the other herbicide treatments and the untreated control. By 28 DAT, all herbicide treatments were similar in percent control and all had significantly higher percent control than the untreated control even though their efficacy was reduced. Efficacy further reduced by 42 DAT during which no treatments were different from the untreated control. By 56 DAT, all herbicide treatments had no thistle control.

Differences in control of wild violet was significant at all rating dates (Figure 2). At all dates, both Sure Power treatments had significantly higher control than the other herbicides and the untreated control. Sure Power had significant wild violet control (55%+) as early as 3 DAT and nearly 90 percent control by 7 DAT. Defendor was never different than the untreated control, although Confront had better control than the untreated control on all dates except 3 DAT.

Sure Power is an effective herbicide in Iowa for control of hard-to-control weeds. It is especially effective at controlling these weeds quickly with no lasting harm to the desired turfgrass stand.

Acknowledgements

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Table 1. Treatment descriptions for Sure Power Turf Herbicide Evaluation trial, 2018.

Treatment number	Product	Active ingredient(s)	Rate (fl oz/ac)
1	Untreated Control	---	---
2	Sure Power	2,4-D, triclopyr, fluroxypyr, flumioxazin	48
3	Sure Power	2,4-D, triclopyr, fluroxypyr, flumioxazin	56
4	Defendor	Florasulam	4
5	Confront	Clopyralid, triclopyr	24

Table 2. Turf tolerance for thistle location of Sure Power Turf Herbicide Evaluation trial, 2018.

Treatment	3 DAT ¹	7 DAT	14 DAT	28 DAT	Overall mean
Untreated Control	9 ²	9	9	9	9
Sure Power (48 oz/ac)	9	8.25	8.5	9	8.69
Sure Power (56 oz/ac)	9	7.75	8.5	9	8.56
Defendor	9	9	9	9	9
Confront	9	9	9	9	9
LSD (0.05) ³	ns ⁴	0.47	ns	ns	0.28

¹DAT = days after treatment.

²Turf tolerance was rated on a 1-9 scale, with below 6 considered unacceptable.

³Means were separated using Fisher's LSD.

⁴ns = not significant at $P \leq 0.05$.

Table 3. Turf tolerance for wild violet location of Sure Power Turf Herbicide Evaluation trial, 2018.

Treatment	3 DAT ¹	7 DAT	14 DAT	28 DAT	Overall mean
Untreated Control	9 ²	9	9	9	9
Sure Power (48 oz/ac)	7.25	6.75	8	7.25	7.31
Sure Power (56 oz/ac)	7.75	6	7.5	7	7.06
Defendor	9	9	9	9	9
Confront	9	9	9	8.5	8.88
LSD (0.05) ³	ns ⁴	1.07	ns	1.23	1.14

¹DAT = days after treatment.

²Turf tolerance was rated on a 1-9 scale, with below 6 considered unacceptable.

³Means were separated using Fisher's LSD.

⁴ns = not significant at $P \leq 0.05$.

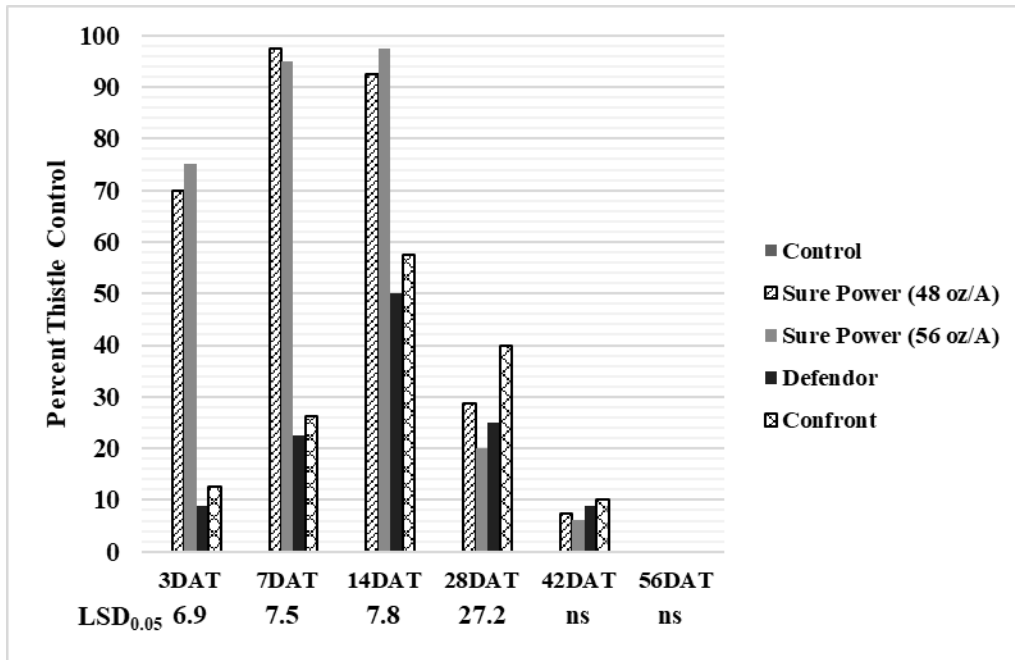


Figure 1. Percent weed control by treatment and date for thistle location of Sure Power Turf Herbicide Evaluation trial, 2018.

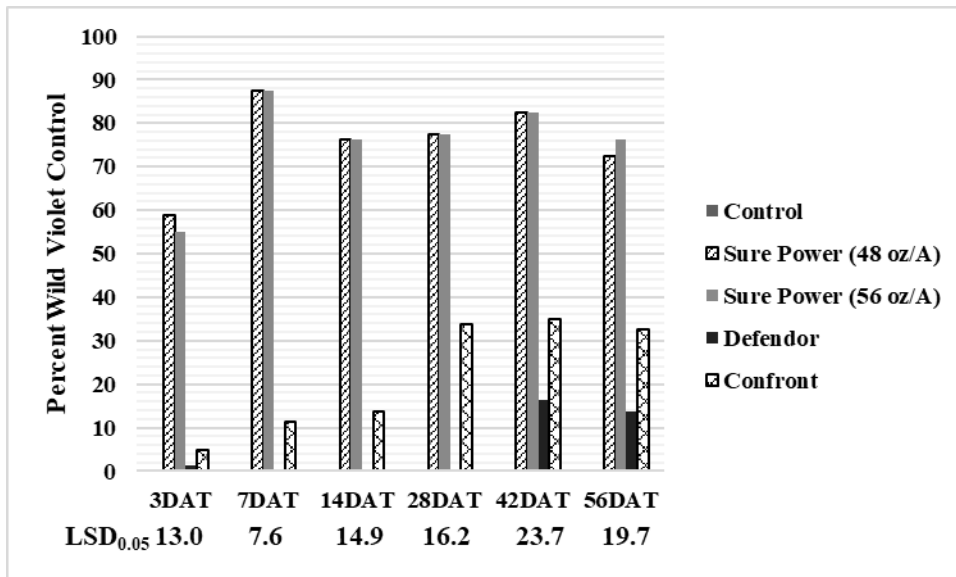


Figure 2. Percent weed control by treatment and date for wild violet location of Sure Power Turf Herbicide Evaluation trial, 2018.