

Kansas Agricultural Experiment Station Research Reports

Volume 3
Issue 4 *Turfgrass Research*

Article 5

7-2017

Response of Seven Woody Ornamentals to Turfgrass Herbicide Applications of Arylex, Penoxsulam, and Pyrimisulfan

J. Hoyle

Kansas State University, jahoyle@ksu.edu

Follow this and additional works at: <https://newprairiepress.org/kaesrr>



Part of the [Horticulture Commons](#)

Recommended Citation

Hoyle, J. (2017) "Response of Seven Woody Ornamentals to Turfgrass Herbicide Applications of Arylex, Penoxsulam, and Pyrimisulfan," *Kansas Agricultural Experiment Station Research Reports*: Vol. 3: Iss. 4. <https://doi.org/10.4148/2378-5977.7154>

This report is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in Kansas Agricultural Experiment Station Research Reports by an authorized administrator of New Prairie Press. Copyright 7-2017 Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. K-State Research and Extension is an equal opportunity provider and employer.



Response of Seven Woody Ornamentals to Turfgrass Herbicide Applications of Arylex, Penoxsulam, and Pyrimisulfan

Abstract

Continued testing of turf-applied herbicides are being conducted to ensure off-target plant injury does not occur in the landscape. Results indicate high herbicide safety on select landscape ornamentals with new herbicides used to manage weeds in turf.

Keywords

ornamental herbicide tolerance, penoxsulam, pyrimisulfan

Creative Commons License



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

TURFGRASS RESEARCH 2017



JULY 2017

K-STATE
Research and Extension

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service

K-State Research and Extension is an equal
opportunity provider and employer.

Response of Seven Woody Ornamentals to Turfgrass Herbicide Applications of Arylex, Penoxsulam, and Pyrimisulfan

Jared A. Hoyle

Summary. Continued testing of turf-applied herbicides are being conducted to ensure off-target plant injury does not occur in the landscape. Results indicate high herbicide safety on select landscape ornamentals with new herbicides used to manage weeds in turf.

Rationale. With the recent stop-sale and distribution by the U.S. Environmental Protection Agency in 2011 of aminocyclopyrachlor for use in turfgrass systems due to reported tree harm, many newly registered turfgrass herbicides are more intensely tested for ornamental damage. New herbicides that have shown effective weed control in turfgrass systems are arylex, penoxsulam, and pyrimisulfan.

Objective. The objective of this study was to investigate the influence of turfgrass applications of arylex, penoxsulam, and pyrimisulfan herbicides on seven common woody ornamental landscape species.

Study Description. Research trials were initiated in 2015 on a nursery production facility at the Kansas State University Tuttle Forestry Research Center in Manhattan, KS. The seven ornamental species that were tested included blue spruce (*Picea pungens* 'Glauca'), eastern redbud (*Cercis canadensis*), red maple (*Acer rubrum* 'Sun Valley'), elm (*Ulmus parvifolia* 'Frontier'), viburnum (*Viburnum x rhytidophylloides* 'Allegheny'), and limber pine (*Pinus flexilis* 'Vanderwolf's Pyramid'). Individual species were grown in 5 gallon nursery pots. Herbicide treatments included pyrimisulfan (0.16 lb ai/a), pyrimisulfan (0.32 lb ai/a), pyrimisulfan (0.16 lb ai/a) + penoxsulam (0.16 lb ai/a), pyrimisulfan (0.24 lb ai/a) + penoxsulam (0.24 lb ai/a),

View all turfgrass research reports online at: <http://newprairiepress.org/kaesrr>



aminocyclopyrachlor (1.35 lb ae/a), arylex (0.017 lb ae/a) + fluoxypyr (0.29 lb ae/a) + dicamba (0.25 lb ae/a), arylex (0.017 lb ae/a) + fluoxypyr (0.26 lb ae/a) + 2,4-D (1.9 lb ae/a), 2,4-D (2.38 lb ae/a) + MCPP (0.63 lb ae/a) + dicamba (0.21 lb ae/a), and a non-treated control. Treatments were applied August 3, 2015, and arranged as a randomized complete block design with three replications within each species. Liquid herbicide treatments were applied in 0.5 pt of water to the soil surface of each individual species. Granular treatments were applied to soil surface by hand, then watered in with 0.5 pt. All treatments were applied to simulate common turfgrass application. Visual phytotoxicity (0-100% scale) was conducted monthly throughout the experiment. Data were subjected to analysis of variance (ANOVA) in SAS 9.4 (SAS Institute Inc., Cary, NC) and means were separated according to Fisher's protected least significant difference (LSD) level at 0.05.

Results. No injury was observed on blue spruce, limber pine, and red maple regardless of treatment throughout the experiment. Unacceptable injury was observed by aminocyclopyrachlor applications at 0-57 days after application (DAA) on eastern redbud, elm and viburnum. High rates of pyrimisulfan + penoxsulam at 57 DAA also resulted in slight (<40%) elm phytotoxicity, significantly greater than the non-treated. Results indicate high herbicide safety on select landscape ornamentals with new herbicides used to manage weeds in turf.

K-STATE
Research and Extension

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service



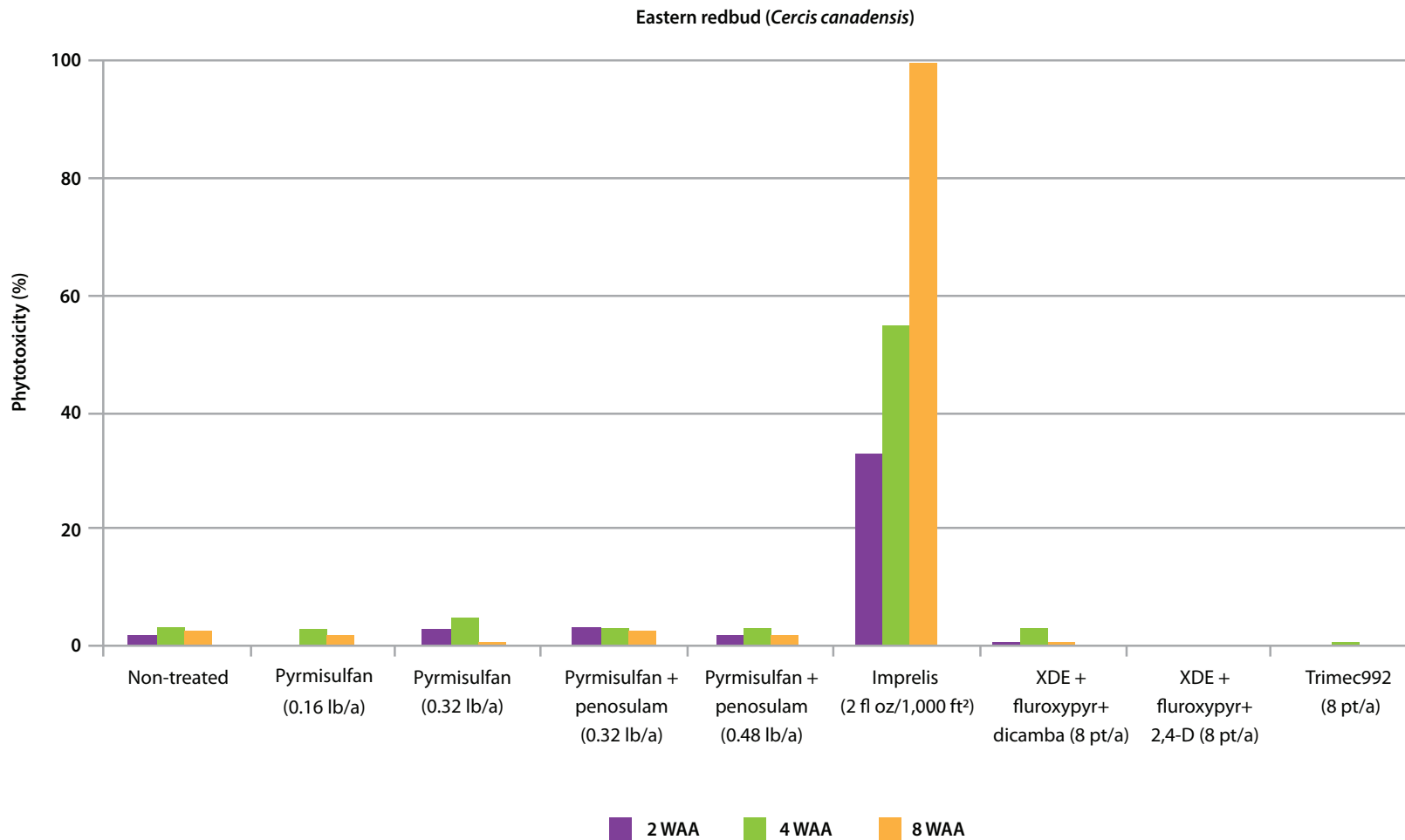


Figure 1. Application of treatment to eastern redbud (*Cercis canadensis*) in Manhattan, KS, August 3, 2015.

WAA = weeks after application.

Means were separated according to Fisher's protected least significant difference (LSD) at 0.05 significance level.

Imprelis was the only significantly different treatment at all ranges.



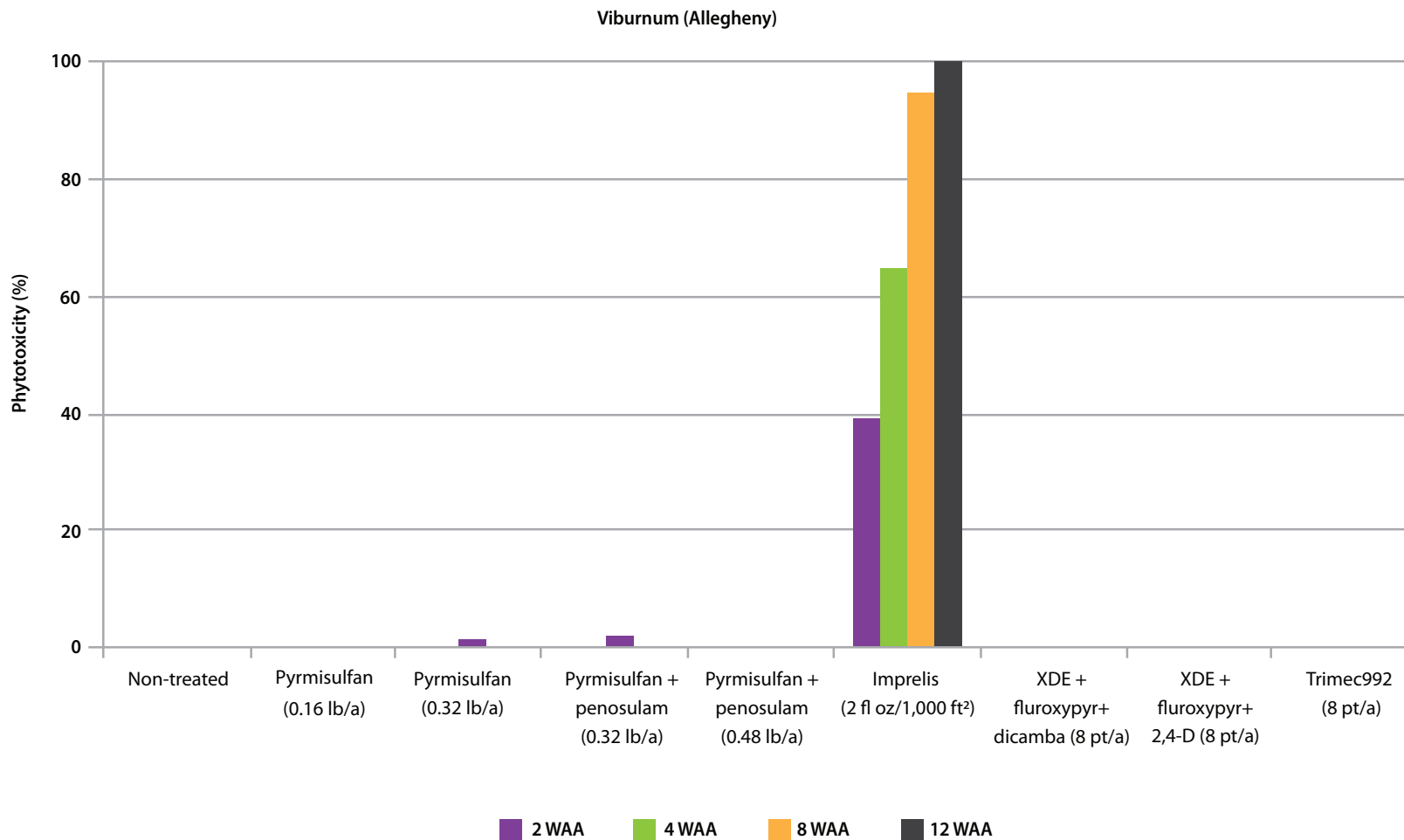


Figure 2. Application of treatment to viburnum (*Viburnum* (Allegheny)) in Manhattan, KS, August 3, 2015.

WAA = weeks after application.

Means were separated according to Fisher's protected least significant difference (LSD) at 0.05 significance level.

Imprelis was the only significantly different treatment at all ranges.



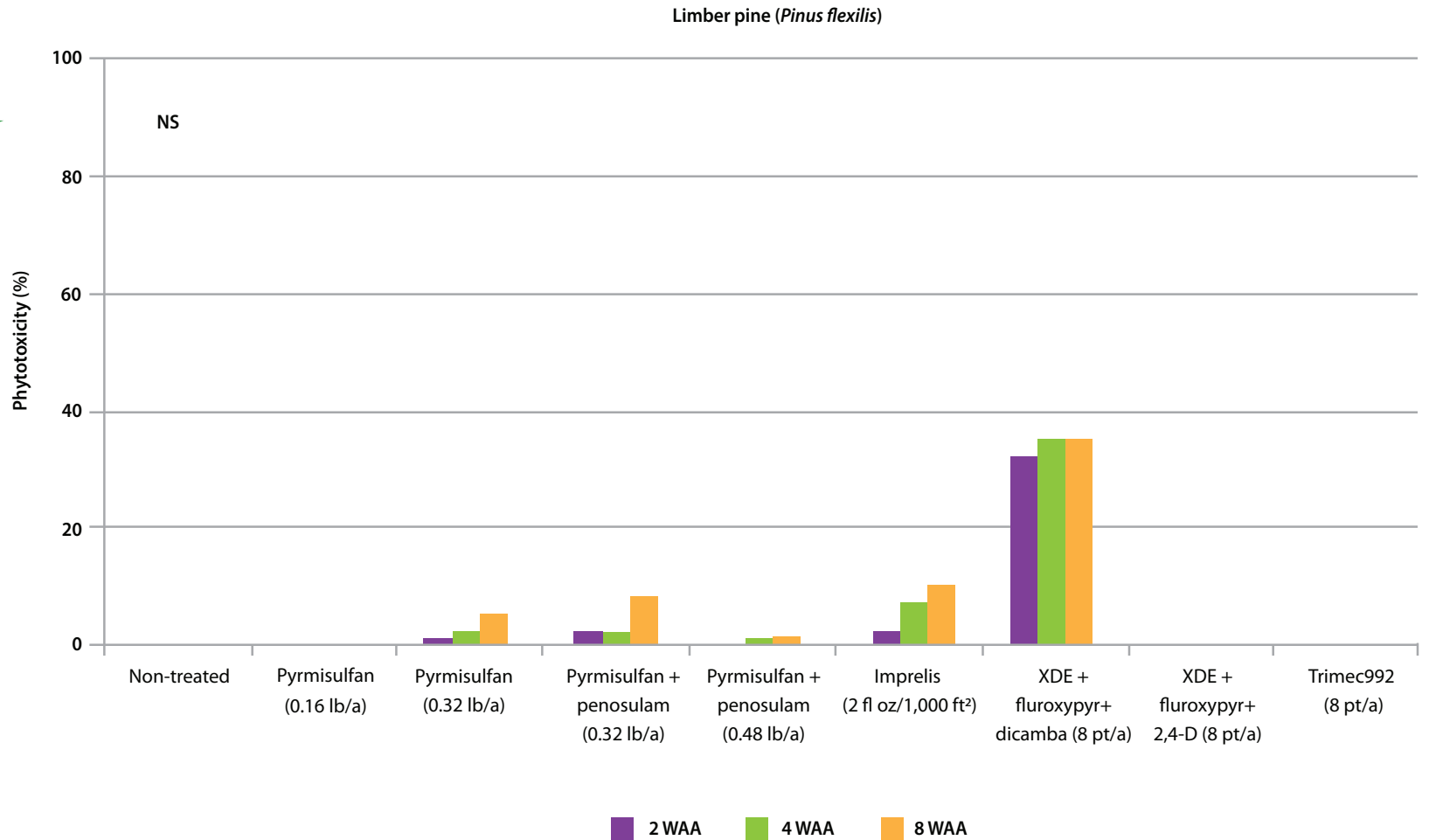


Figure 3. Application of treatment to limber pine (*Pinus flexilis* (Vanderwolf's Pyramid)) in Manhattan, KS, August 3, 2015.

WAA = weeks after application.

Means were separated according to Fisher's protected least significant difference (LSD) at 0.05 significance level.

