

# Native forb herbicide tolerance to spring and fall applications of ProClova and GF-4574

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## How We Sprayed Treatments

<b>Application Timing</b>	spring: June 15 <sup>th</sup> , 2020	fall: September 29 <sup>th</sup> , 2020
<b>Spray Equipment</b>	CO <sub>2</sub> pressurized 10-foot boom sprayer (20 GPA)	



**Research site: mesic restored prairie**

**Note that fall herbicide applications will be evaluated in 2021**

## Plants Present at Spring Application – Developmental Stage

common name	Average Height (in)	Phenological Stage
Canada goldenrod	22	vegetative
common milkweed	28	flower buds present
golden Alexanders	32	flowering
purple coneflower	16	vegetative
smooth blue aster	14	vegetative
smooth penstemon	32	flowering
wild bergamot	20	vegetative
yellow coneflower	22	vegetative

## Herbicide Treatments

Treatment	Active Ingredient	Rate	Timing
1. ProClova	florpyrauxifen-benzyl + 2,4-D amine	24 fluid ounces/acre (fl oz/A)	spring
2. GF-4574	florpyrauxifen-benzyl + 2,4-D choline	28 fl oz/A	spring
3. ProClova	florpyrauxifen-benzyl + 2,4-D amine	32 fl oz/A	spring
4. GF-4574	florpyrauxifen-benzyl + 2,4-D choline	37.4 fl oz/A	spring
5. Untreated Control	-	-	-
6. ProClova	florpyrauxifen-benzyl + 2,4-D amine	24 fl oz/A	fall
7. GF-4574	florpyrauxifen-benzyl + 2,4-D choline	28 fl oz/A	fall
8. ProClova	florpyrauxifen-benzyl + 2,4-D amine	32 fl oz/A	fall
9. GF-4574	florpyrauxifen-benzyl + 2,4-D choline	37.4 fl oz/A	fall

# Key Takeaway: Forbs had a species-specific response to spring applications of ProClova and GF-4574

Key to Mortality Ratings:				
Tolerant (0-15% mortality)	Moderately Tolerant (16-50% mortality)	Moderately Susceptible (51-75% mortality)	Susceptible (76-100% mortality)	No Data
Native Forb Mortality (application timing)	Treatment 1 – ProClova Low Rate (spring)	Treatment 2 – GF-4574 Low Rate (spring)	Treatment 3 – ProClova High Rate (spring)	Treatment 4 – GF-4574 High Rate (spring)
Common Name	% mortality 3 months after treatment			
Canada goldenrod	N/A	33	50	20
common milkweed	40	16	33	50
fleabane species	100	100	100	100
golden Alexanders	58	54	35	92
purple coneflower	0	0	0	0
smooth blue aster	0	0	19	0
smooth penstemon	0	0	0	33
wild bergamot	68*	73*	90*	70*
yellow coneflower	33	100*	100*	66*

## Notes:

- Evaluations in 2021 and 2022 will document long-term forb survivorship
- (\*) indicates significant difference from untreated control at P=0.05, LSD