

# COMPARING EFFECTIVENESS OF TERRAVUE TO STANDARDS ON ROADSIDES IN WISCONSIN

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[HTTPS://RENZWEEDSCIENCE.CALS.WISC.EDU/](https://renzweedscience.cals.wisc.edu/)



Extension

UNIVERSITY OF WISCONSIN-MADISON



# HERBICIDES ARE A KEY COMPONENT OF INVASIVE PLANT MANAGEMENT

- Positive attributes
  - Effective
  - Economical
- Negative attributes
  - Risk of non-target injury
  - Movement offsite
  - Environmental contamination



# NEW HERBICIDES MINIMIZE NEGATIVE ATTRIBUTES

- TerraVue
  - Aminopyralid (Milestone)
    - No volatilization
    - Environmental impact low
    - Long residual
  - Florpyrauxifen-benzyl
    - Short-lived in environment
    - Environmental impact low



# HOW EFFECTIVE IS TERRAVUE ON COMMON INVASIVE PLANTS?

- Combination of aminopyralid (Milestone) + Florpyrauxifen
  - Should provide equivalent control as Milestone
- What additional species does adding Florpyrauxifen control?
  - Verify species in carrot family are controlled with TerraVue



# HOW EFFECTIVE IS TERRAVUE ON KEY INVASIVE PLANTS IN WISCONSIN?

- Species that are typically controlled with Milestone
  - Crown vetch, teasel, spotted knapweed, Canada thistle
- Species not typically controlled with Milestone
  - Wild parsnip, wild chervil, wild carrot (queen anne's lace)
  - Activity on brush (just established research in 2020)

# HOW WE EVALUATE HERBICIDE EFFECTIVENESS

1. Dense population of target weed species
2. Replicated trial
3. Broadcast treatments
  - 10 x 25 ft per plot
  - **20 GPA**
  - Uniform coverage/distribution
4. Evaluate results over 6-12 months





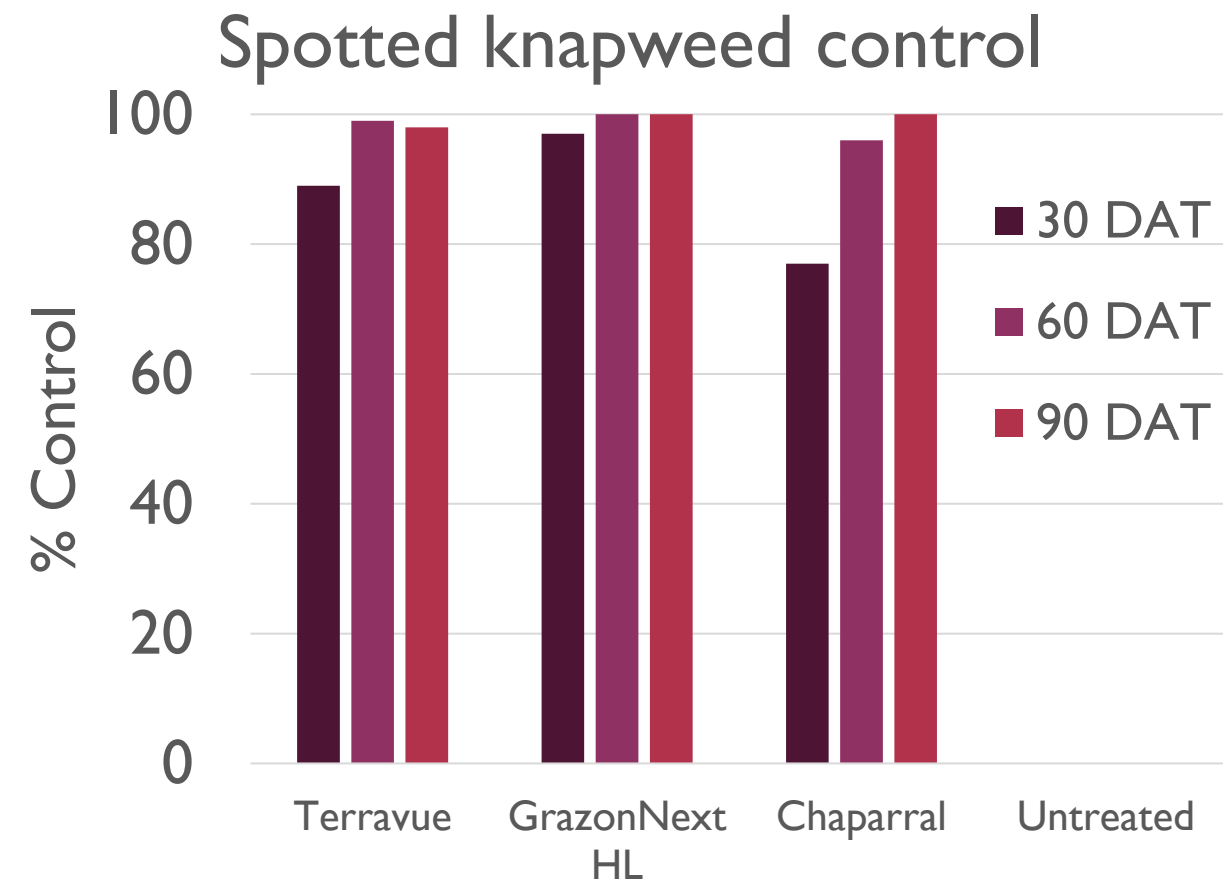


**DOES TERRAVUE HAVE EQUAL CONTROL ON INVASIVE PLANTS TYPICALLY  
CONTROLLED BY AMINOPYRALID CONTAINING PRODUCTS?**

Milestone, Chaparral, Opensight, GrazonNext HL, and MORE.....

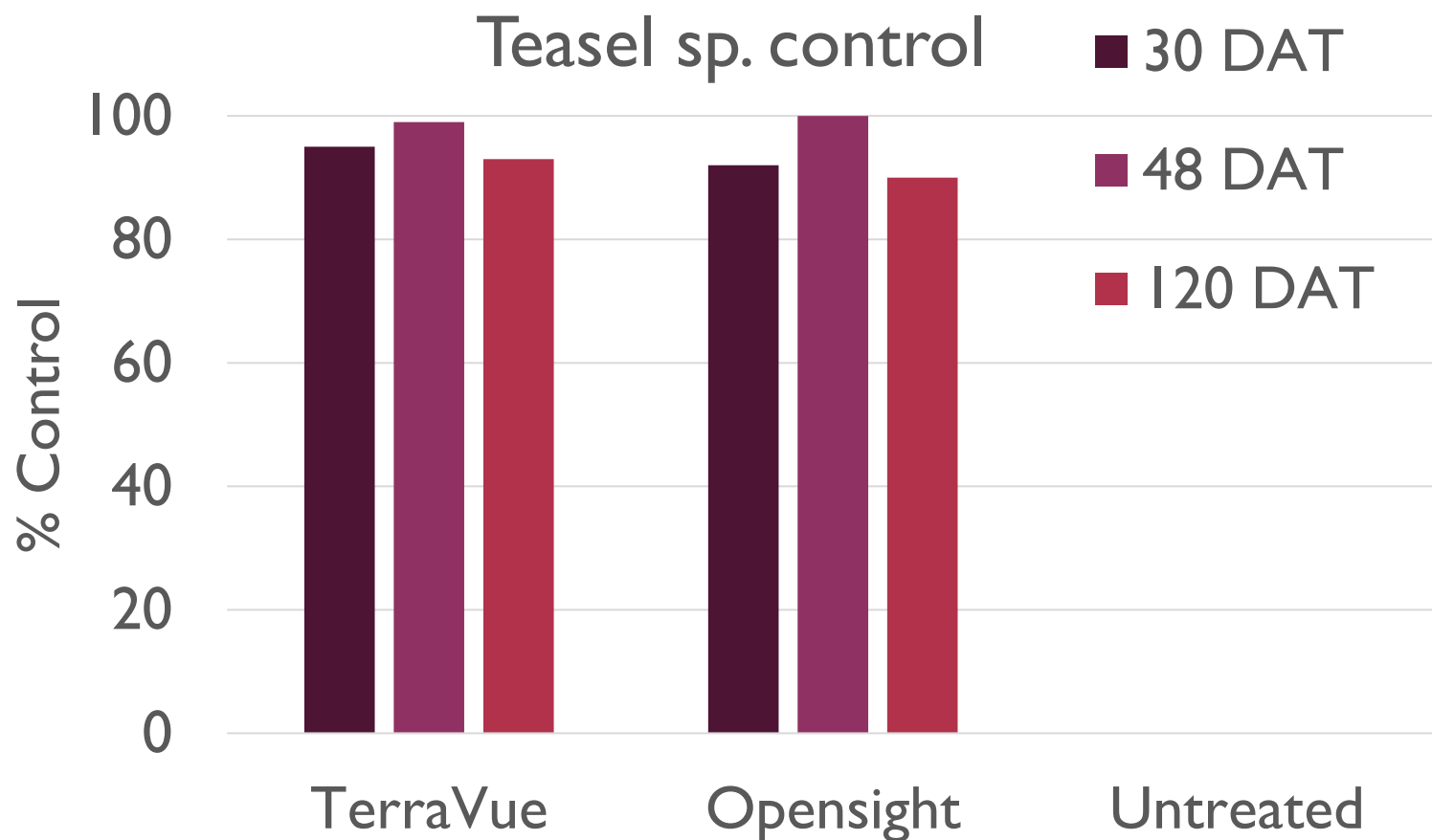


# EQUAL CONTROL OF SPOTTED KNAPWEED WITH PRODUCTS THAT CONTAIN MILESTONE AT 5 FL OZ A



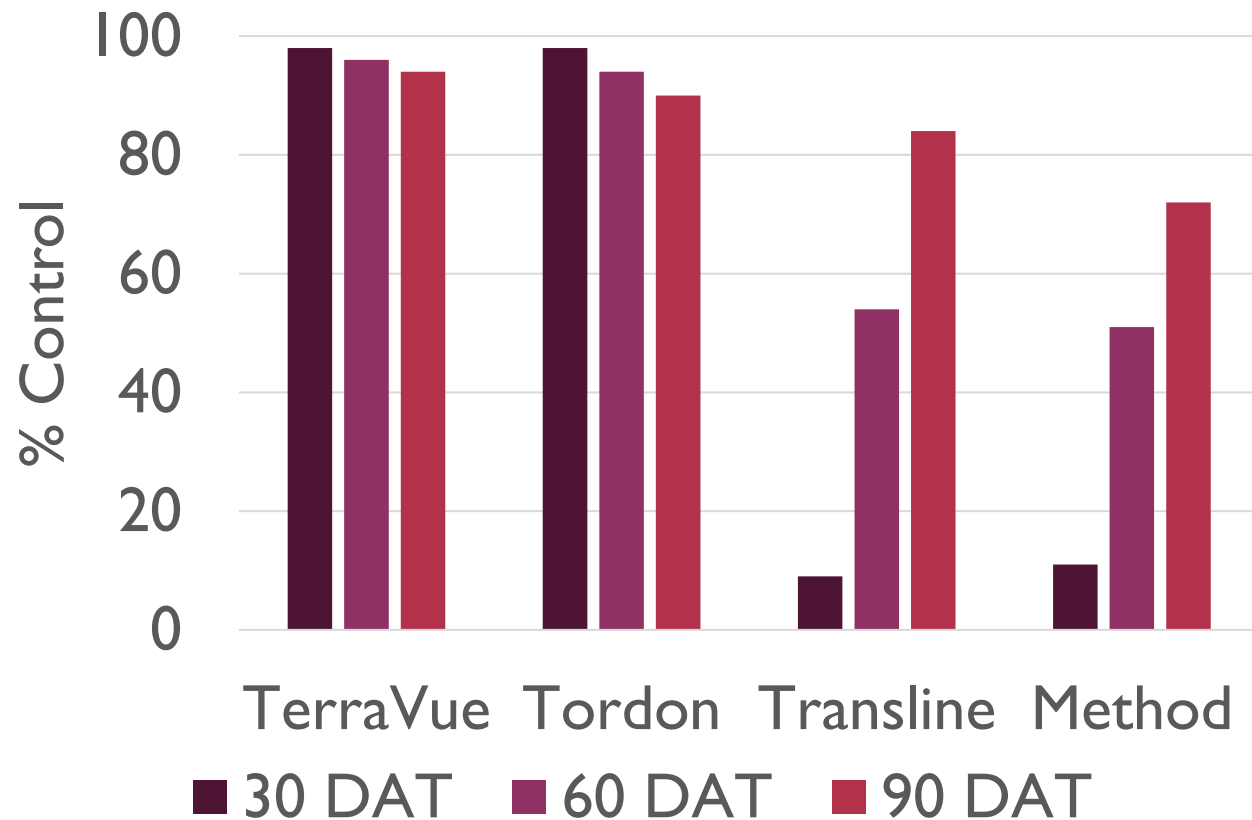


# EQUAL CONTROL OF TEASEL WITH PRODUCTS THAT CONTAIN MILESTONE



# PRODUCTS THAT CONTAIN MILESTONE CONTROL CROWN VETCH

Crown vetch control



TerraVue 2.85 oz/A vs Untreated Control





# SUMMARY

- TerraVue provides similar control of invasive plants typically targeted for control with aminopyralid (Milestone)







Wild chervil



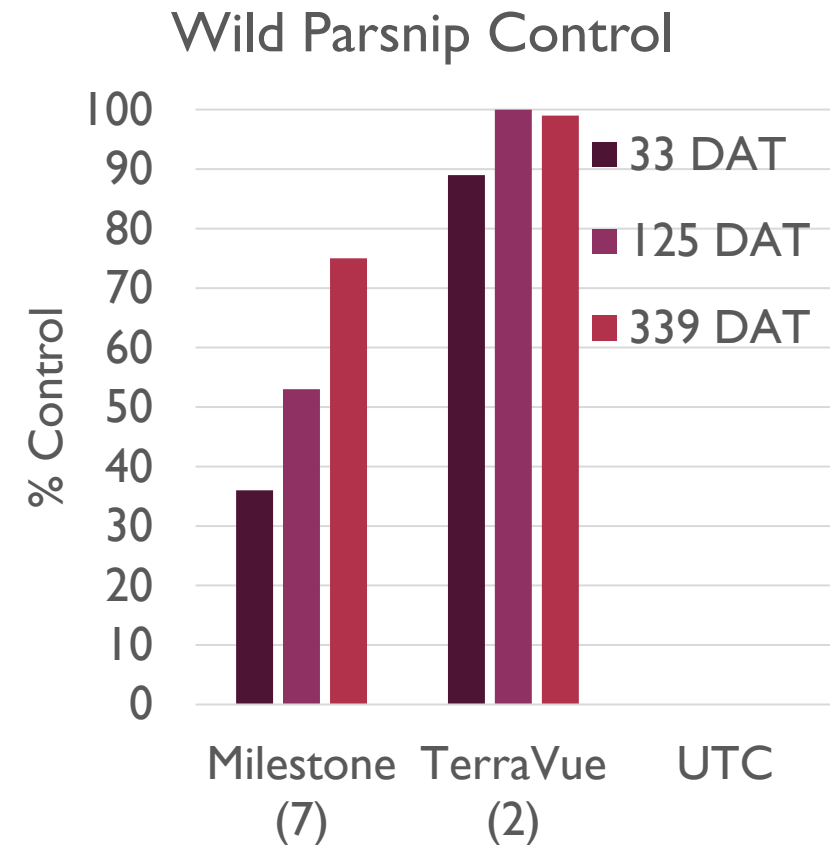
Wild parsnip (*Pastinaca sativa*)

**DOES TERRAVUE PROVIDE HIGH LEVELS OF CONTROL TO COMMON  
INVASIVE PLANTS NOT WELL CONTROLLED BY AMINOPYRALID?**



# WILD PARSNIP, NOT CONTROLLED BY MILESTONE BUT IS WITH TERRAVUE

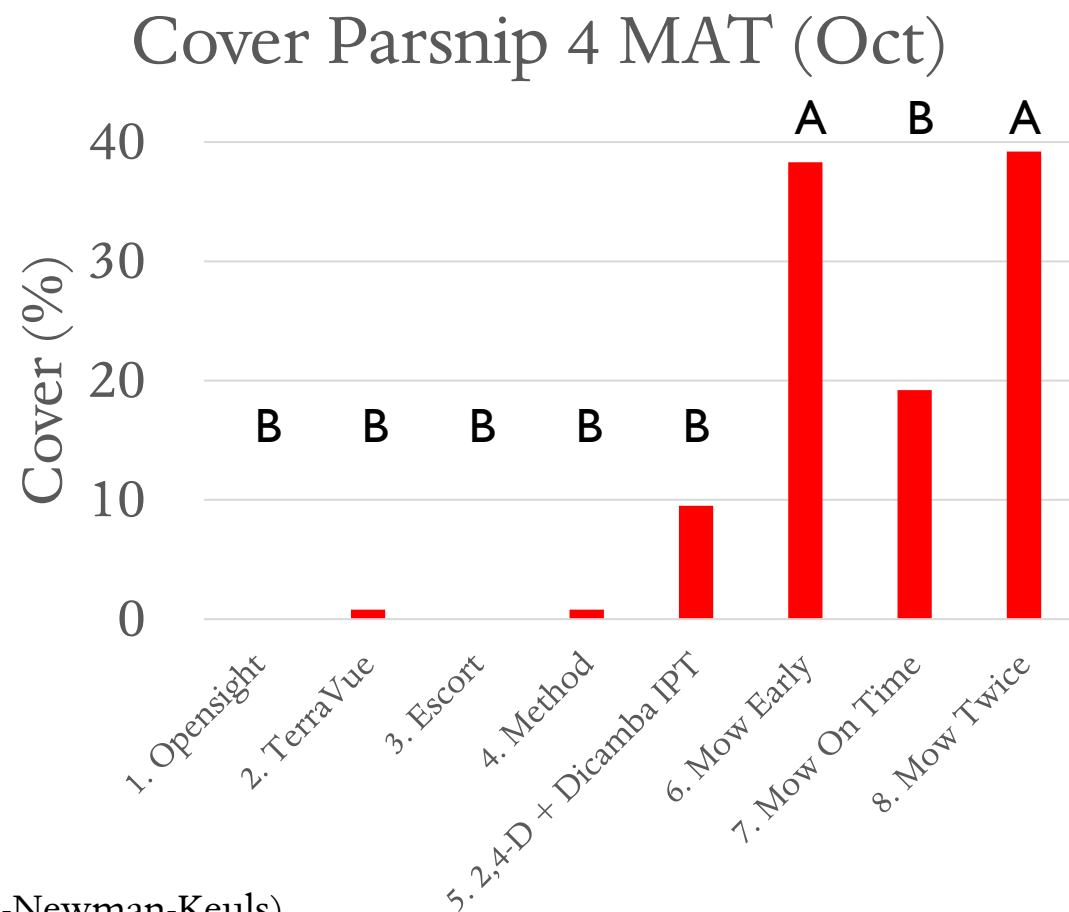
- Milestone = 25-75% control
- TerraVue = 90-100% control
- Standards also effective (90-100%)
  - Escort (metsulfuron) 0.5-0.75 oz/A
  - Method (aminocyclopyrachlor) 4-8 oz/A



# WILD PARSNIP CONTROL ROADSIDE TRIALS

## 2 LOCATIONS IN WI

- Spring applications (early – mid may)
- Known effective control
  - Metsulfuron (Escort, Opensight)
  - Aminocyclopyrachlor (Method)
  - 2,4-D
  - Dicamba
  - On-time mowing?



Bars labelled with the same letter do not significantly differ at  $P=0.05$  (Student-Newman-Keuls)



# 2.5 MAT

## July 2019, Portage County



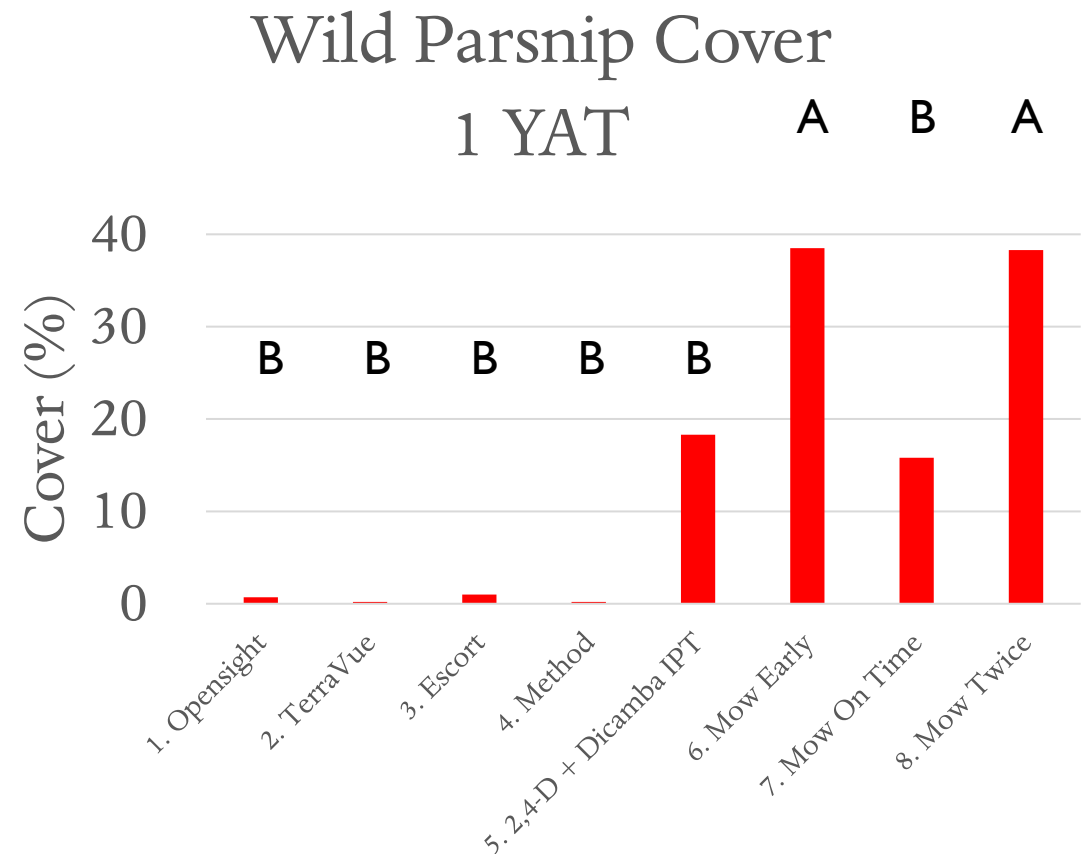
**TerraVue 2.85 oz/A**

**Mow (flowering)**



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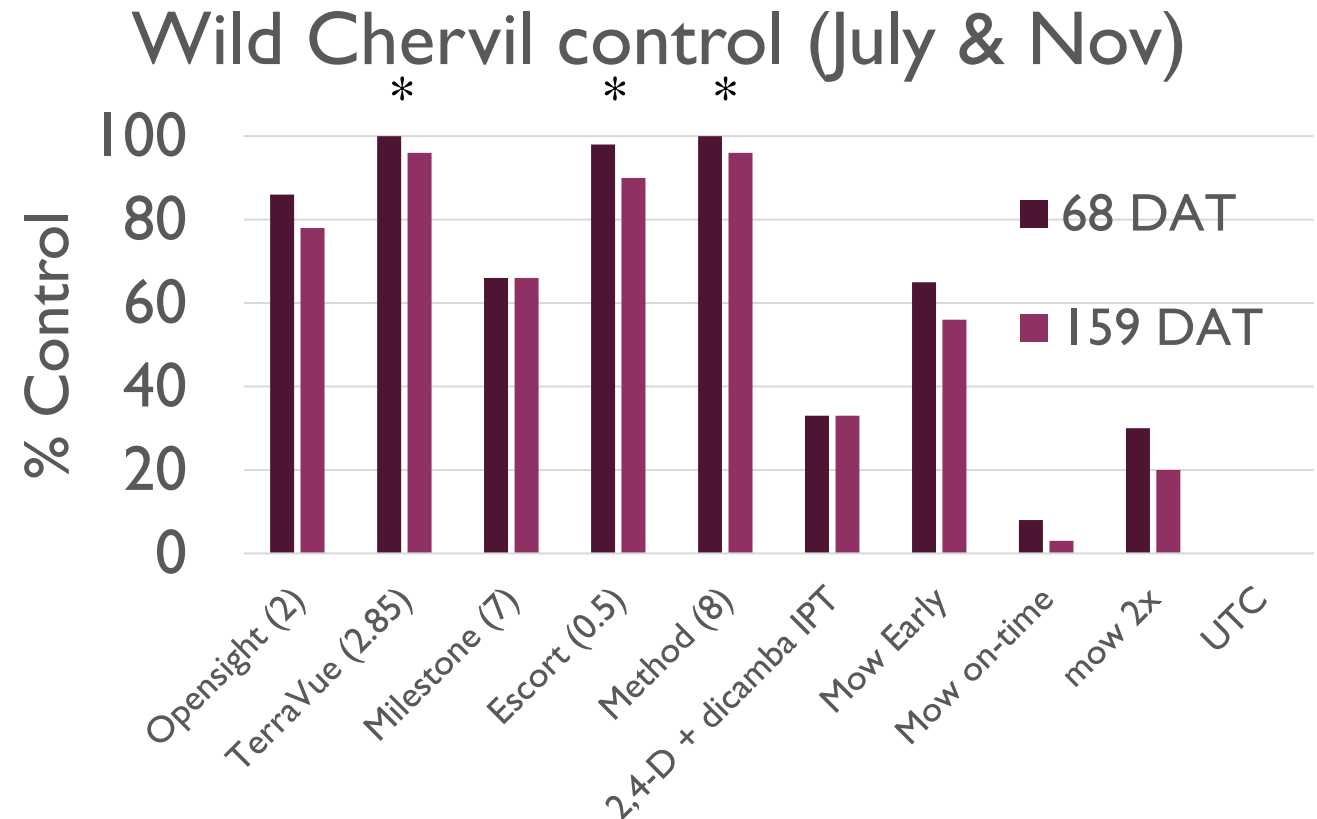
# WILD CHERVIL, A PROBLEM ON OUR ROADS WITH LIMITED INFO ON EFFECTIVE HERBICIDES

- Spreading throughout WI, due to early development
- Reports that metsulfuron is effective, limited info on other products



# WILD CHERVIL CONTROL ROADSIDE TRIALS I LOCATIONS IN WI

- Spring applications (mid may)
- Known effective control
- Metsulfuron (Escort, Opensight)



• \* indicates different than UTC  $P < 0.05$



TerraVue 2.85 oz/A



Milestone 7 fl oz/A





# WHAT WE KNOW ABOUT TERRAVUE EFFICACY ON INVASIVE PLANTS

- If controlling with aminopyralid (Milestone), TerraVue is equally effective
  - Canada thistle, spotted knapweed, crown vetch, biennial thistles, teasel

- TerraVue controls many species milestone does not

- wild parsnip, wild chervil, wild carrot
- Control equal to standard treatments

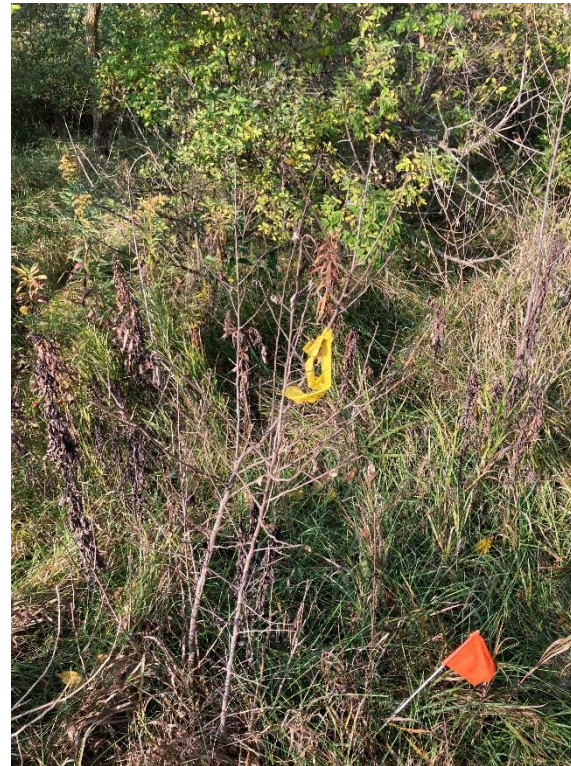
Herbicide Treatments with >90% control on all target species (rate)	Cost
Escort (0.5 oz/A) + NIS** (0.25% v/v)	\$
Opensight (2 oz/A) + MSO* (1% v/v)	\$\$
TerraVue (2.85 oz/A) + MSO* (1% v/v)	\$\$
Method (8 fl oz/A) + MSO* (1% v/v)	\$\$\$



# CAN IT ALSO BE USED ON WOODY PLANTS?

## CURRENTLY EVALUATING ON Autumn olive and common buckthorn

- Initial results look promising
- YAT evaluation critical



1. TerraVue (0.228 oz/Gal)  
@ 3 MAT on  
autumn olive



2. DuraCor (0.71% v/v)  
@ 3 MAT on  
buckthorn



# WHAT NATIVE/DESIRABLE SPECIES ARE SENSITIVE?

- Next talk will summarize what is known by Corteva
- trials in Wisconsin
  - Tolerant: Smooth penstemon, pale indian plantain
  - Sensitive: Wild bergamot


pale indian plantain   2 MAT   wild bergamot







# WHERE CAN YOU FIND SUMMARIES OF THESE EXPERIMENTS?

renzweedsience.cals.wisc.edu

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## WE RESEARCH WEEDS AND INVASIVE PLANTS IN THESE SETTINGS:


- CURRENT RESEARCH PROJECTS
- HERBICIDE TRIALS
- PUBLISHED PAPERS



ALFALFA



PASTURES



NATURAL AREAS / INVASIVE PLANTS

# WHERE CAN YOU FIND SUMMARIES OF THESE EXPERIMENTS?

■ [www.renzweedsience.cals.wisc.edu](http://www.renzweedsience.cals.wisc.edu)

■ Factsheets/summaries available for roadside trials

Timothy x Dow W x IMG\_21 x canada x Google x umisc x DAS\_Te x Rights x ROW 1 x Chippe x

renzweedsience.cals.wisc.edu/resources/rights-of-way-invasive-species-management-factsheets/

addition to factsheets that discuss county-specific takeaways.

Show 10 entries Search:


Factsheet Title	Target Species	Link
1-Page Summary Report	teasel, wild parsnip, wild chervil	PDF
Full Summary Report	teasel, wild parsnip, wild chervil	PDF
Brown County Factsheet	teasel	PDF
Chippewa County Factsheet	wild chervil	PDF
Kenosha County Factsheet	teasel	PDF
Portage County Factsheet	wild parsnip	PDF
Sauk County Factsheet	wild parsnip	PDF

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Presentations

- Agricultural Weed Identification Factsheets
- CRP Weed Management Factsheets
- Invasive Plant Identification Videos
- Rights Of Way Invasive Species Management Factsheets**

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<https://renzweedsience.cals.wisc.edu/resources/rights-of-way-invasive-species-management-factsheets/>



# THANK YOU TO ALL WHO HELPED!

