



Ventenata Impacts and Management

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Venttenata dubia



Impacts

- Winter annual grass
- Replacing cheatgrass and medusahead
- Reduces grass hay and pasture
- N. Idaho and E. Washington economies reduced by \$22 million

Summary of 8 Years of Biology Research

- Winter annual < 10% germinate in spring
- Requires about 1 inch of rain and soil temperatures above 48 F
- Seeds last less than 3 years
- Plant higher silica – reduces grazing and makes harvest difficult
- Litter protects ventenata during the winter





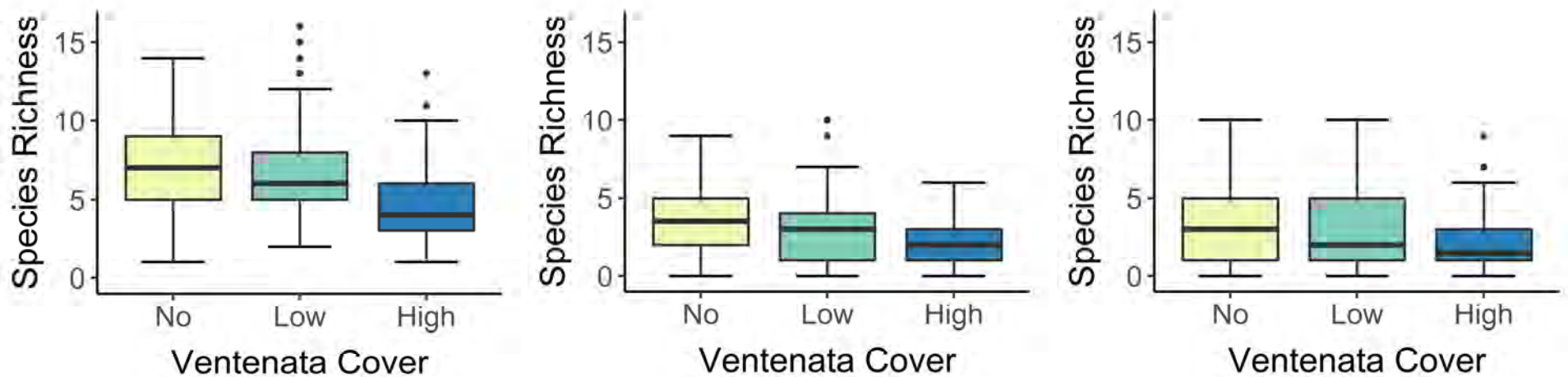
The three symbols are circles denoting number of records with small circle less than 10 records, medium circle 10 to 20 records and large circle more than 20 records.

Species Richness – Canyon Grasslands

All Species

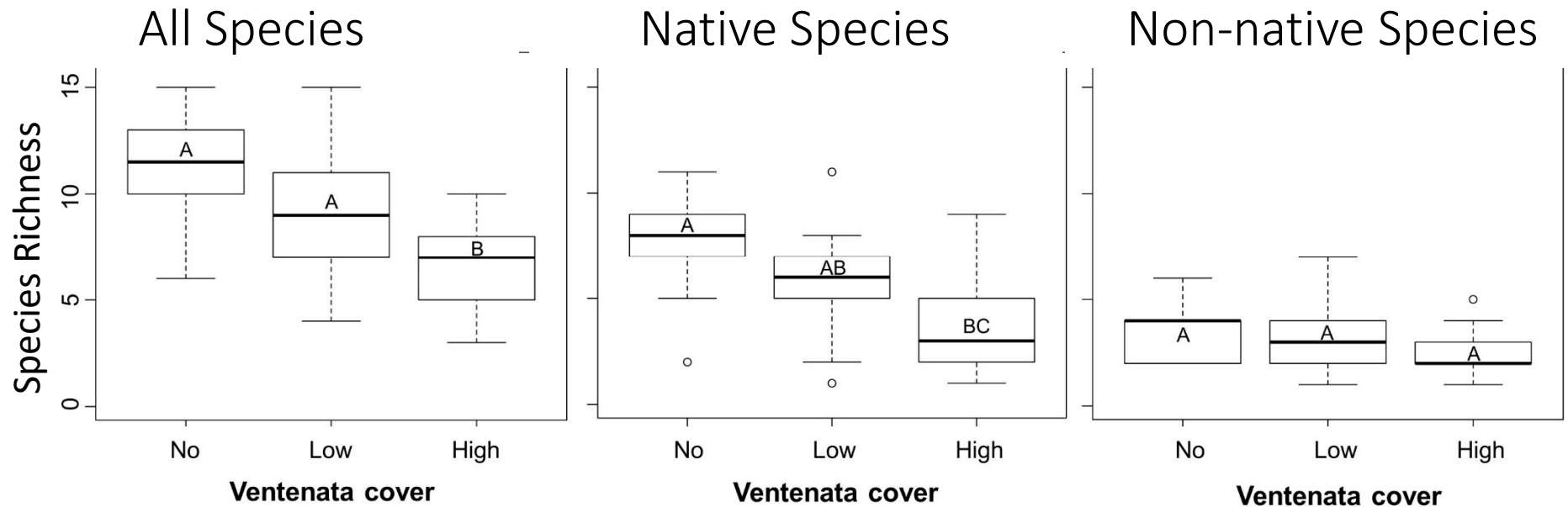
Native Species

Non-native Species



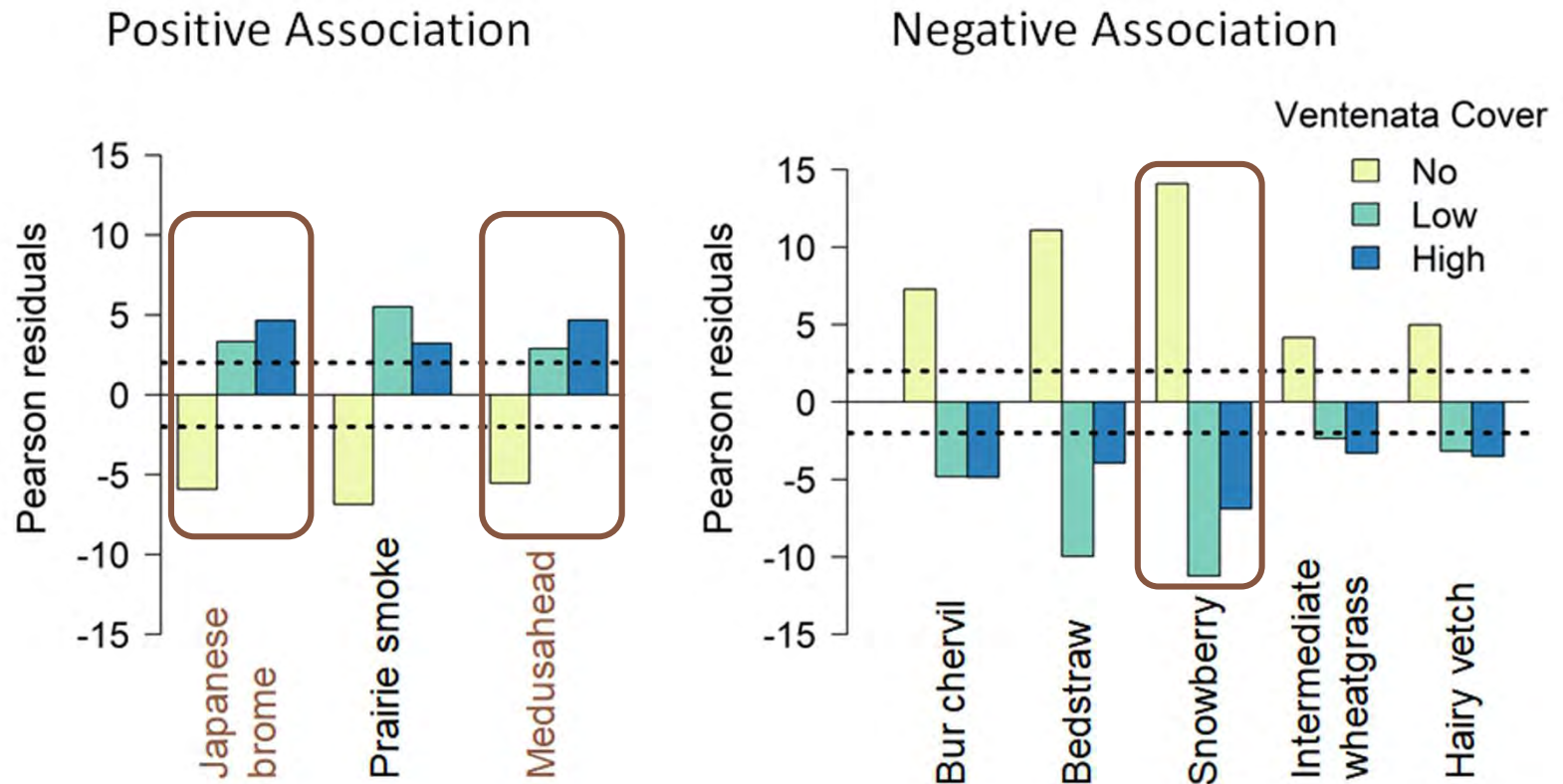
Decreasing richness with increasing ventenata cover

Species Richness – Sage Steppe



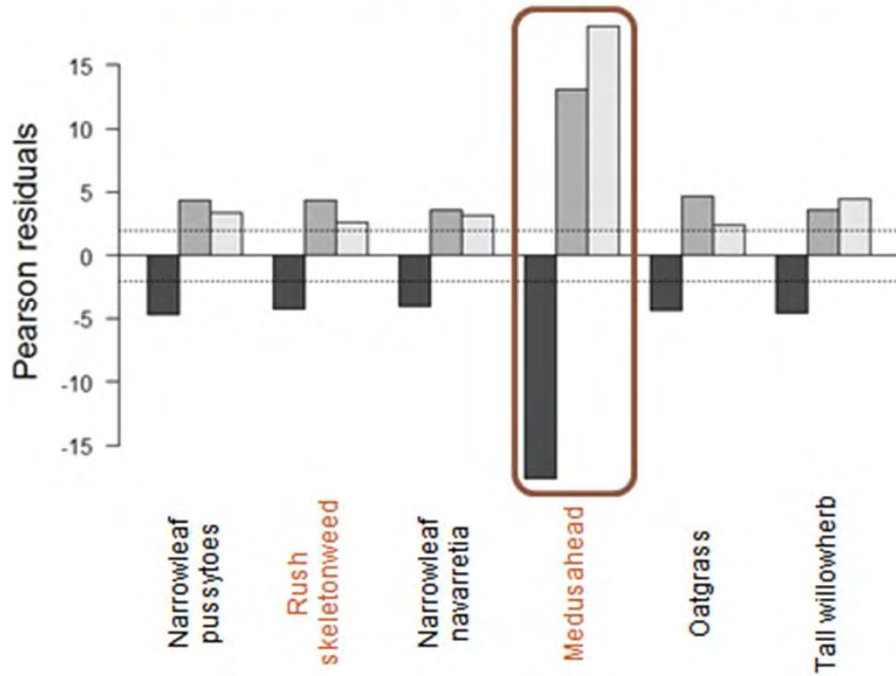
Decreasing richness with increasing ventenata cover

Indicators – Canyon Grasslands

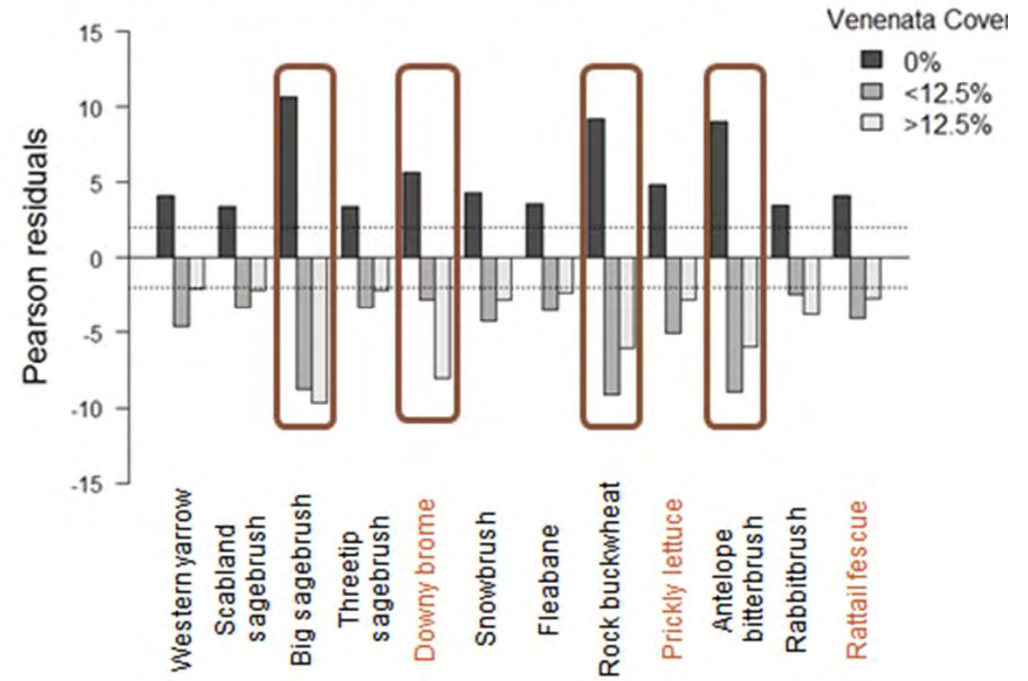


Indicators – Sage Steppe

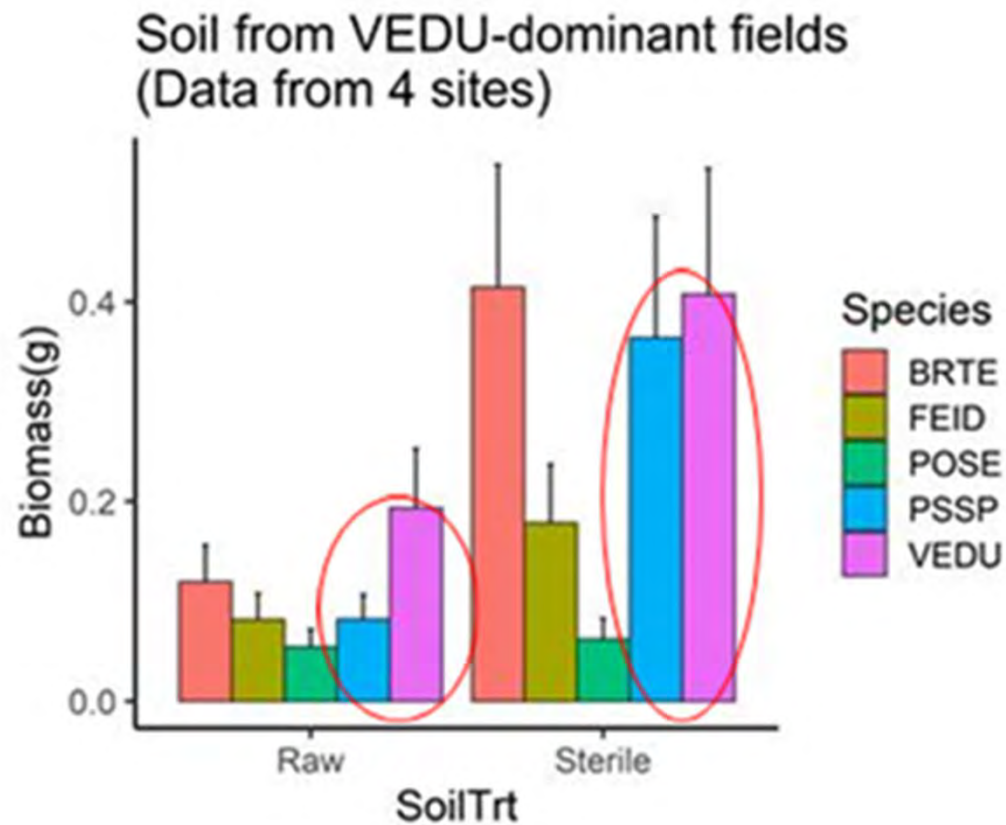
Positive Association with Ventenata



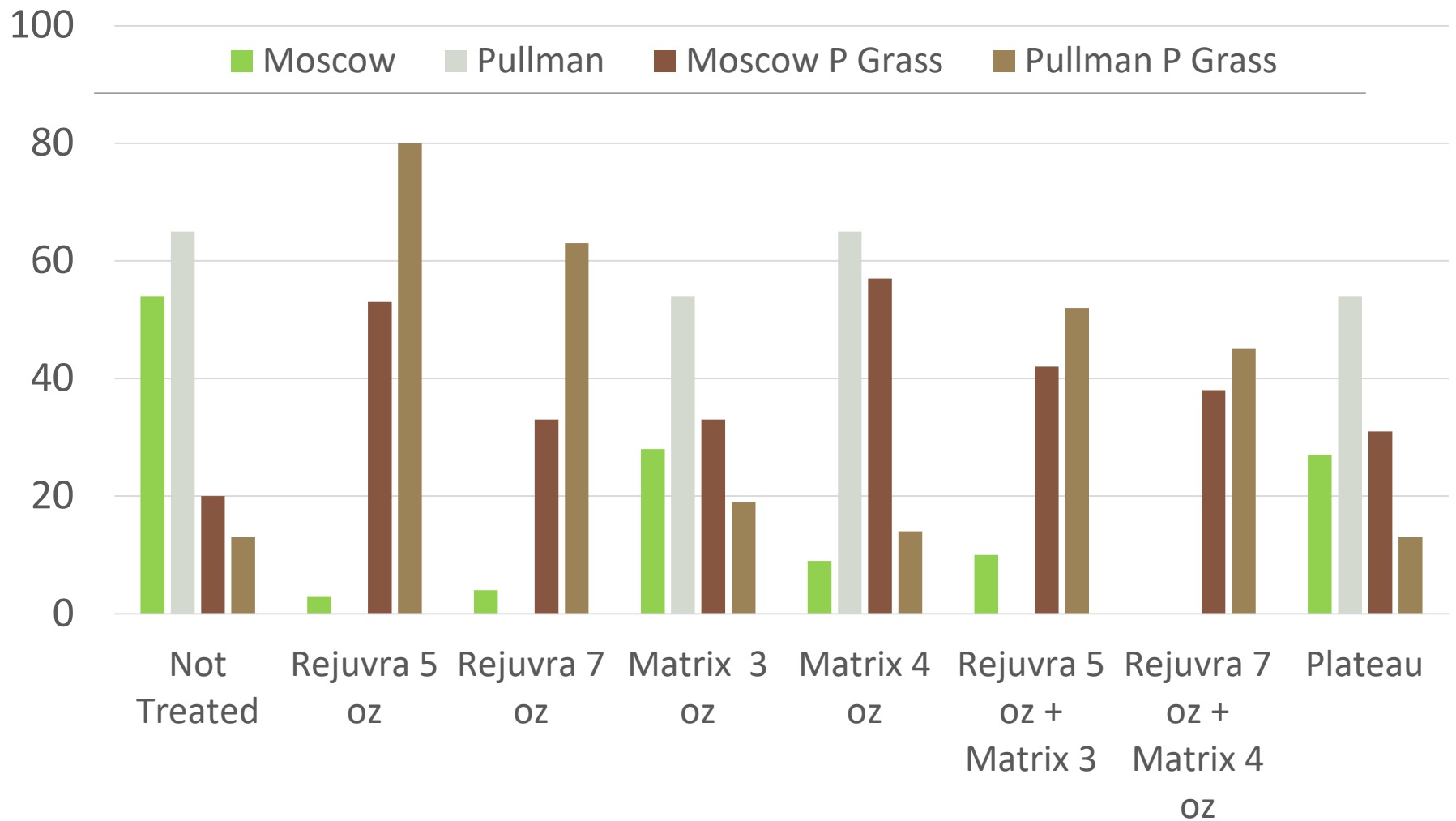
Negative Association with Ventenata



Soil Feedback – VEDU Soil



Cover of Ventenata or Perennial Grass 16 MAT



Cover of Ventenata 2 years after application

Treatment	Timing	Rate g ai ha ⁻¹	Ventenata dubia ^b
Nontreated		-	100 a
Indaziflam	A	73	0 c
Indaziflam	A	102	0 c
Indaziflam + Rimsulfuron	A	53, 72	0 c
Imazapic	A	123	78 b
Indaziflam	B	73	0 c
Indaziflam	B	102	0 c
Indaziflam + Rimsulfuron	B	53, 72	0 c
Imazapic	B	123	96 a
Indaziflam + Rimsulfuron	C	35, 72	0 c
Indaziflam + Rimsulfuron	C	53, 72	0 c
Indaziflam + Rimsulfuron	C	72, 72	0 c
Imazapic	C	123	38 b

A – September, B – October, C –November: Indaziflam – Rejuvra/Esplanade,
Rimsulfuron – Laramie/Matrix, Imazapic – Plateau/Panoramic

Application methods and rates



Fixed wing, helicopter and boomless UTV

Herbicides and rates:

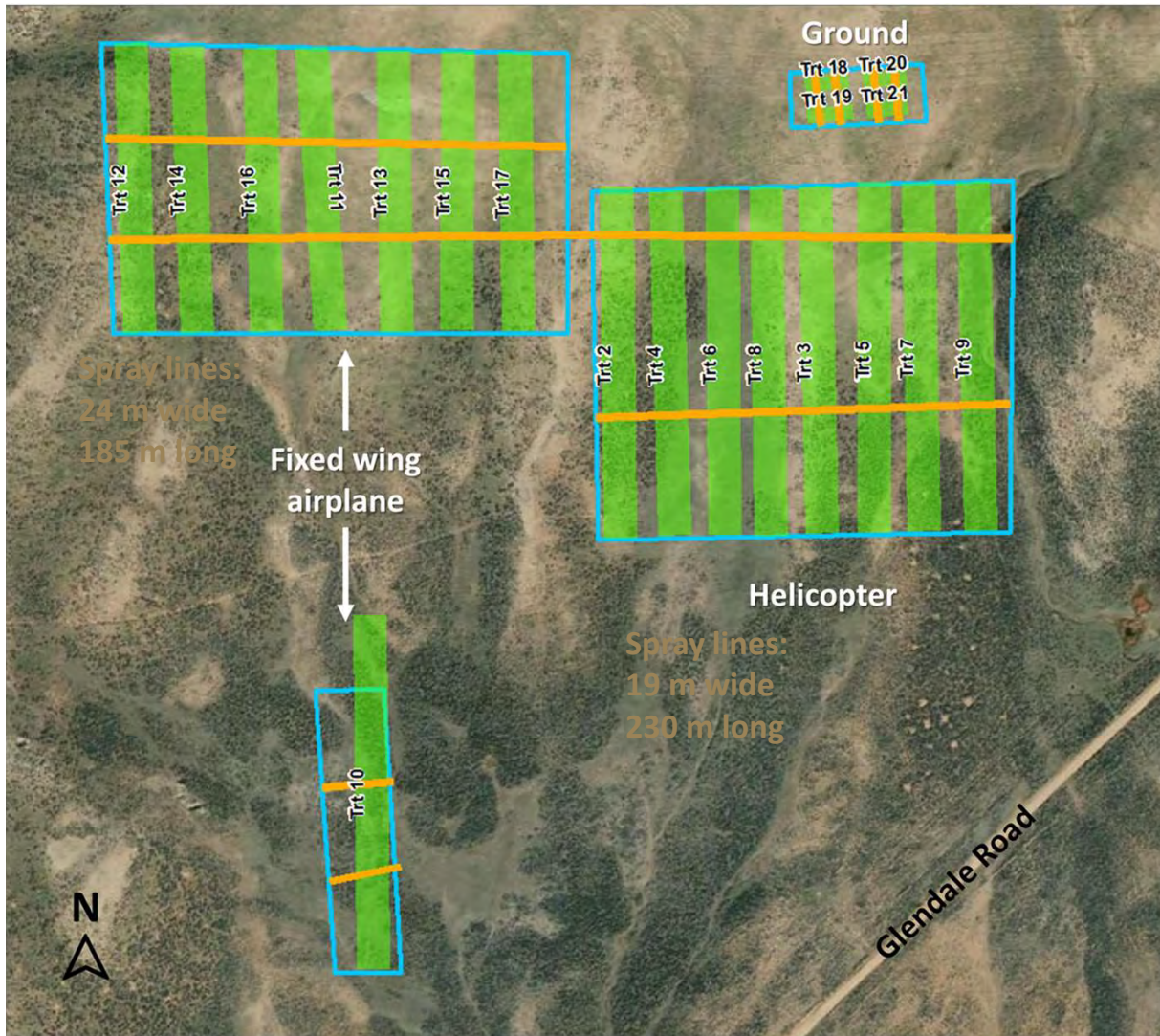
Indaziflam or indaziflam + imazapic

- 73 and 87 g/ha active ingredient, respectively

Carrier rates: 23, 47, 94, 188 l/ha

Applied Sept. 16 and 19, 2019





Study Site

Rinker Rock Creek Ranch
Near Hailey, ID



Mtn. big sagebrush
Low sagebrush
Bluebunch wheatgrass
Sandberg bluegrass
Columbia needlegrass

Pre-treatment:
55 % annual grass

Foliar cover

- 9m² quadrats, 4 reps per trt
- 10 control plots

- Pre-trt (Oct 2019) & post-trt (June 2020)

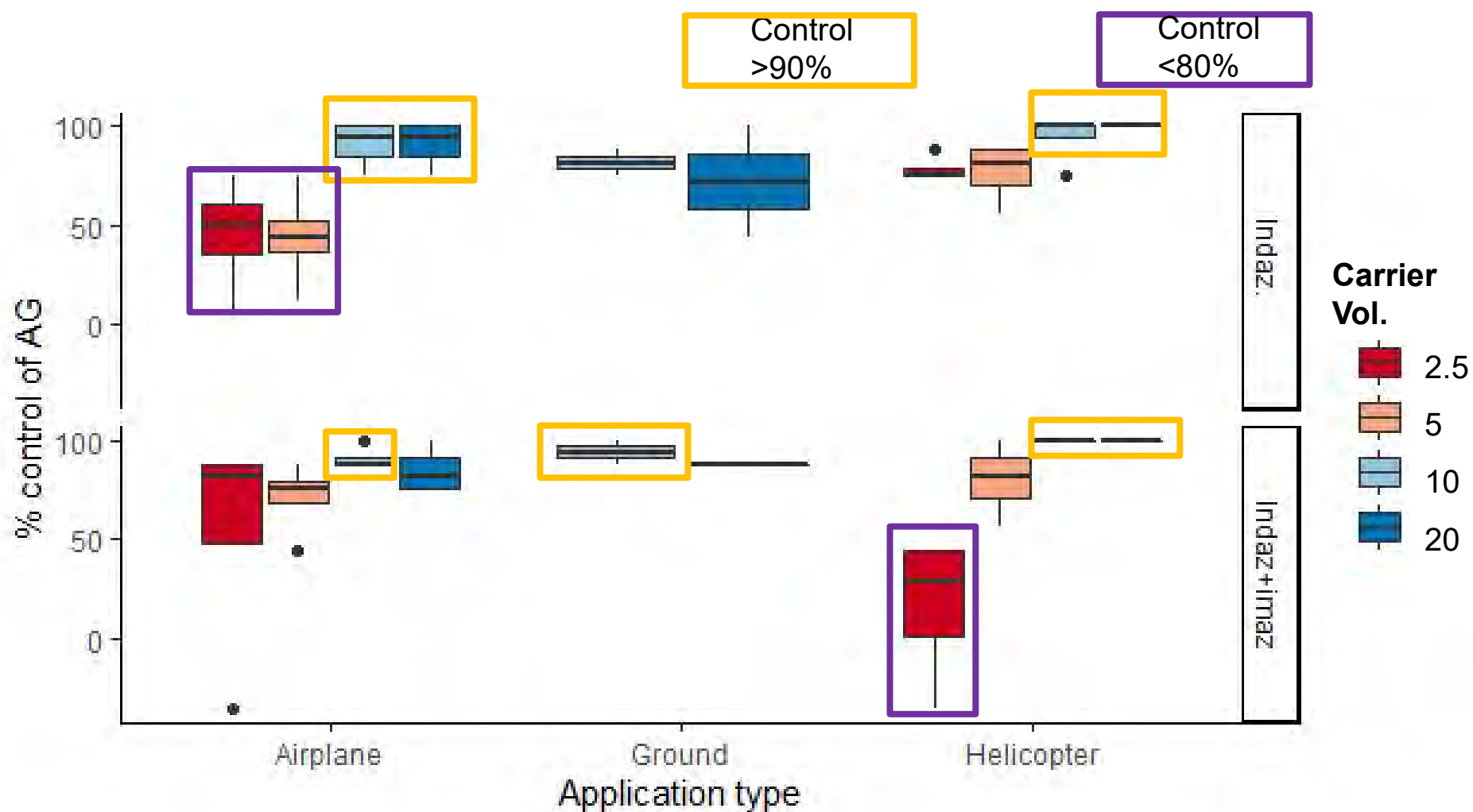
Summarized for each treatment group

- Cover by functional group
- Species richness

Compared treatment groups with ANOVA, post-hoc LSD test using package *agricolae* in R (V 4.0.3)

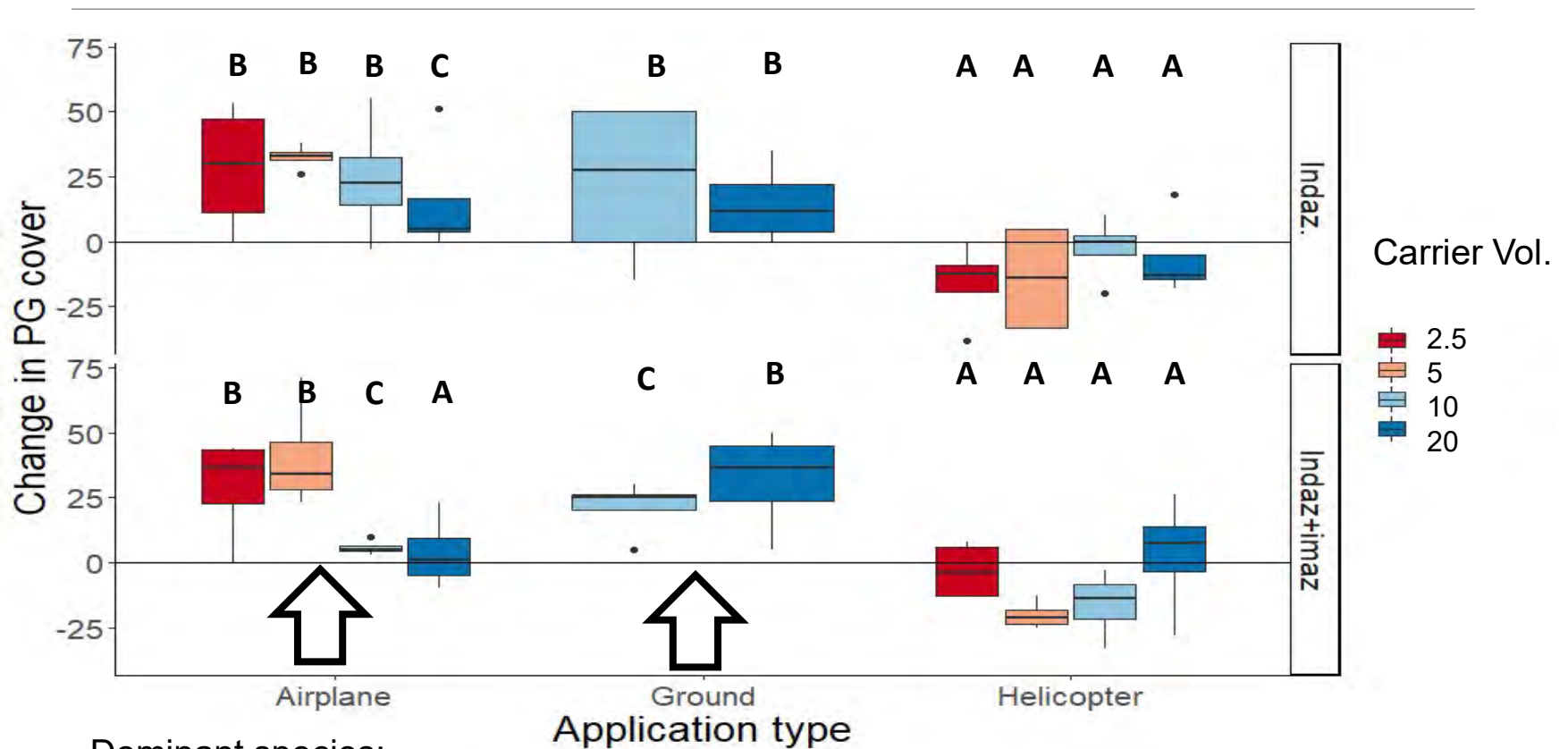


Annual Grass Control



Change in perennial grass cover

Change in PG cover = Post-trt – Pre-trt



Dominant species:

Pseudoroegneria spicata, , *Poa secunda*, *Leymus cinereus*, *Elymus elymoides*,
Achnatherum nelsonii

Medusahead



20 GPA
3 reps
Plots 10 x 30 feet

Treatment Protocol

Trt	Timing		Chemical	Rate (oz/A)
1	Sept. 2017	April 2018	Milestone	7
2	Sept. 2017	April 2018	Milestone	14
3	April 2018	Sept. 2018	Milestone	7
4	April 2018	Sept. 2018	Milestone	14
5	Sept. 2017	Sept. 2018	Milestone	7
6	April 2018	May 2019	Milestone	7
7	Mar. 2018	April 2019	Milestone Accord XRT II	14 12
8			Untreated	

July 2019
Untreated Plot
Tan is medusahead.



July 2018

Treatment 2

Green is meadow foxtail & wheatgrass. Red is ventenata & rattail fescue.



July 2019

Treatment 2

Green is meadow foxtail & wheatgrass. Tan is ventenata & rattail fescue.

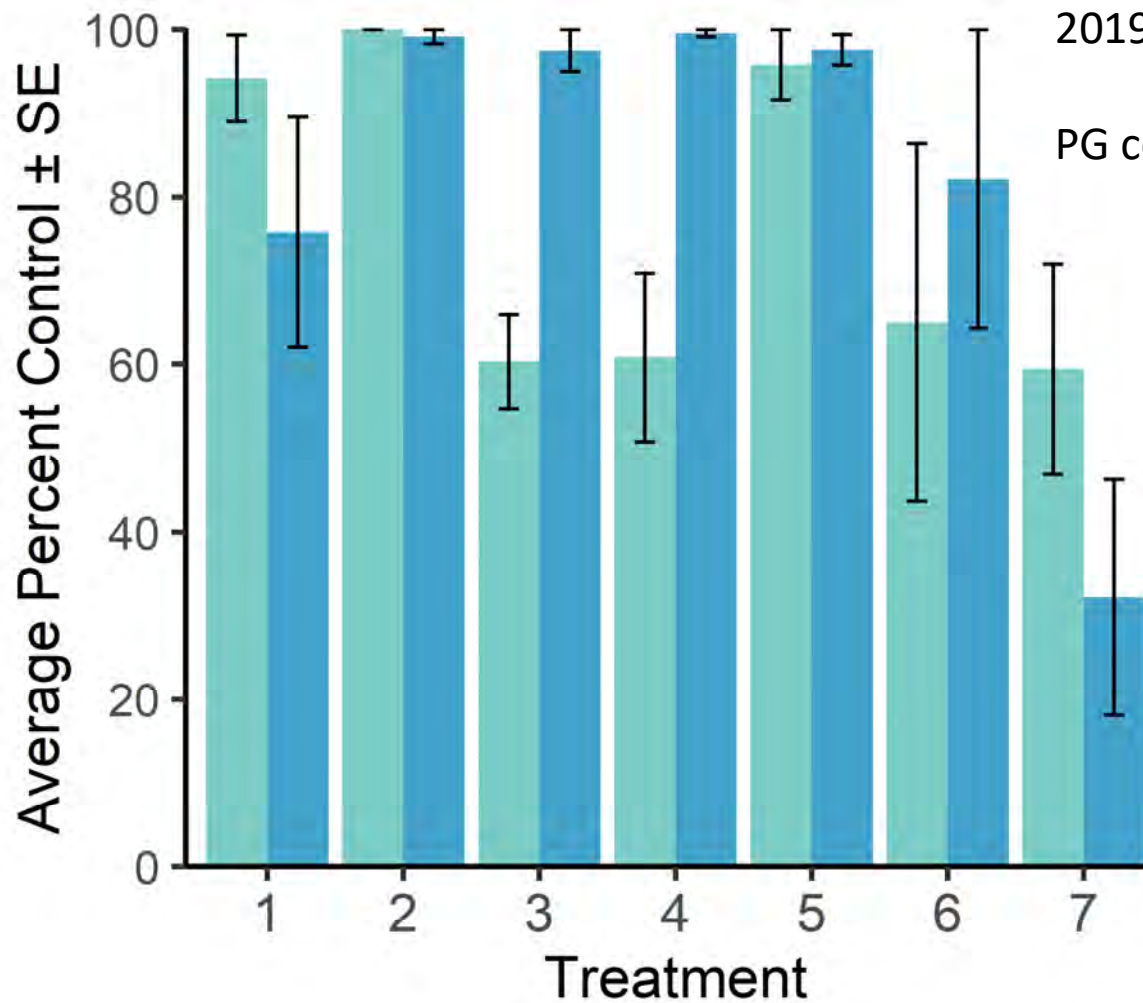


Control

2018: Best control with Trts 1, 2, 5

2019: Best control with Trts 1-6

PG cover not diff between Trts



Evaluation Year



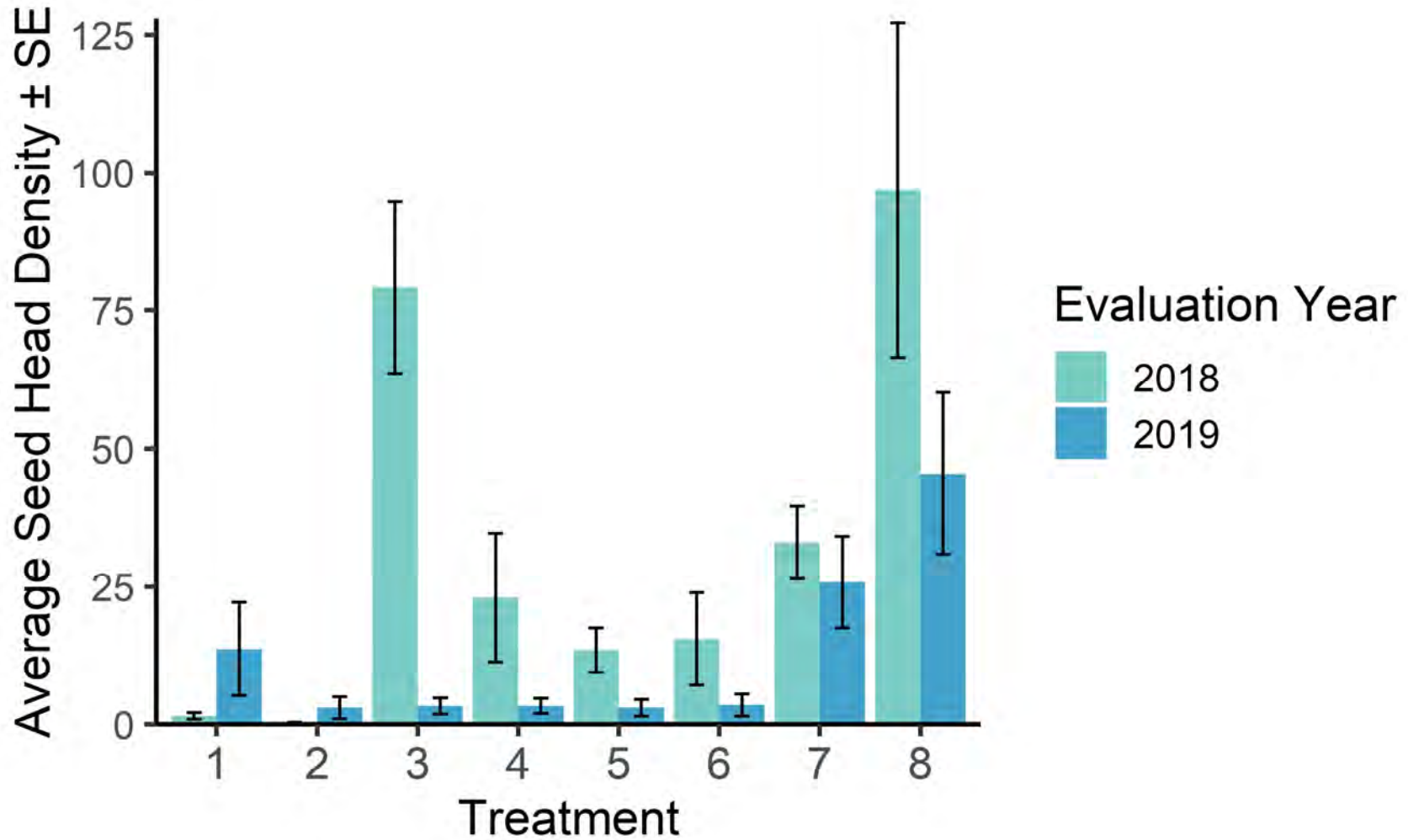
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5	Sept. 2017 Sept. 2018	Milestone	7
6	April 2018 May 2019	Milestone	7
7	Mar. 2018 April 2019	Milestone Accord XRT II	14 12
8		Untreated	

Density

Density is in a square foot

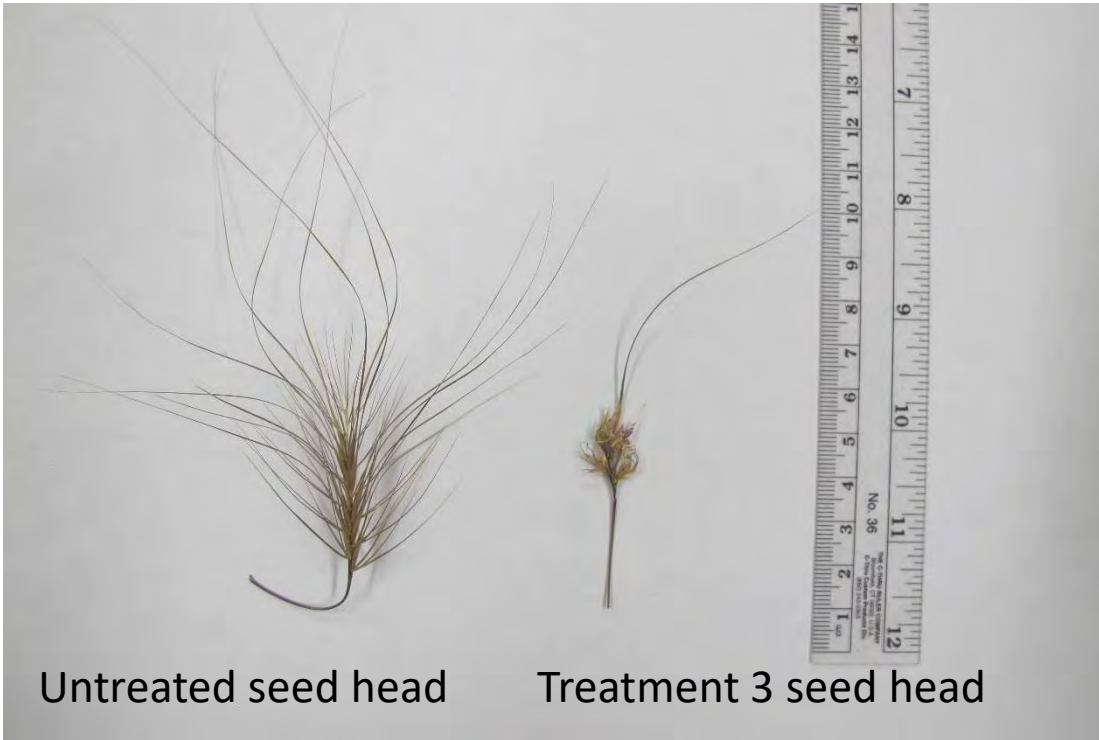
2018: Lowest density with Trts 1, 2, 4, 5, 6

2019: Lowest density with Trts 1-6



Growth Chamber





Untreated seed head

Treatment 3 seed head



Treatment 3 seed head

Untreated seeds



Treatment 3 seeds

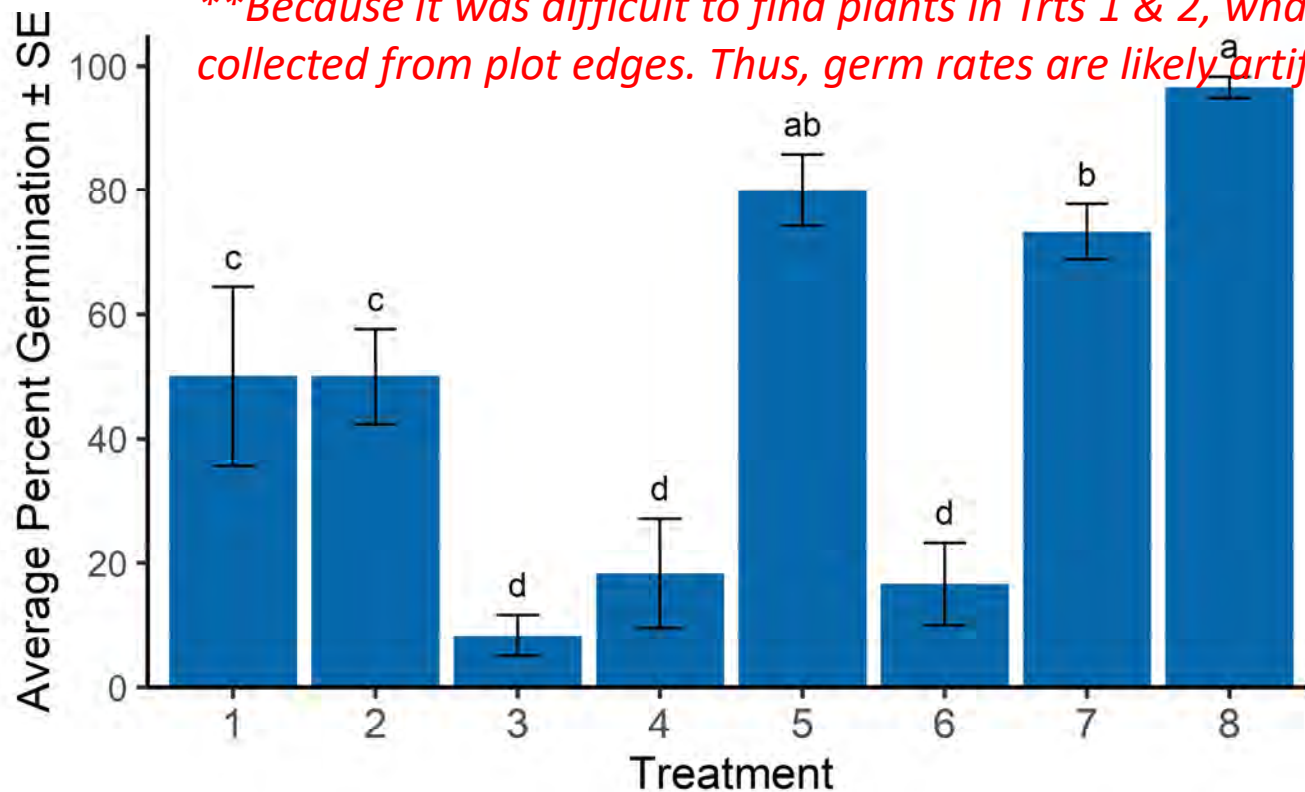


Germination

Lowest germination with Trts 3, 4, 6

These Trts only had 60% control after the first year, but what plants remained had deformed seeds. That, plus another application, resulted in greatly improved cont year 2.

***Because it was difficult to find plants in Trts 1 & 2, what was used here were plc collected from plot edges. Thus, germ rates are likely artificially high.*



A landscape photograph featuring rolling hills in the background, some covered in green vegetation and others in golden-brown grass. In the foreground, several tall sunflowers with bright yellow petals and dark brown centers stand prominently. The sky is a pale, hazy blue, suggesting a soft light from either dawn or dusk. The overall mood is peaceful and scenic.

Thank you