

# **Identification of Herbicides for Use in Native Forb Seed Production**

**Corey Ransom  
Kim Edvarchuk**

**UTAH STATE UNIVERSITY**

# **Complementary Research at USU**

- 1. Herbicide tolerance of perennial grasses.**
- 2. Herbicides for foxtail barley and downy brome management.**
- 3. Previous and current work on identifying specific herbicides to improve weed control efficacy and pursuit of expanding herbicide labels.**

# **Objective and Approach**

**1. Identify herbicides that could be used for weed control in native forb seed production**

**A. Phase I. Initial herbicide screening.**

**B. Phase II. Dose response trials**

**C. Phase III. Field trials**

# Initial Preemergence Herbicide Screen

- 50 seeds per 1 ft<sup>2</sup> flat 0.25" deep.
- 50/50 Kidman sandy loam with peat and vermiculite potting soil.
- sprayed in chamber at 20 gpa.
- Crepis* stored at 34 F for 3 weeks.
- evaluated 4 weeks after treatment.

## Species:

*Astragalus filipies*

*Crepis acuminata*

*Dalea ornata*

*Dalea searliae*



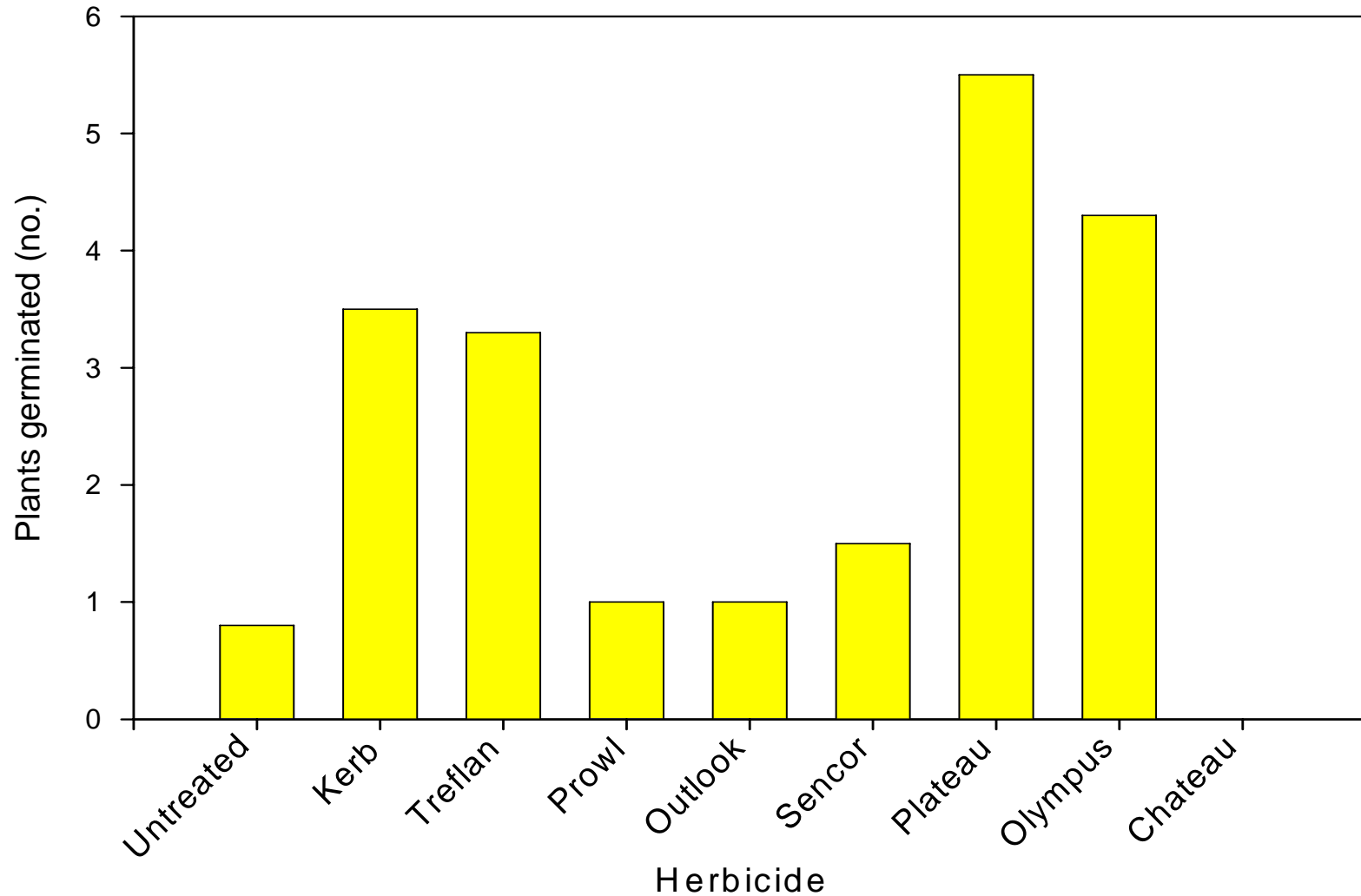
# Preemergence Herbicides and Rates

<b>Herbicide</b>	<b>Rate (lb ai/A)</b>
<b>Kerb</b>	<b>1.0</b>
<b>Treflan</b>	<b>0.375</b>
<b>Prowl H<sub>2</sub>O</b>	<b>0.75</b>
<b>Outlook</b>	<b>0.656</b>
<b>Sencor</b>	<b>0.375</b>
<b>Plateau</b>	<b>0.0625</b>
<b>Olympus</b>	<b>0.0267</b>
<b>Chateau</b>	<b>0.047</b>

---



# *Crepis acuminata* Germination





# *Crepis acuminata* Symptoms

**Kerb**



**Sencor**



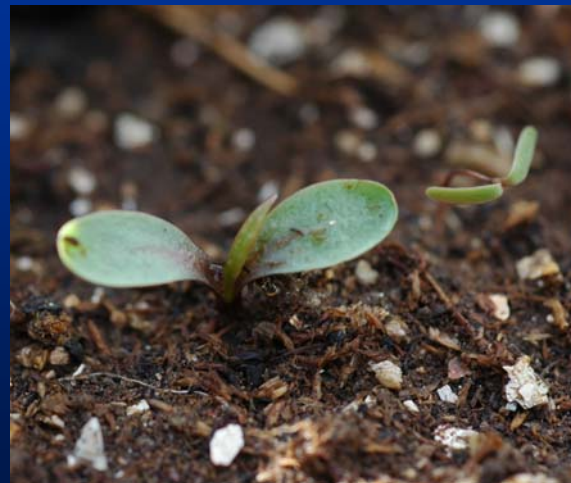
**Treflan**



**Untreated**



**Olympus**



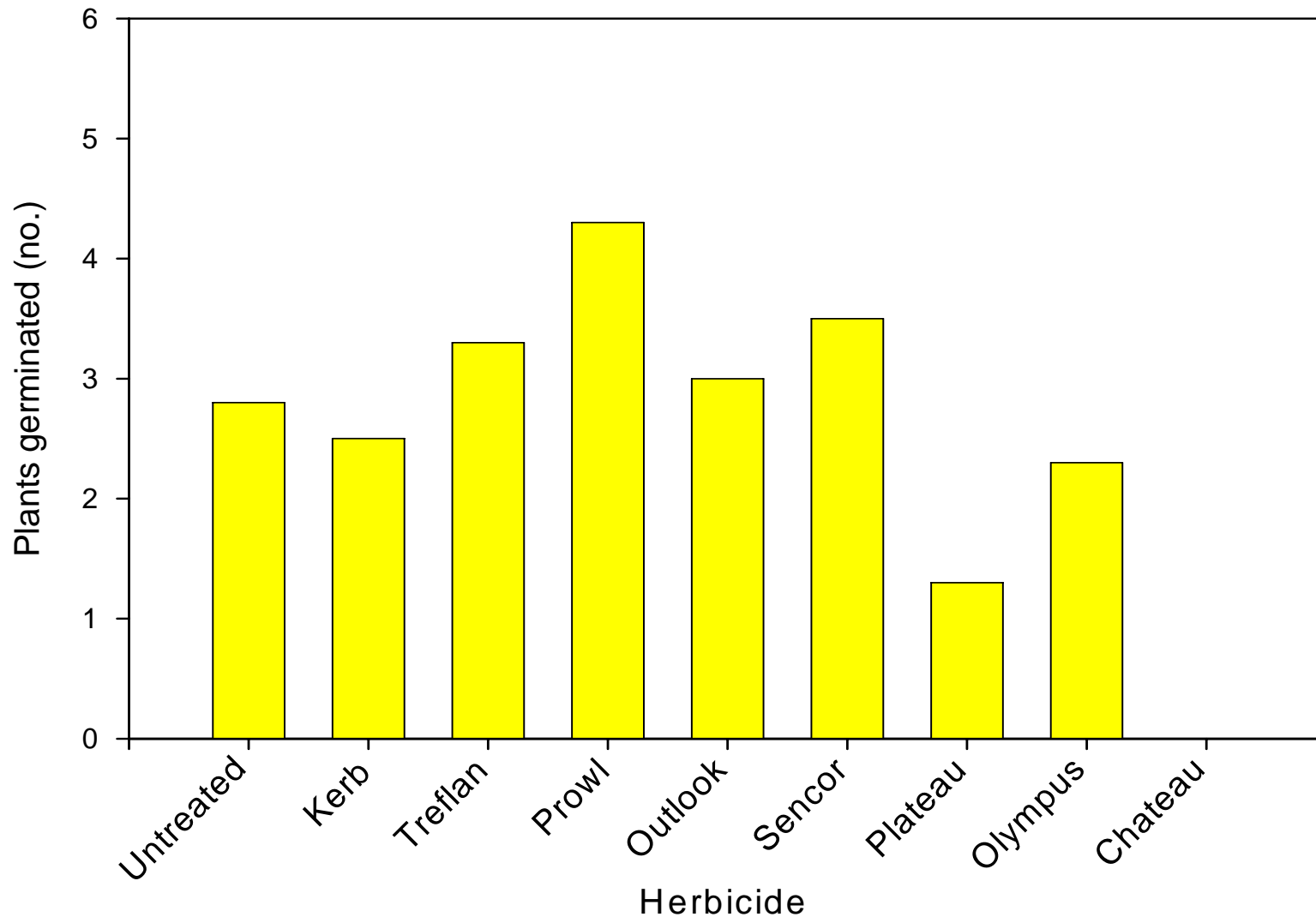
**Prowl H<sub>2</sub>O**



**Plateau**



# *Astragalus filipies* Germination





# *Astragalus filipies* Symptoms

Prowl H<sub>2</sub>O



Outlook



Olympus



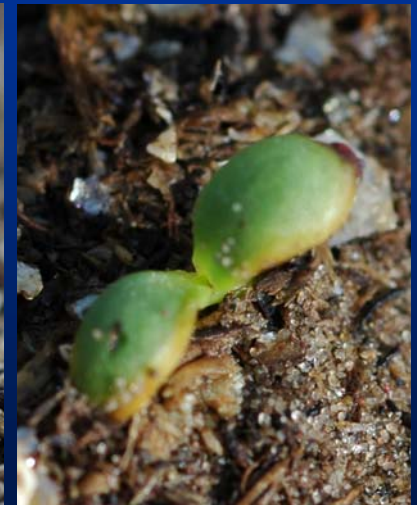
Treflan



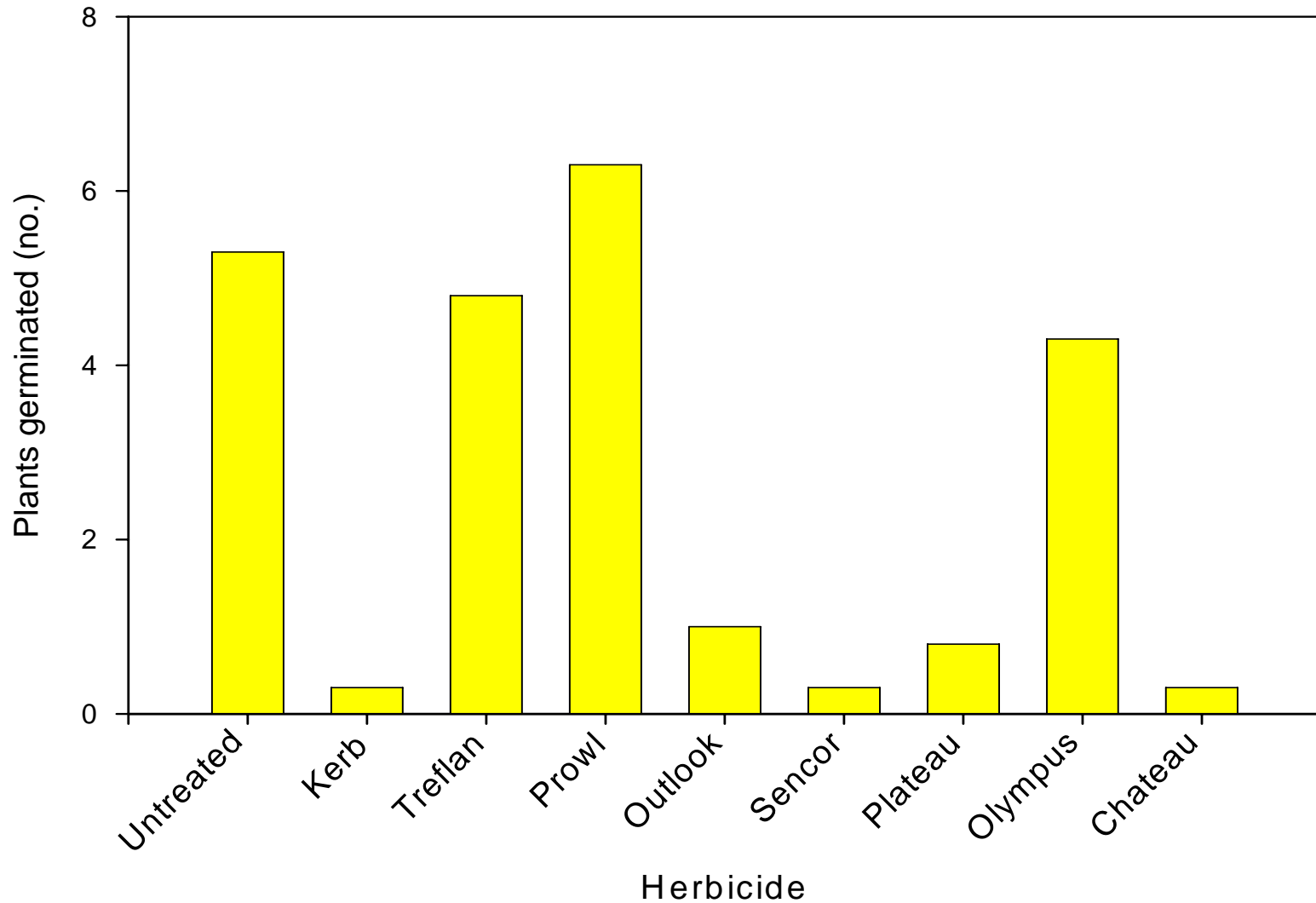
Sencor



Kerb



# *Dalea ornata* Germination



# *Dalea ornata* Symptoms

**Prowl H<sub>2</sub>O**



**Outlook**



**Treflan**



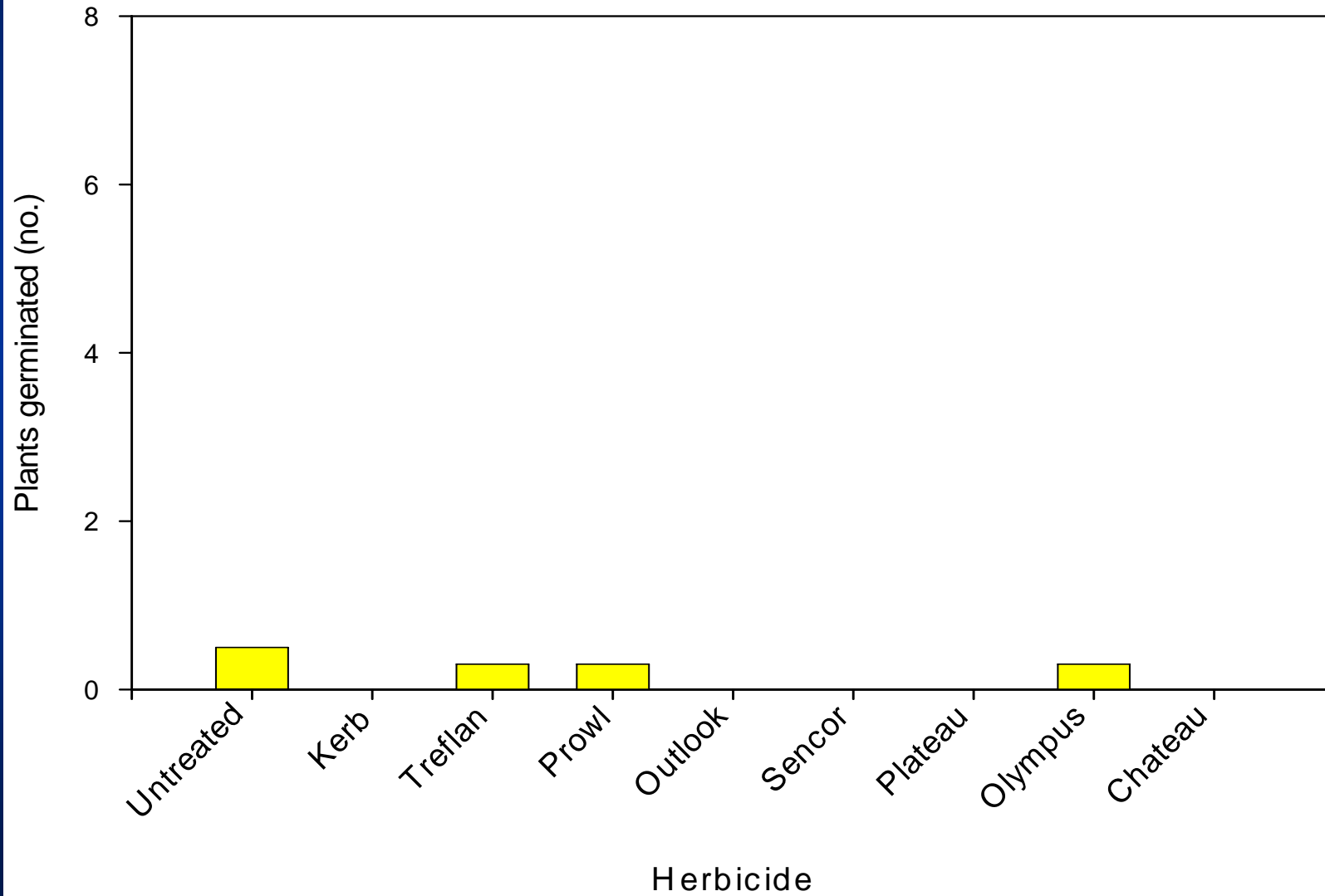
**Untreated**



**Olympus**



# *Dalea searlsiae* Germination





# Conclusion – Preemergence Herbicide Screen

1. Seed germination for all species is poor.
2. *Crepis* germination with Kerb, Treflan, Plateau, and Olympus is positive, but plant health will have to be monitored.
3. At this point *Astragalus* germination is fair with all herbicides except Chateau. Plant health looks best with Prowl.
4. *Dalea ornata* germination is greatest with Treflan, Prowl, and Olympus. Olympus will likely have detrimental effects on additional plant growth.
5. *Dalea searlsiae* germination is too low to evaluate.

# Treatments for Postemergence Herbicide Screen

## Herbicide

---

Raptor

Pursuit

Plateau

Buctril

Basagran

2,4-DB

Select

Kerb ?

MCPA-Amine?

Paramount – bindweed?

---


Uniformity of seed germination will be addressed in the postemergence trials by overplanting or transplanting prior to herbicide application.

Additionally, an established *Astragalus filipies* variety trial will be used to test tolerance of established plants to postemergence herbicides. (Doug Johnson)



# Current and Future Challenges

1. Limited seed.
2. Low and erratic germination (GH and field).
3. Insect management in the greenhouse?
4. The challenge to get herbicide registrations for small acreage forb seed production.



Research support from:  
USDI BLM Great Basin Restoration Initiative,  
GBNPSIP, and  
USDA FS Rocky Mountain Research Station