Pasture Weed Management

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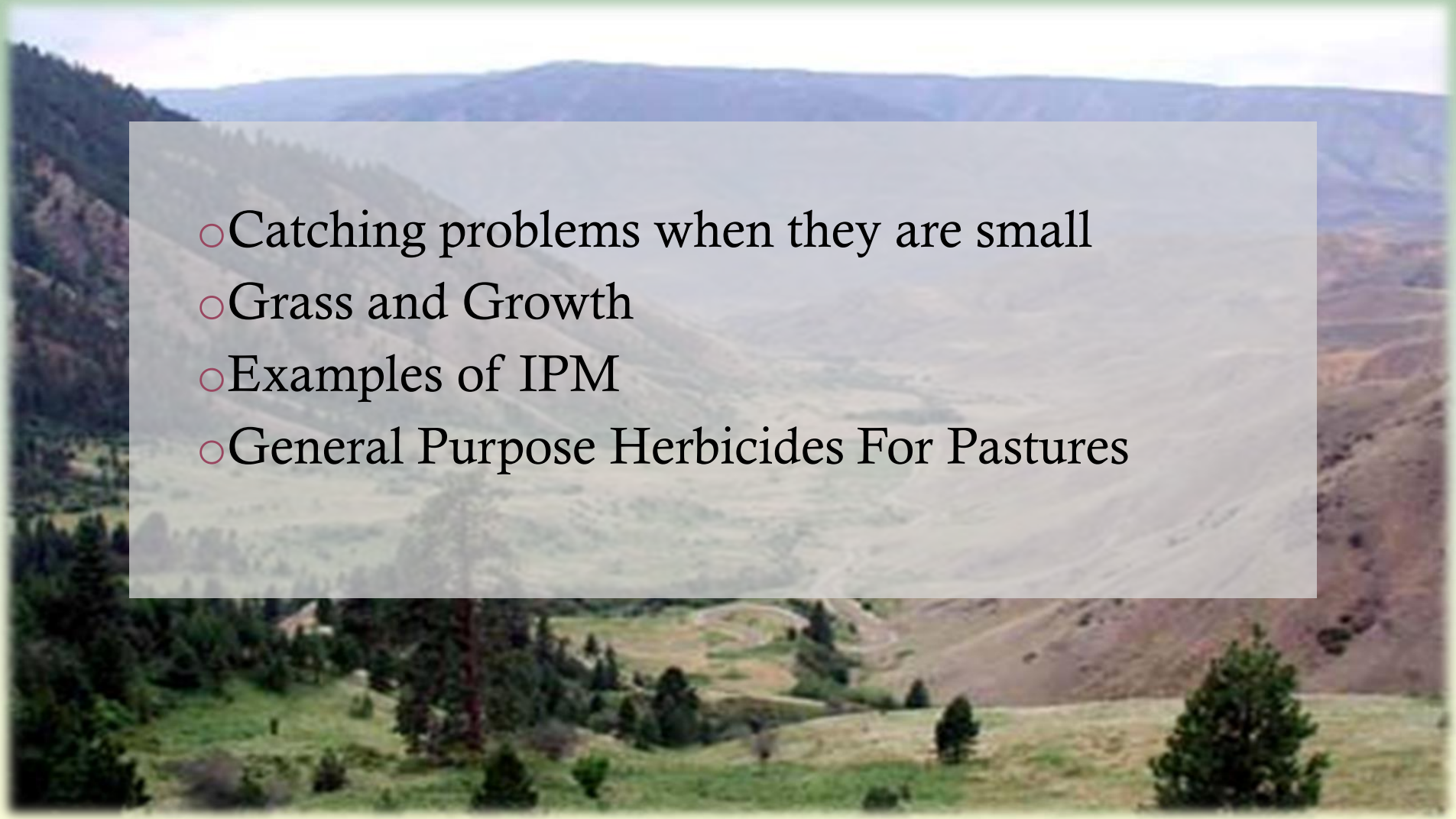
Outline

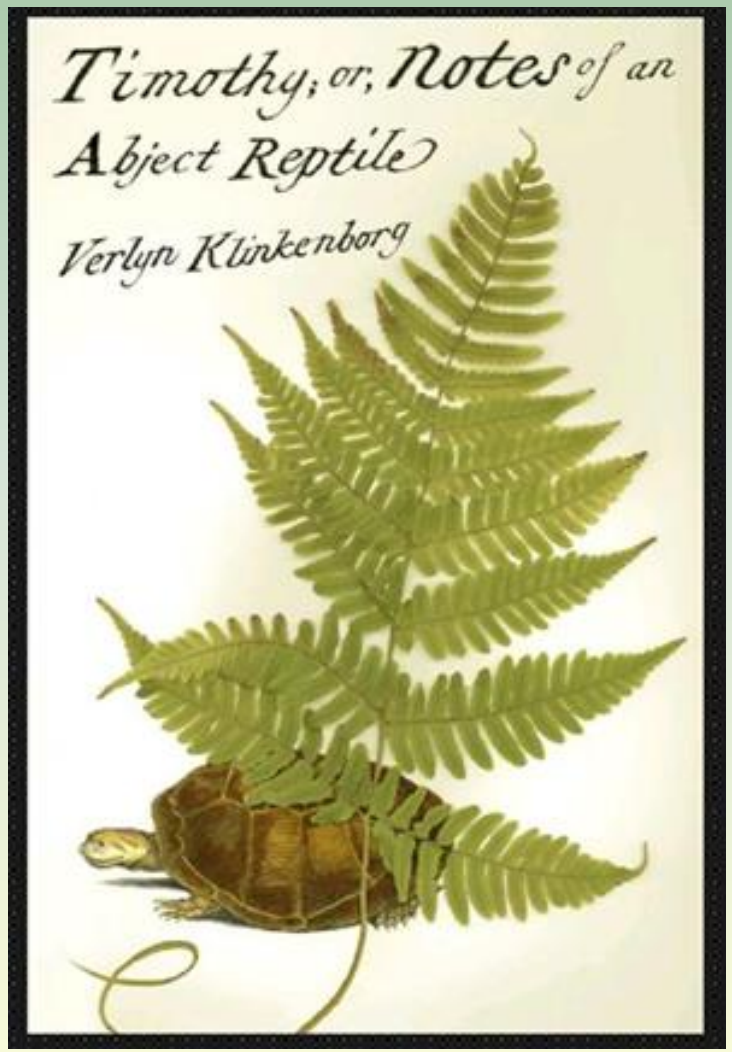


- Catching problems when they are small
- Grass and Growth
- Examples of IPM
- General Purpose Herbicides For Pastures

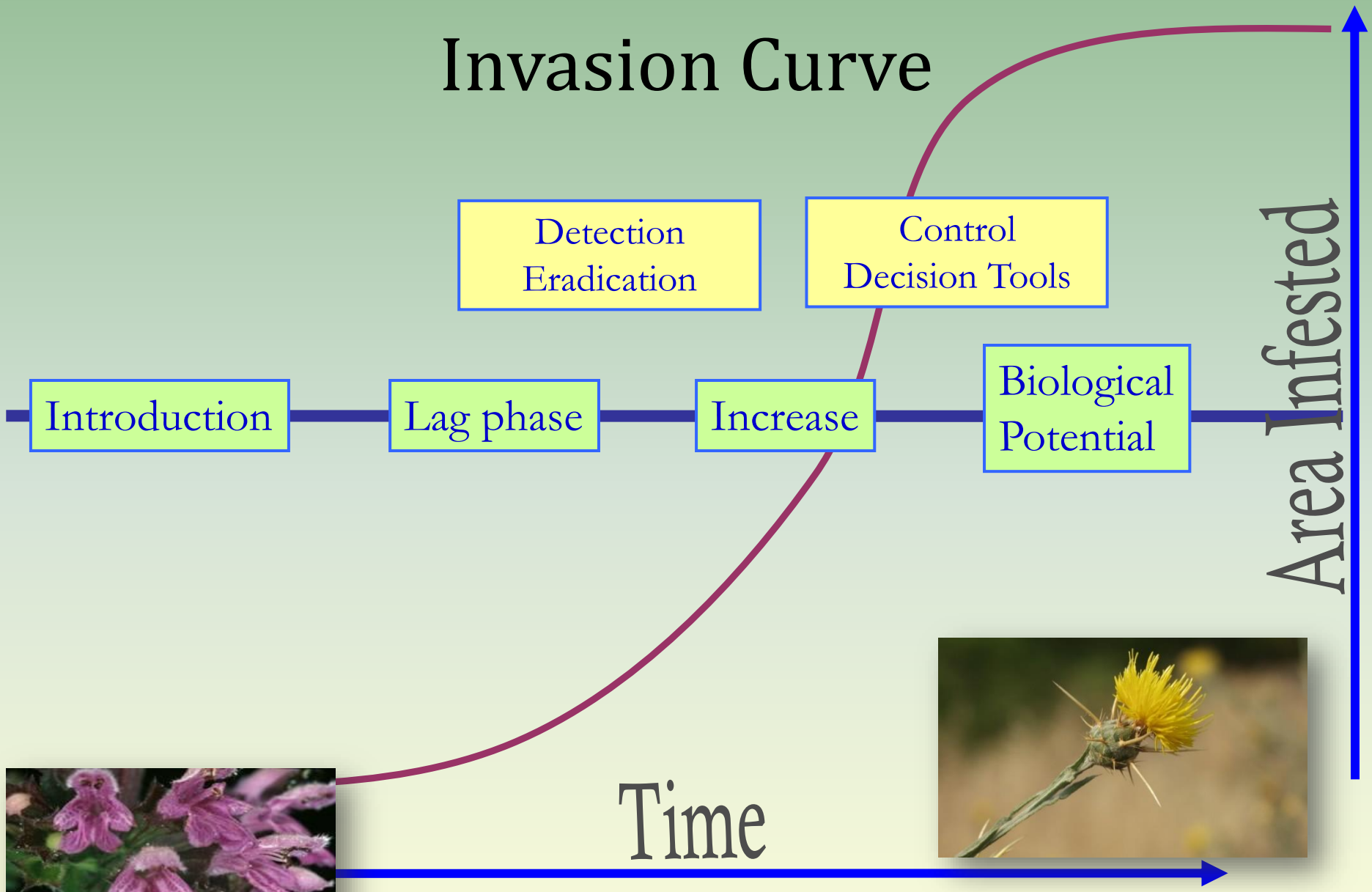
A Lesson on Dispersal

How did I escape?

- It helps if they leave the wicket gate open.
- I move through the holes in their consciousness. My slowness is deceptively fast.



Invasion Curve



Adapting Survey to Risk Gradient

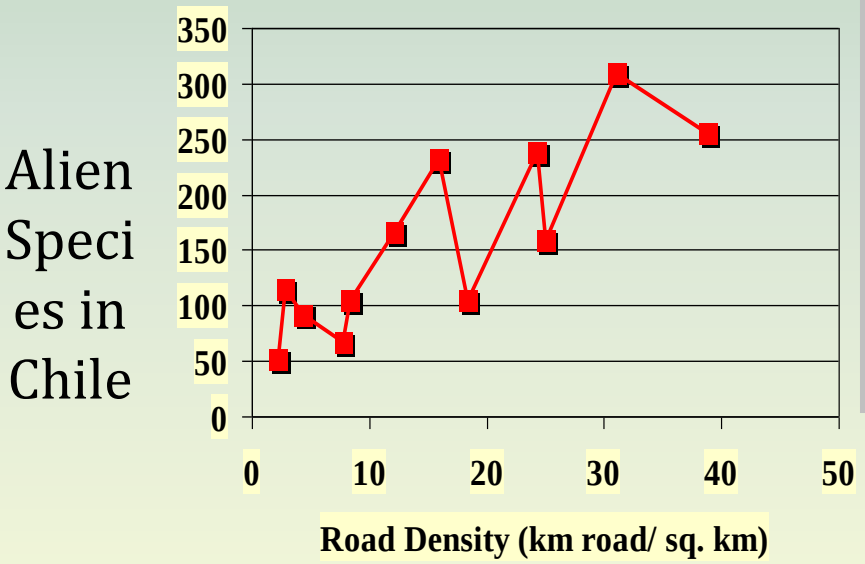
Susceptibility

Forests → Grasslands

Biomass and environmental changes affect weed survival and movement

Adapting Survey to Risk Gradient

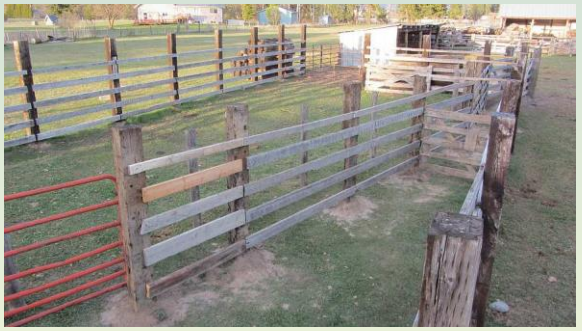
- Pathways/Vectors
- Infrequent → Frequent/High Activity



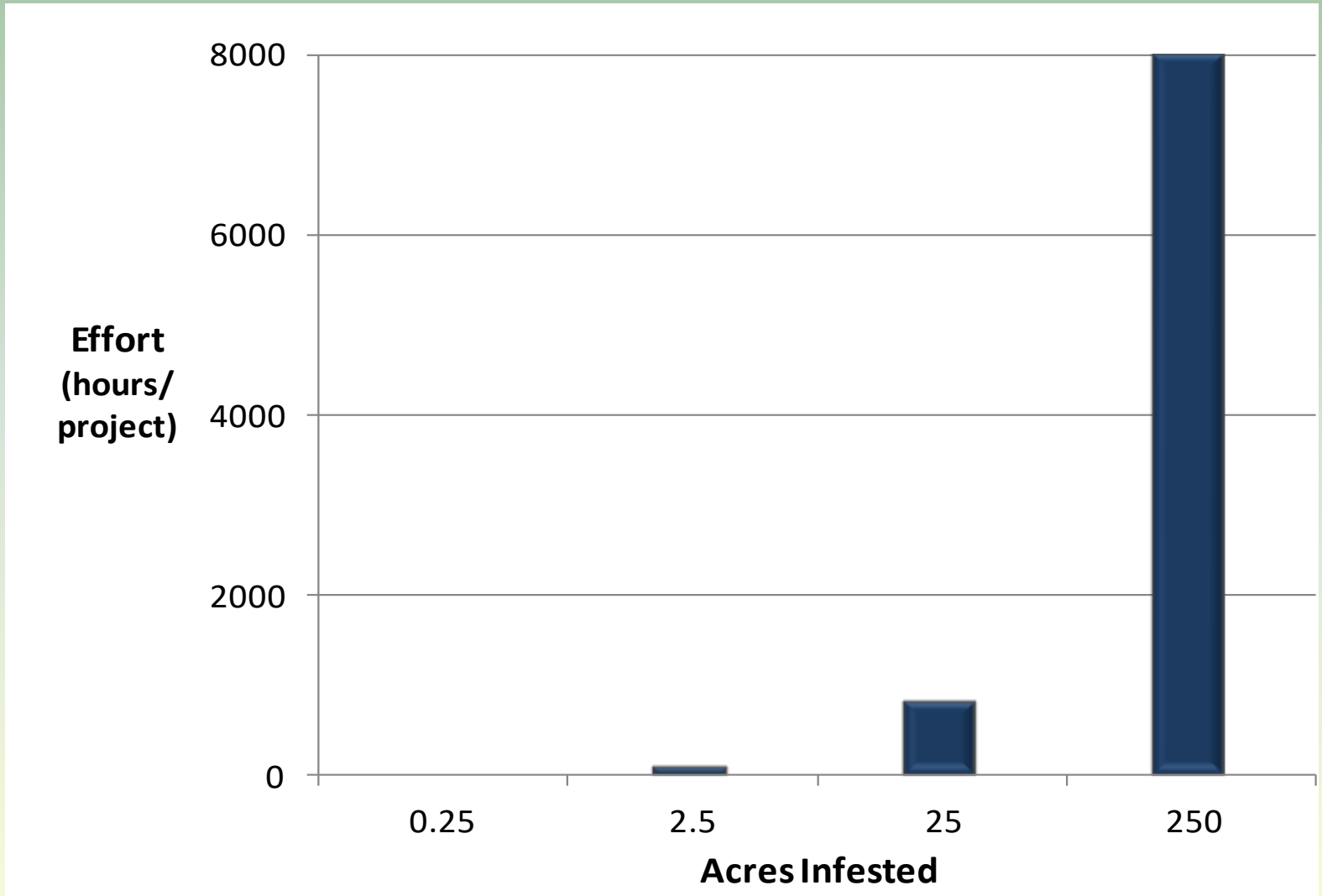
Role of Roads in Dispersal, type of road, activity level

Where do I look?

- Road sides, rivers/streams, trails
- Equipment yards
- Livestock loading areas
- Hay - feeding

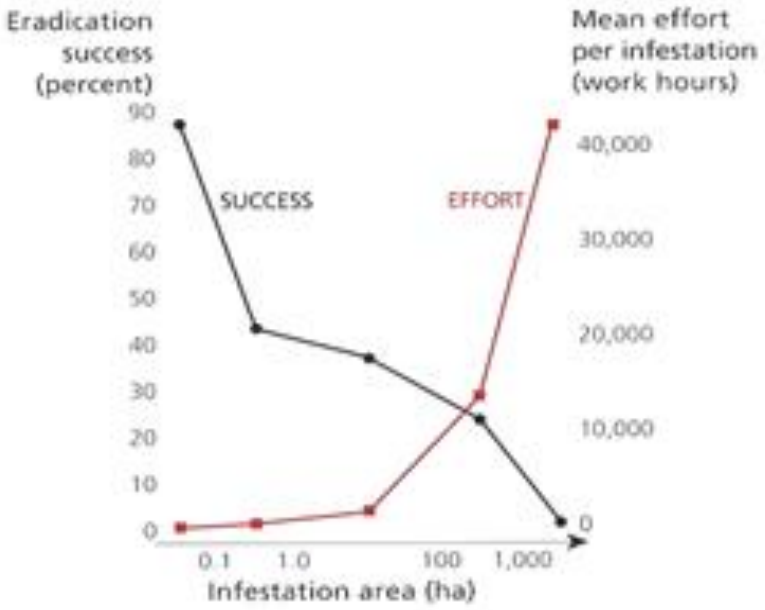


Catch it Early!



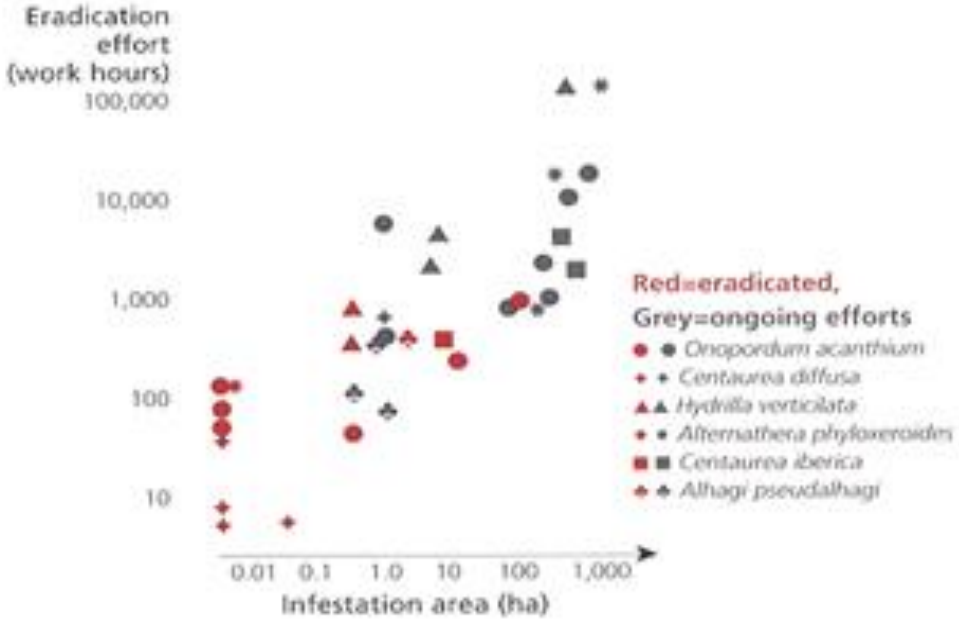
Early detection makes all the difference.

In this dataset, infestations larger than 1000 ha were unlikely to be eradicated using a realistic investment of resources.



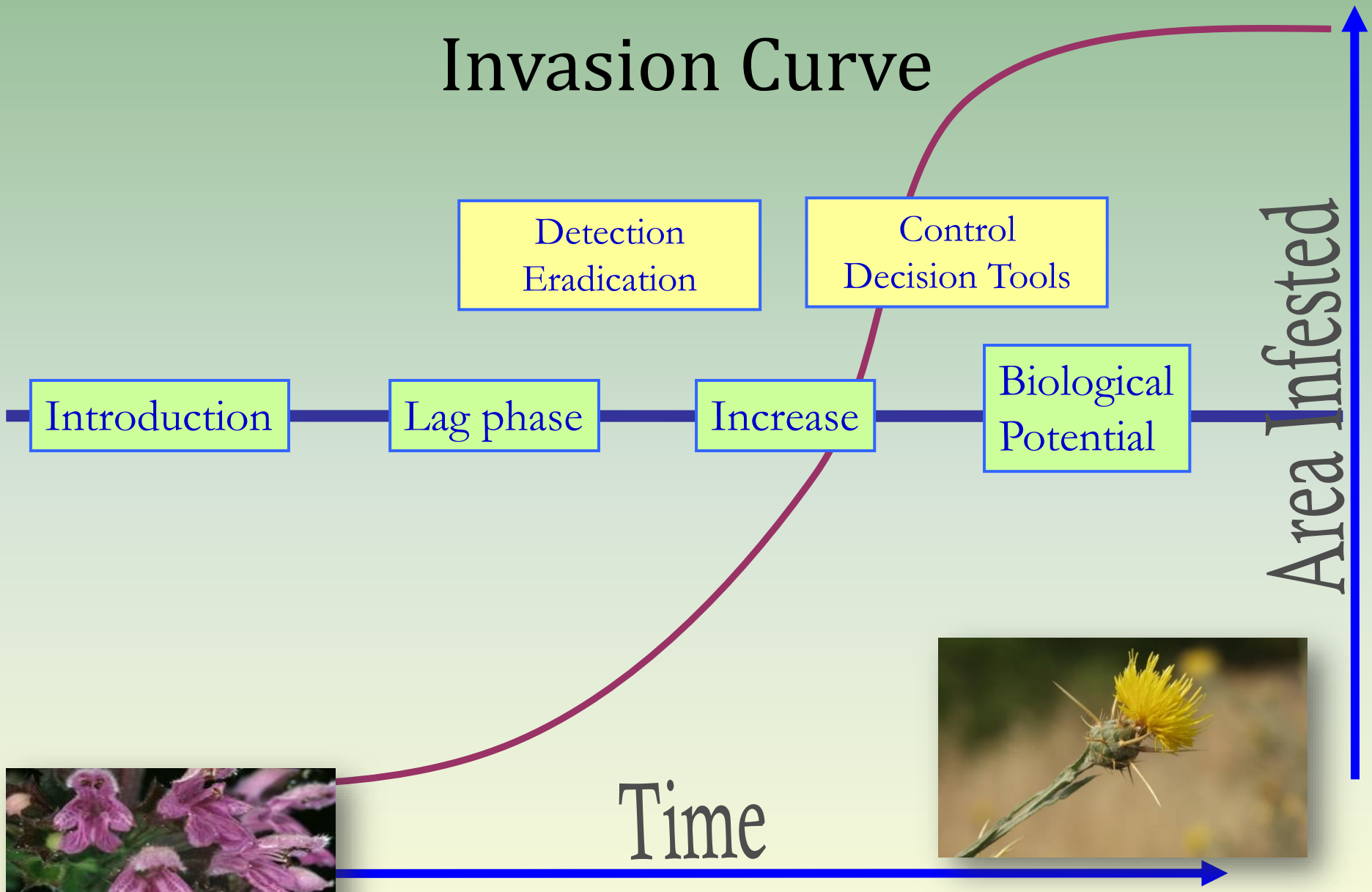
Evaluating the battlefield: Attack or defend?

Early offensive strategies pay off regardless of species; six different noxious weeds in California were successfully eradicated when efforts started early.



Based on a 28-year data set of eradication attempts by the California Department of Food and Agriculture on 18 species and 53 separate infestations targeted for eradication between 1972-2000. Adapted from Rejmánek, M. and M.J. Pitcairn. 2002 (**2**).

Invasion Curve



Pasture Management

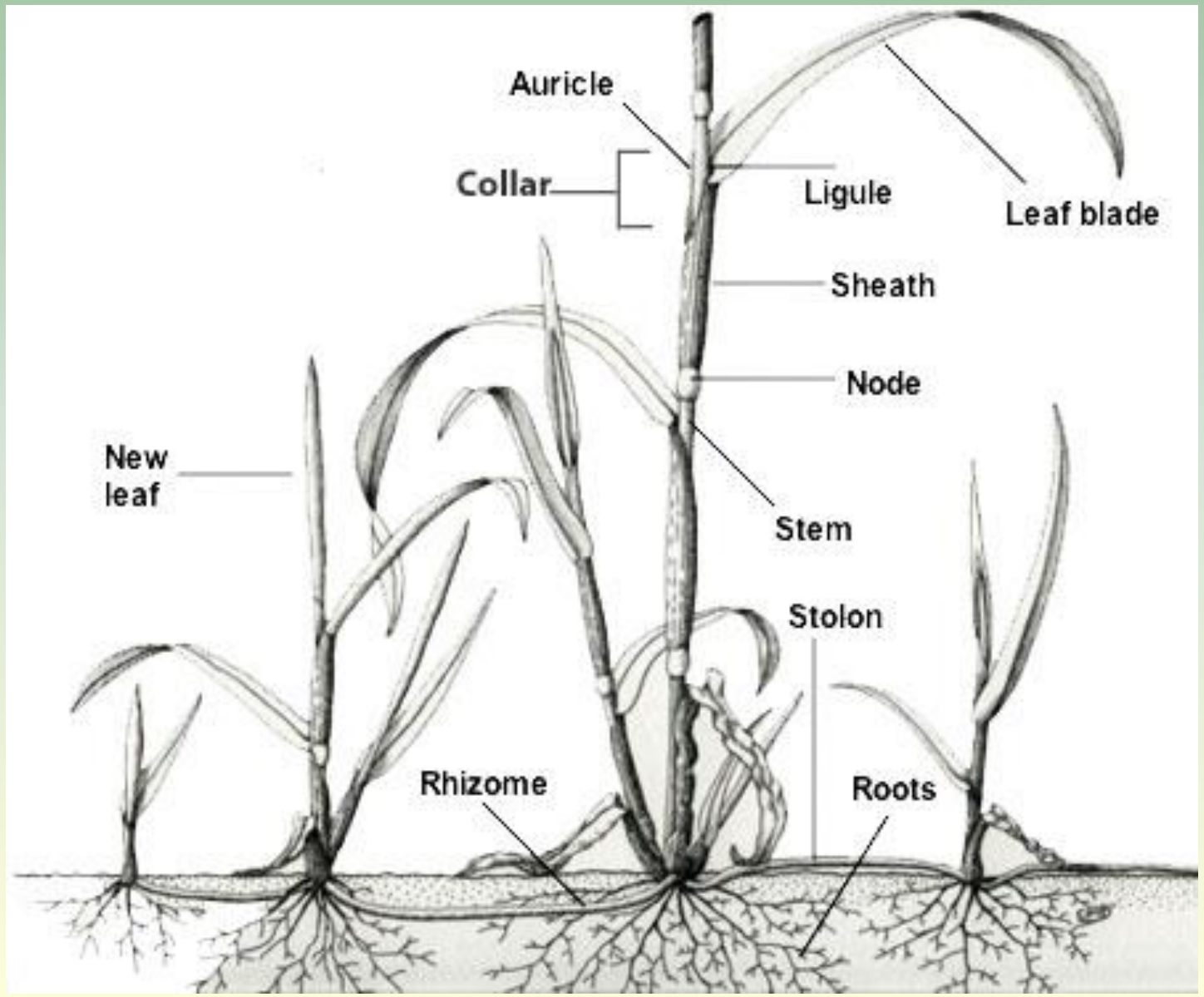
Goals for Control

I. Which weeds interfere with my goals?
II. Can I take care of several at once?
    1. Winter annuals
    2. Spring annuals
    3. Herbicide choice :
        a. Broad spectrum
            i. Cimarron Max (broad spectrum of plants controlled
            ii. Tordon
        b. Narrow spectrum
            i. Transline
            ii. Grass herbicides

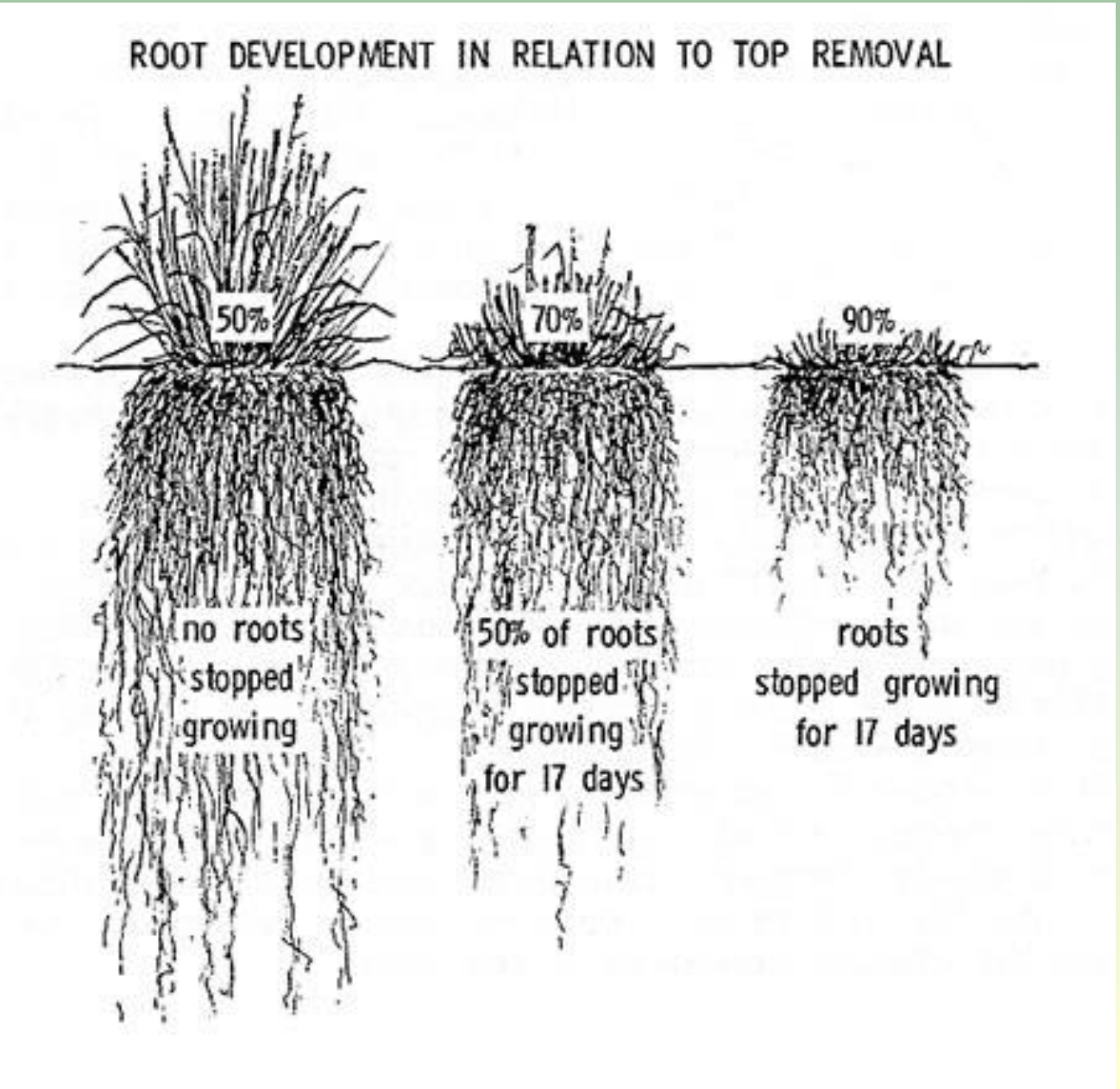
Tactics for Control

III. How can I incorporate other strategies?
    1. Integrated Pest Management
        a. Use fertilization when in pasture
        b. Managing grazing
        c. Biological Control
        d. Incorporate fire
        e. Reseeding

Grass Review

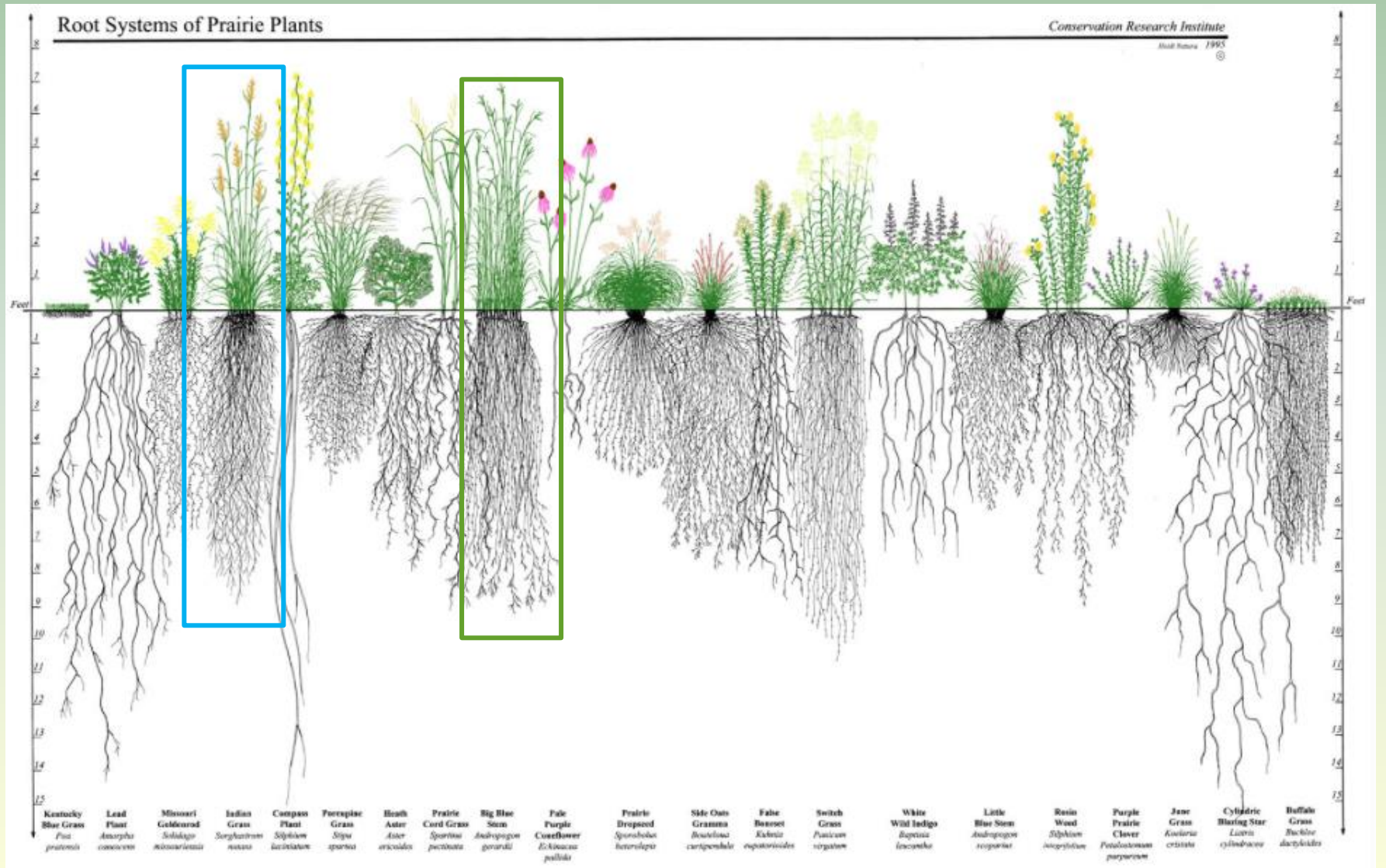


Grass Response to Grazing

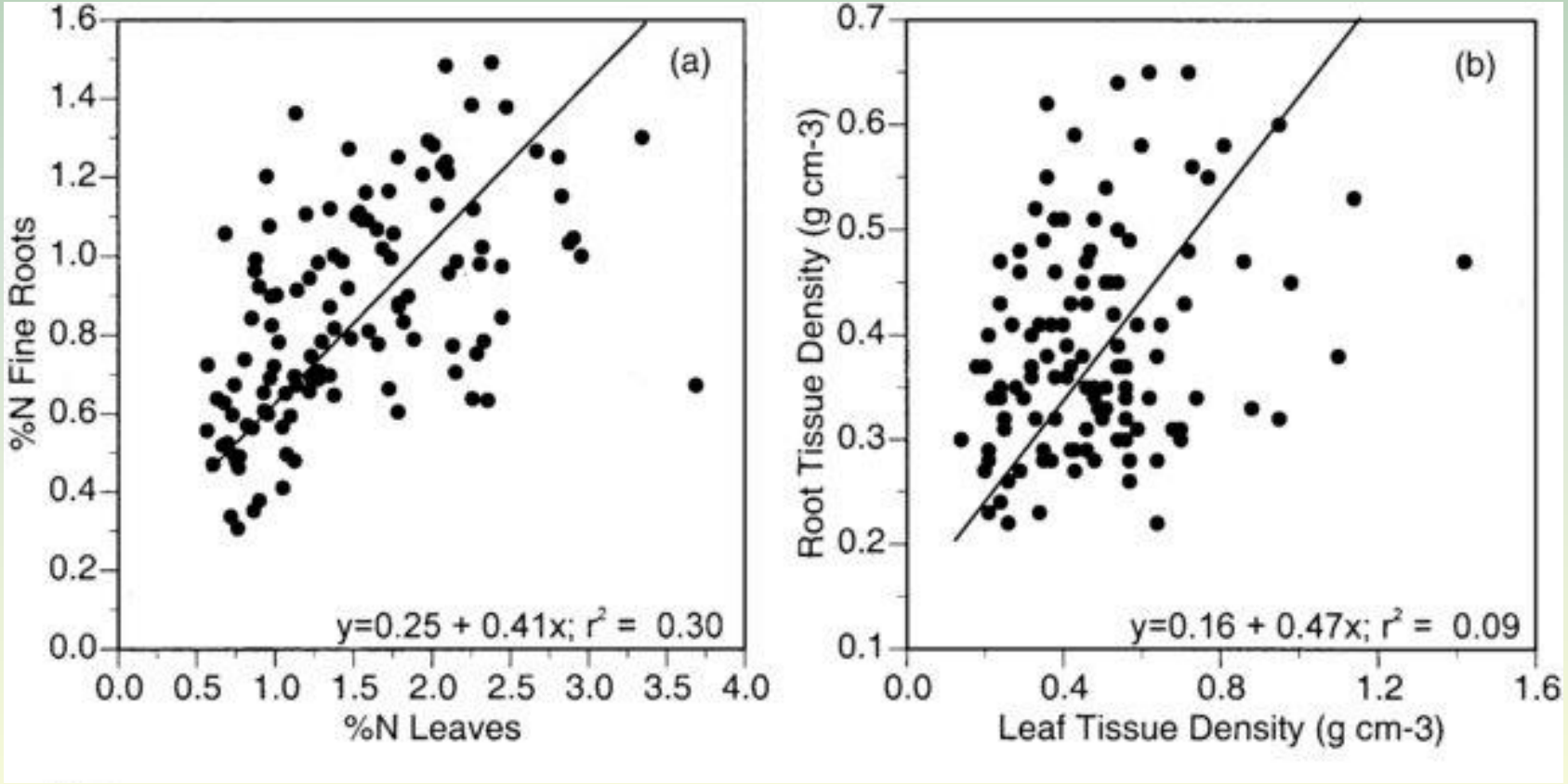


Health of Grass Roots

Preference For Grazing



Relationship of Roots to Forage Quality



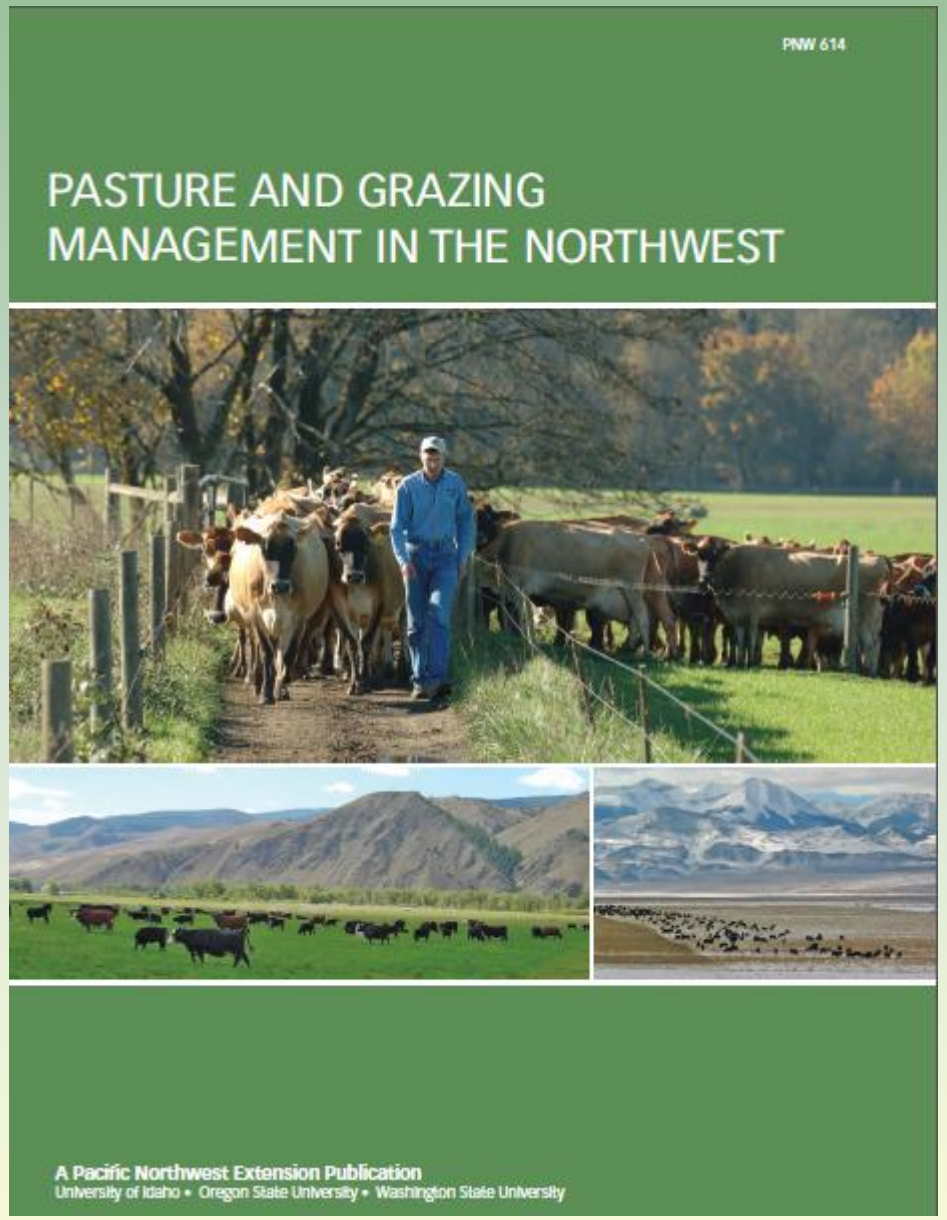
Managing Pastures

Integrated Pest Management

A. Grass Competition
    a. Use fertilization when in pasture
    b. Managing grazing
B. Incorporate fire when practical
C. Herbicides for Weed Control
D. Biological Control

Pasture Manual

- http://www.cals.uidaho.edu/edcomm/pdf/PNW/PNW0614.pdf
- Theme for me, leave 4 inches



Estimate height where 90% of grass is below that height

Grass	75% to 90%	90%
Bromes	250*	350
Tall Fescue	300	350
Orchardgrass	300	400
Wheatgrass	300	400
Ryegrass	300	400

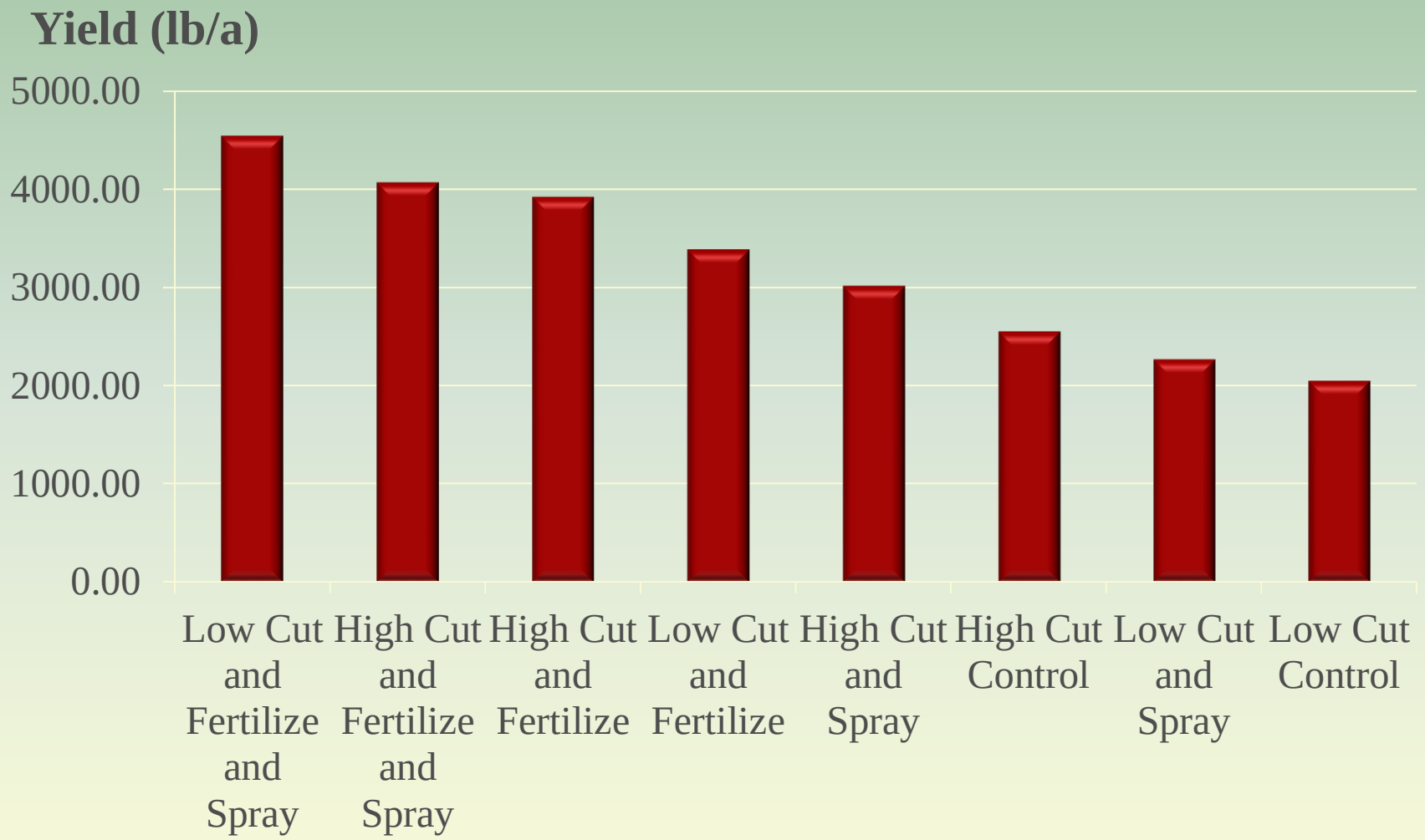
*Pounds /acre per inch

Range and Pasture

Grass	Start	Stop	Season	Regrowth
Bromes	8	4	Sp - F	Good
Tall Fescue	6	4	Sp,F	Good
Orchardgrass	8	4	Sp - F	Good
Wheatgrass	8	4	Sp - F	Good
Ryegrass	8 to 10	3	Sp, Su	Good

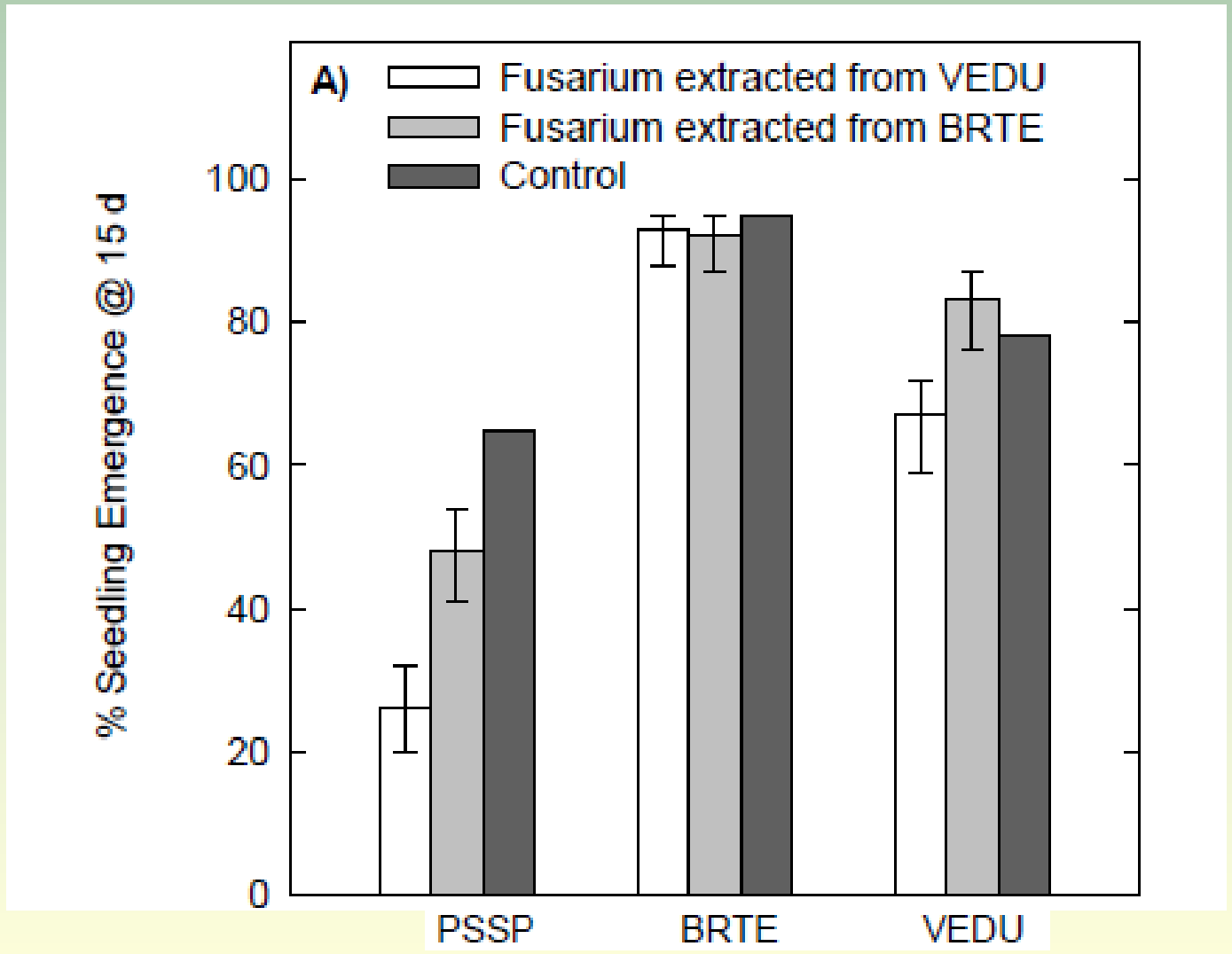
Example:
Brome is 80% canopy and 9 inches tall.
Estimated amount available is (9-4)*(250)= 1,250 lbs/ac

Cut Height and Yield



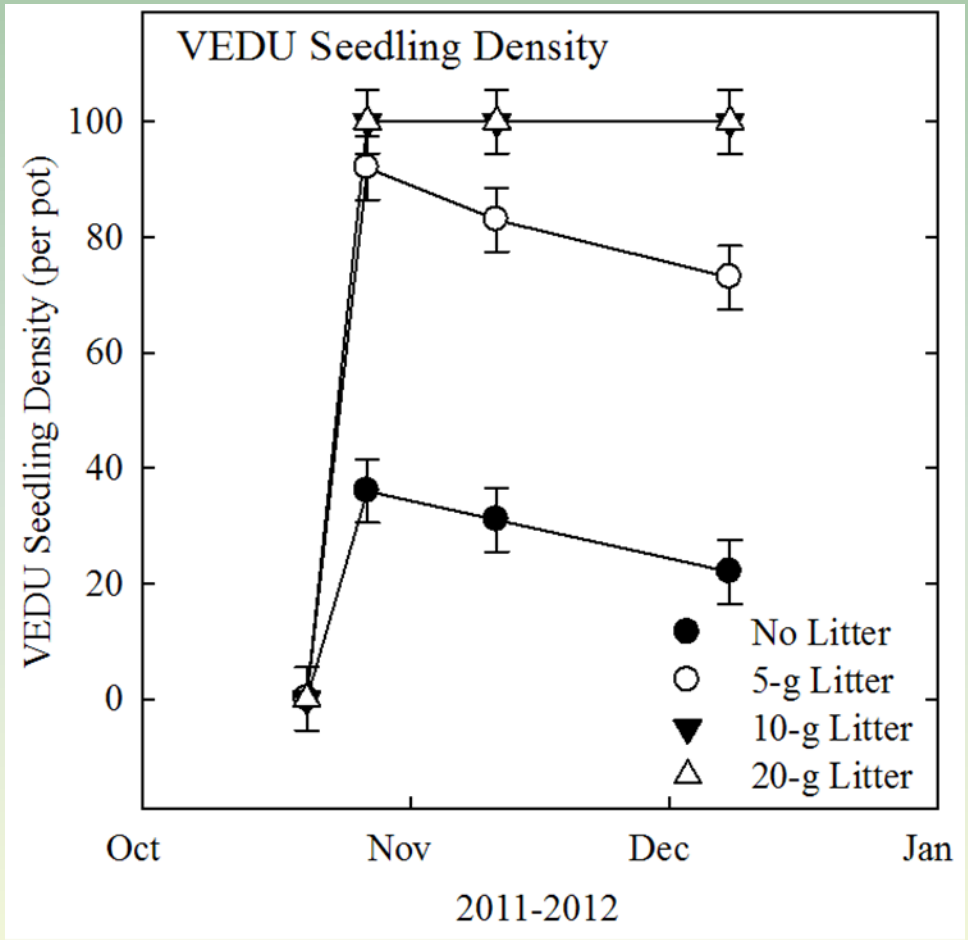
Ventenata Control after 5 oz/A of Plateau 3 Months After Treatment

Emergence


A)
Fusarium extracted from VEDU
Fusarium extracted from BRTE
Control
% Seedling Emergence @ 15 d
100
80
60
40
20
0
PSSP
BRTE
VEDU

Why is Ventenata Dominating?

- Litter protects seedlings
  - 65% of seedlings die without litter during winter
  - Nearly all seedlings survive if there is litter

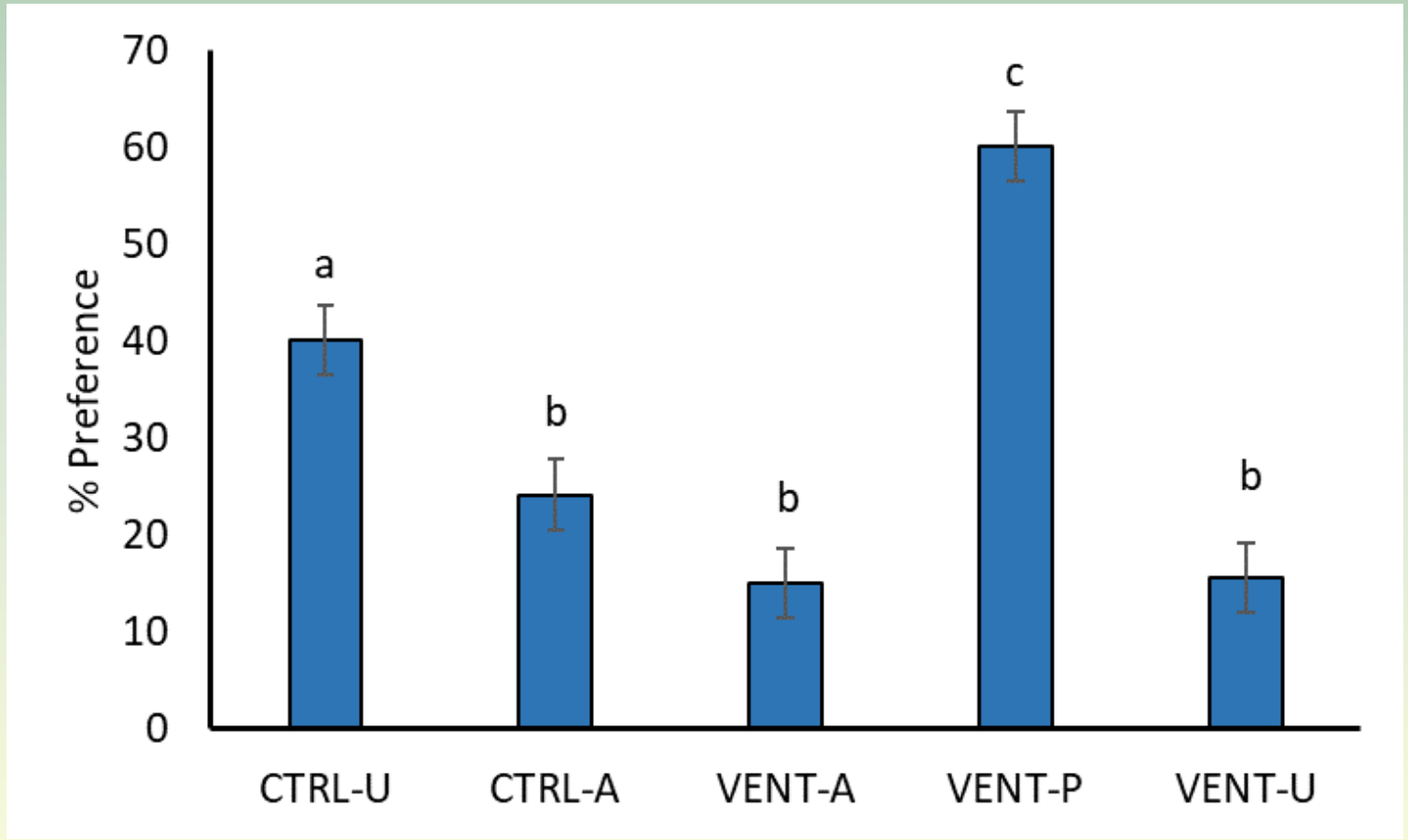


15 Months After Treatment

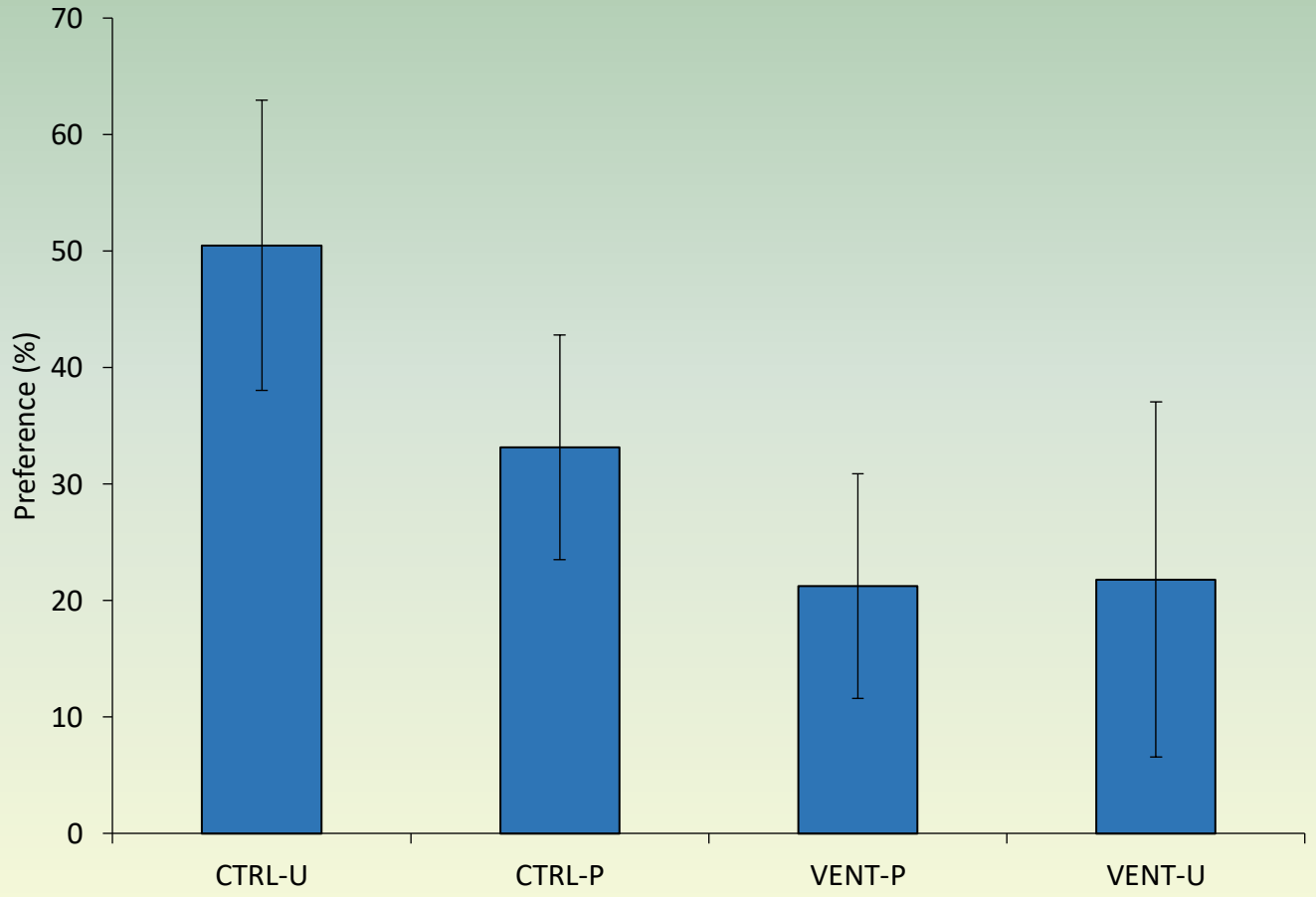
Ventenata
Comparison with Timothy Hay

Quality	ADF	Vent	NDF	Vent	CP	Vent	TDN	Vent
1	31-35		40-46		17-19		>62	
2	36-40		47-53		14-16		62	
3	41-42		54-60		11-13		58	
4	43-45	45	61-65		8-10		51	54
5	>45		>65	66	<8	5.5	38	

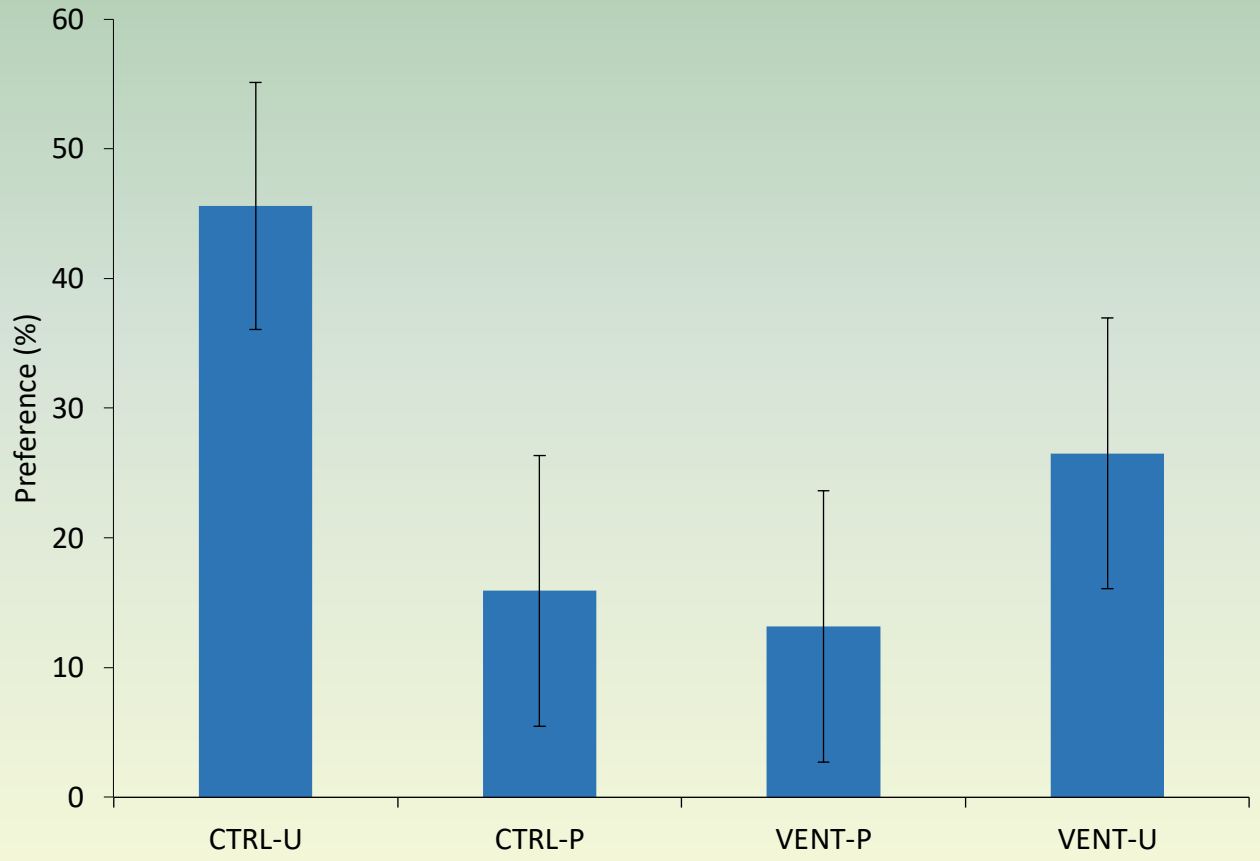
Weaned Charolais Preference



Mature Sheep Preference



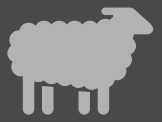
Mature Goat Preference



Feeding Trial Take Home

Cattle do not like ventenata

Making pellets overcomes avoidance



Sheep do not like ventenata

Making pellets does not help

Goats will eat ventenata – go figure

Low Ventenata – Fall Burn

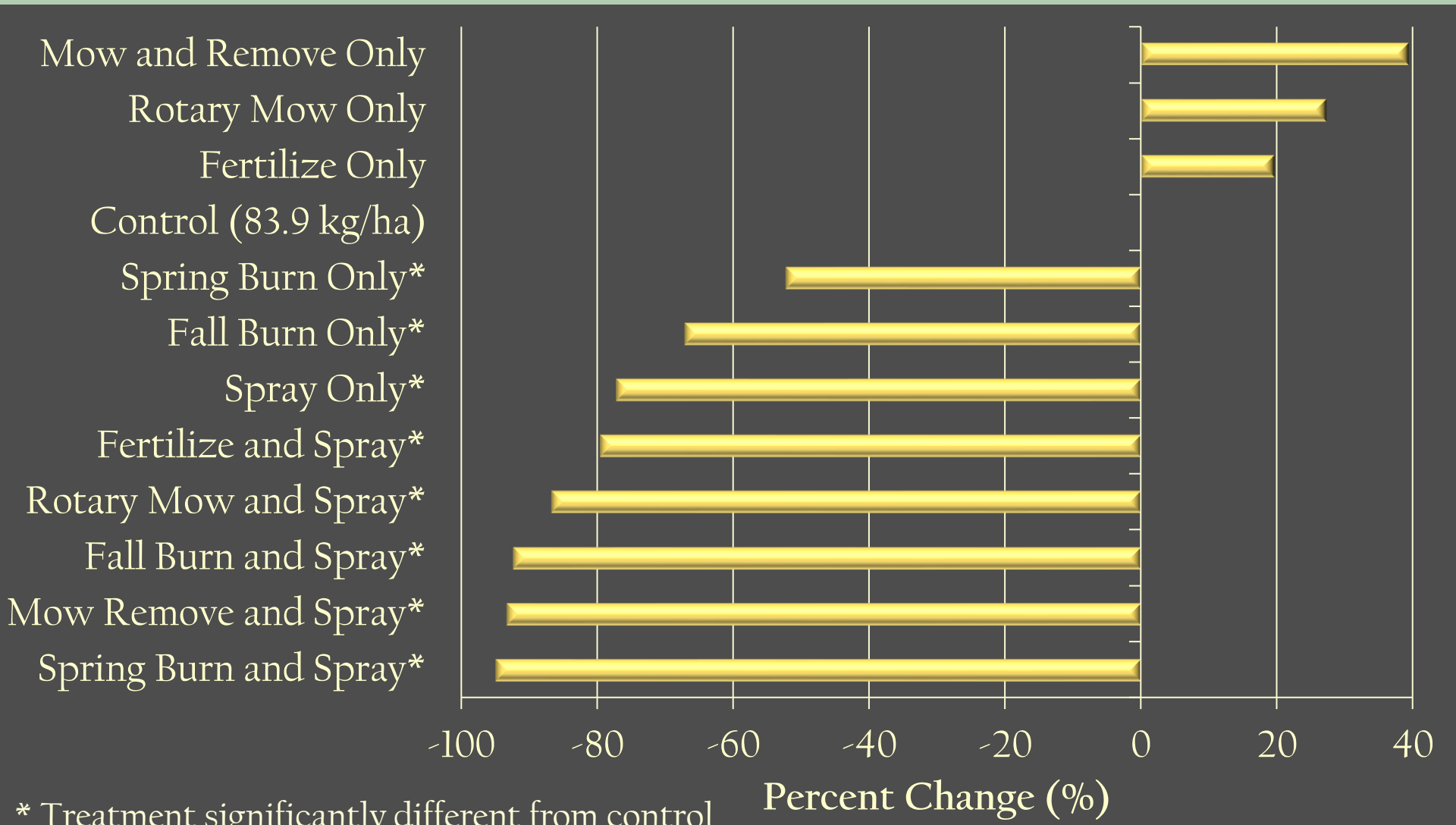
High Ventenata – Fall Burn

Low Ventenata – Spring Burn

High Ventenata – Spring Burn

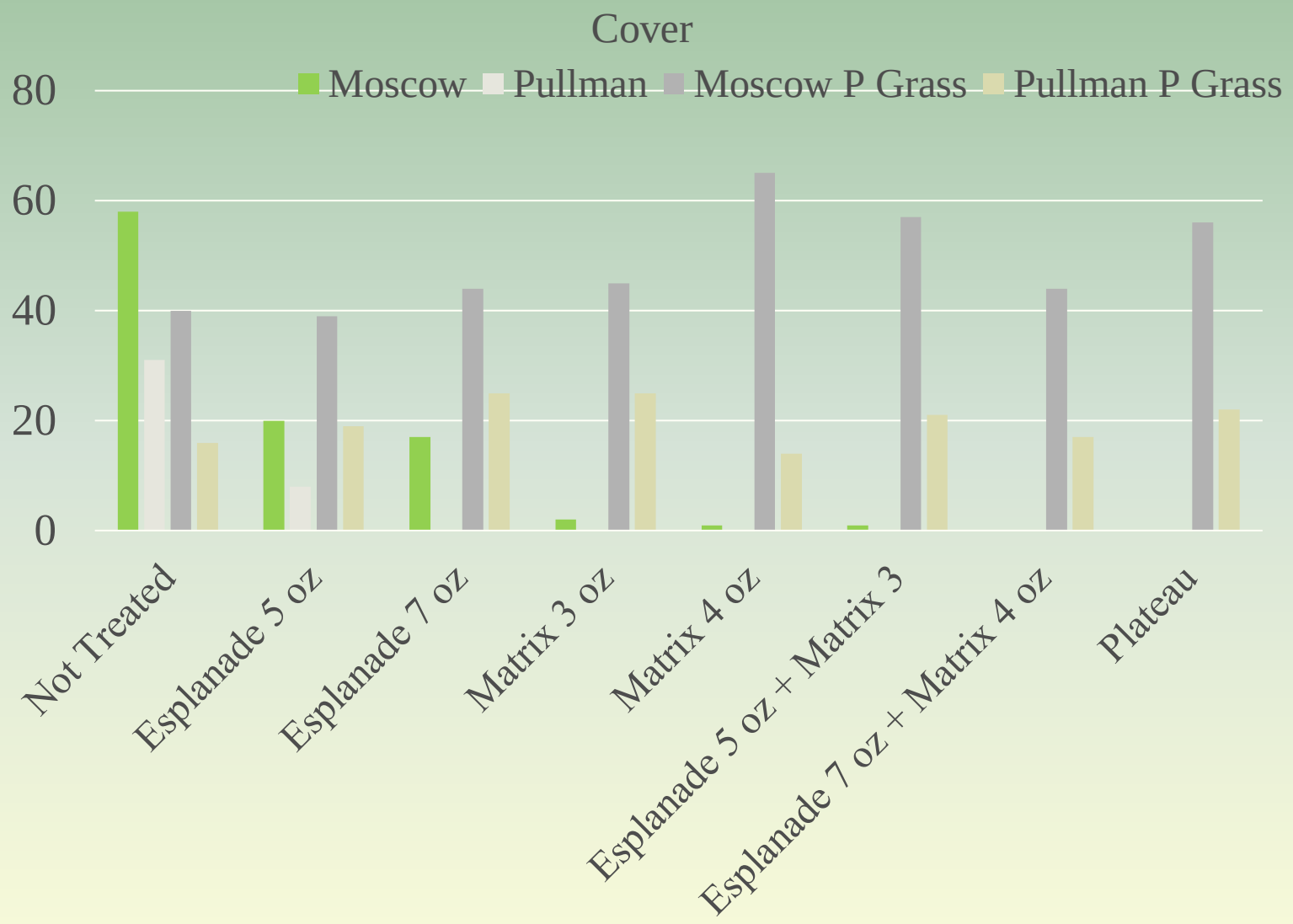

Control
05/07/2013 09:20
Spring Burn and Spray
05/07/2013 09:18
Fall Burn Only
05/07/2013 09:17
Fall Burn and Spray

CRP
High Infestation – Ventenata Biomass

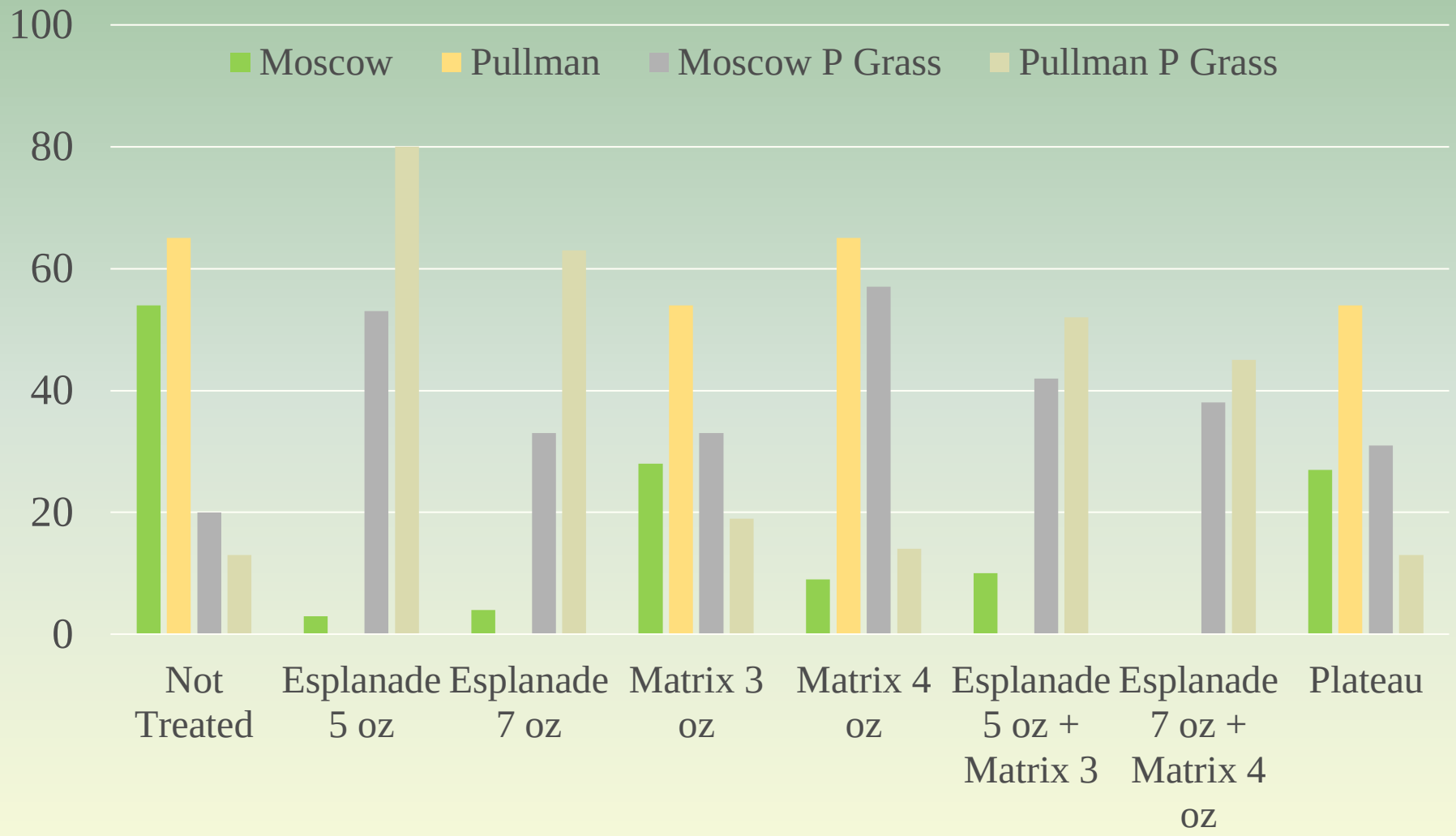


* Treatment significantly different from control

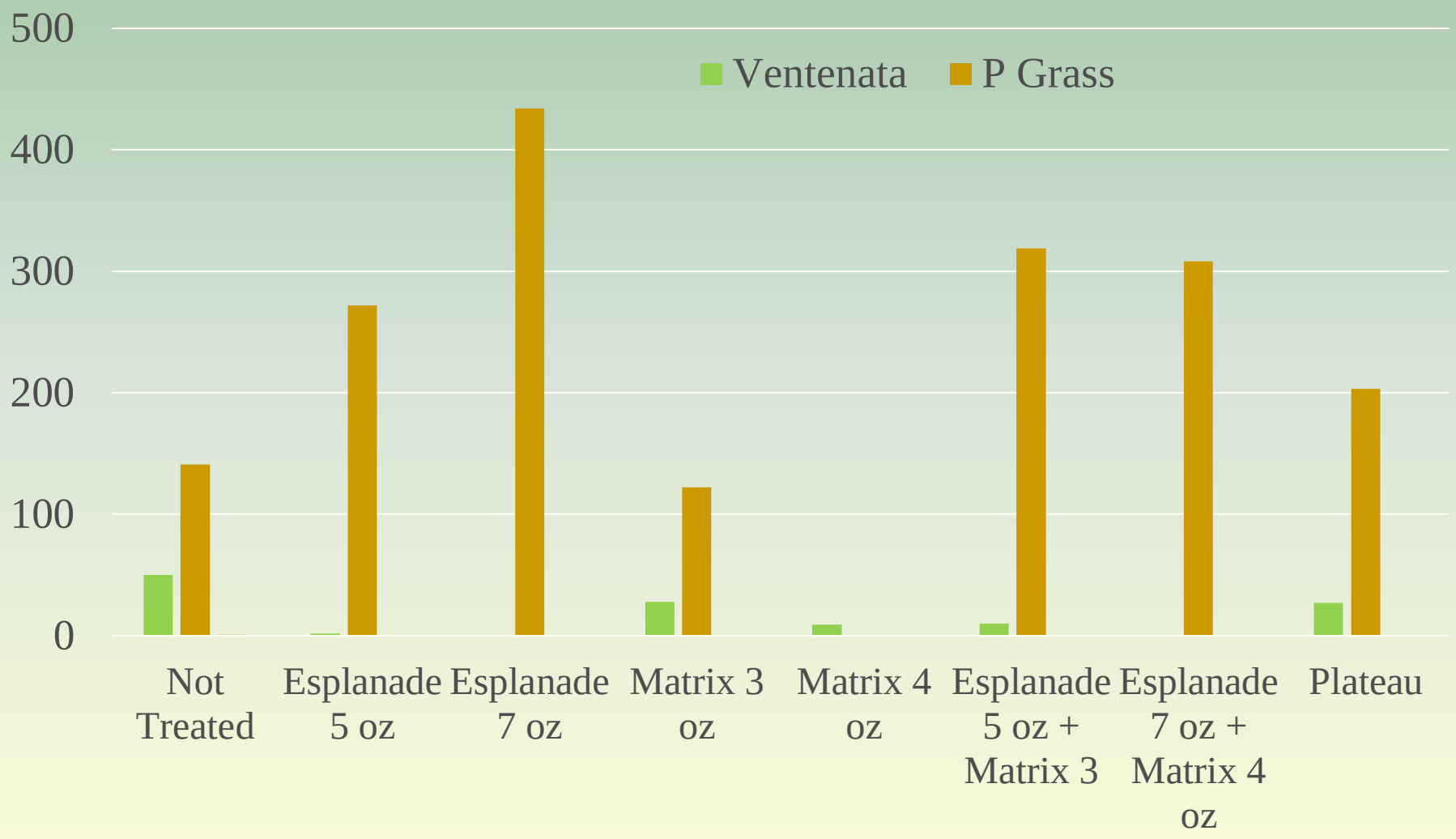
Cover of Ventenata or Perennial Grass 3 MAT



Cover of Ventenata or Perennial Grass 16 MAT



Forage Production - Ventenata or Perennial Grass 16 MAT



Cover of Ventenata 2 years after application

Treatment	Timing	Rate	Ventenata dubia[b]
		g ai ha^{-1}	
Nontreated		-	100 a
Esplanade	A	73	0 c
Esplanade	A	102	0 c
Esplanade + Matrix/Laramie	A	53, 72	0 c
Plateau	A	123	78 b
Esplanade	B	73	0 c
Esplanade	B	102	0 c
Esplanade + Matrix/Laramie	B	53, 72	0 c
Plateau	B	123	96 a
Esplanade + Matrix/Laramie	C	35, 72	0 c
Esplanade + Matrix/Laramie	C	53, 72	0 c
Esplanade + Matrix/Laramie	C	72, 72	0 c
Plateau	C	123	38 b

A – September, B – October, C --November

Discussion Points

- Esplanade can control ventenata for at least 2 years
- Esplanade alone – need to know ventenata biology and apply before germination
- If ventenata has started to germinate then Matrix/Laramie or Plateau added to Esplanade
- Esplanade allows for direction of resources to other management goals
- Other tools: 1) Fire, 2) Other annual grass herbicides, 3) Milestone used for broadleaf control

Postemergent Herbicides Registered For Grasses

System	Outrider	Plateau	Matrix	Esplanade	Amber
Pasture	X	X		(soon)	X
Range	X	X		X	X
Rights of Way	X	X	X	X	

Preemergent Herbicides Registered For Grasses

System	Prowl H2O	Plateau	Matrix	Esplanade
Pasture	X	X		(soon)
Range		X		X
Rights of Way		X	X	X

Herbicides Registered

System	Outrider	Plateau	Matrix	Landmark	Axiom
Pasture	X	X			
Range	X	X		X	
Rights of Way	X	X	X	X	
Hay	X				X

Integrated Pest Management

A. Grass Competition
    a. Use fertilization when in pasture
    b. Managing grazing
B. Incorporate fire when practical
C. Herbicides for Weed Control
D. Biological Control

IPM – Biological Control of Rush Skeletonweed

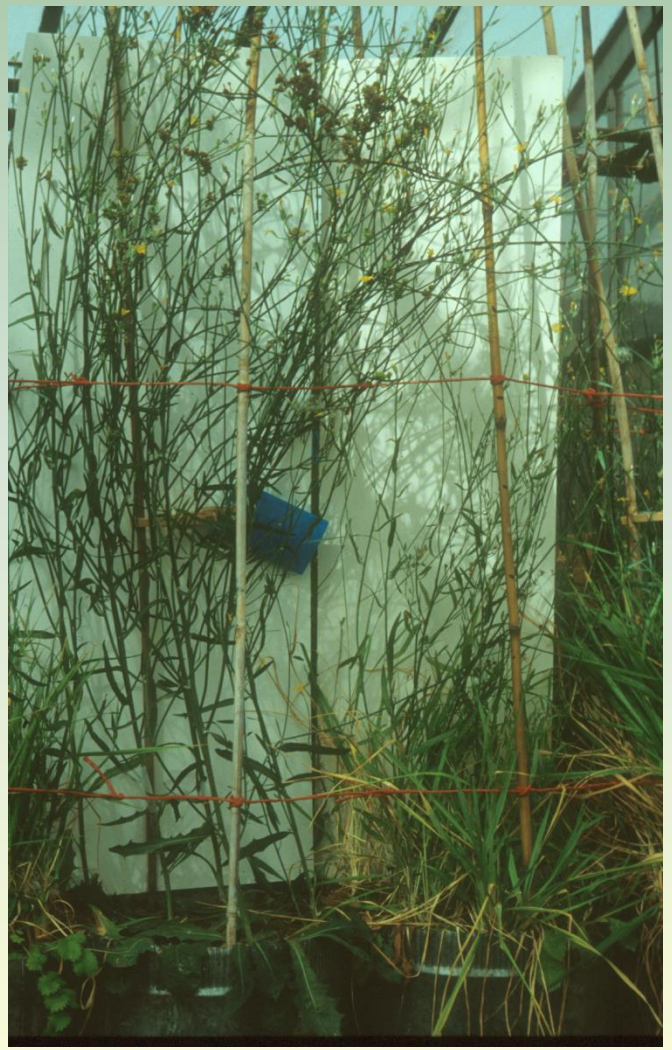
Rosette similar to dandelion

Base of main stem with bristles

Yellow flowers

Seed with pappus (250 to 20,000/ plant)

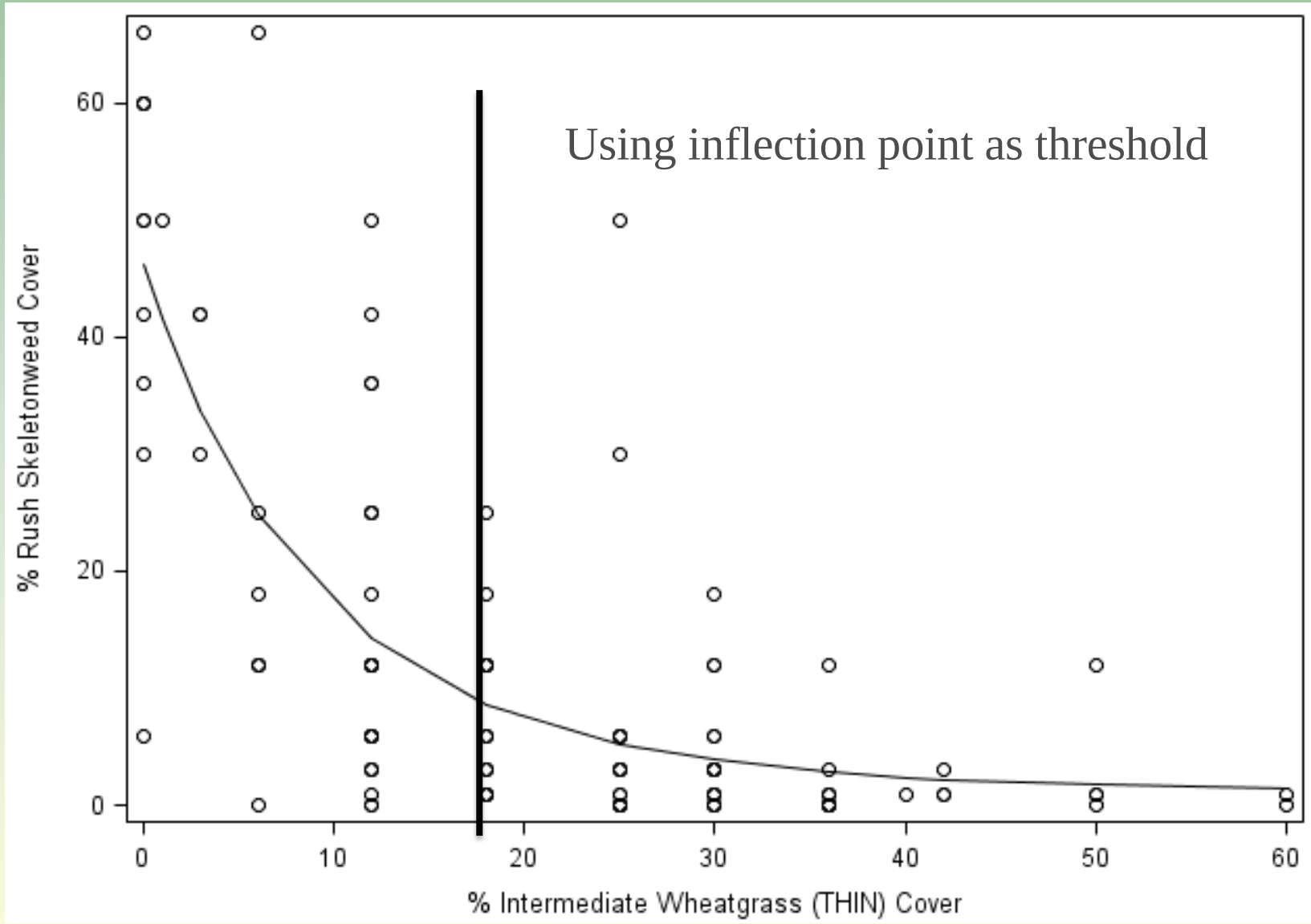
Rush Skeletonweed
Competition and Biological Control



Moderate infestation

- With 800 mites initially
- With and without plant competition

Cover and Thresholds



Factors Affecting Dispersal

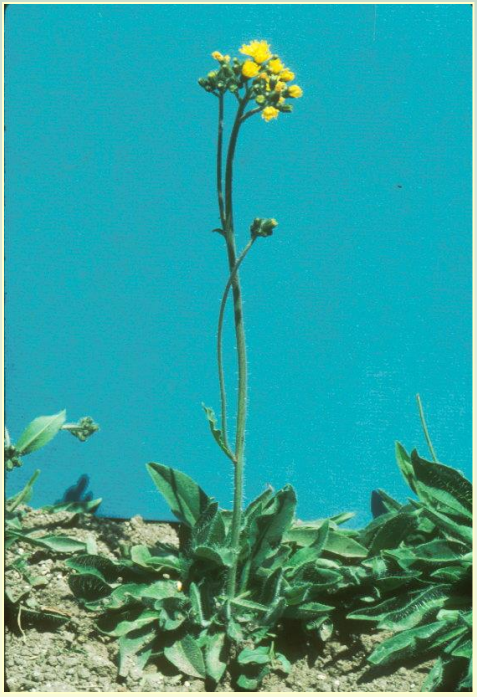
Integrated Pest Management

https://pnwhandbooks.org/weed

A. Grass Competition
   a. Use fertilization when in pasture
   b. Managing grazing
B. Incorporate fire when practical
C. Herbicides for Weed Control
D. Biological Control

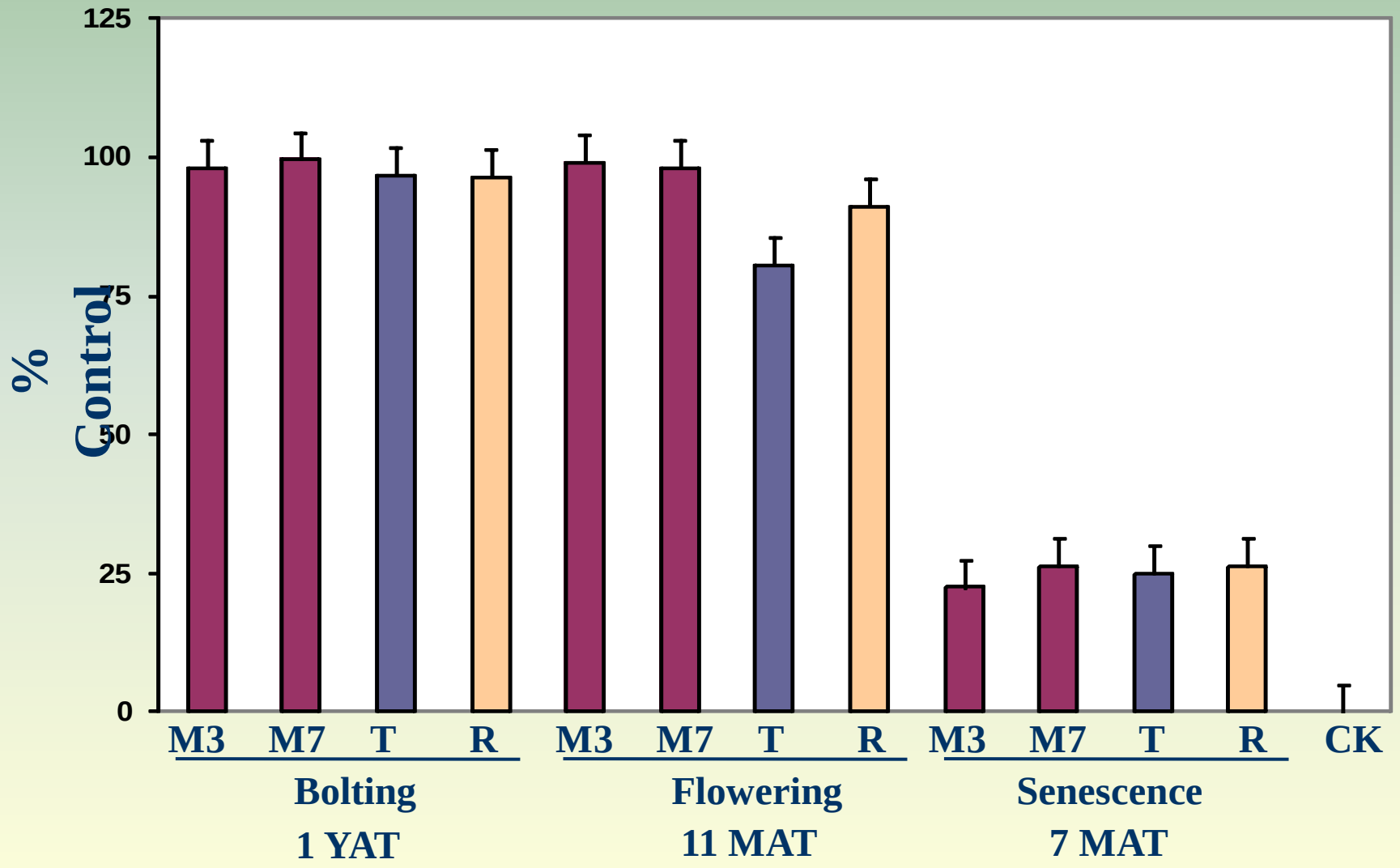
Timing of Treatment:
Meadow hawkweed
(H. caespitosum)

- Flower stalk is short in compact flower clusters
- Leaves hairy on one or both sides
- Stolons and root buds present



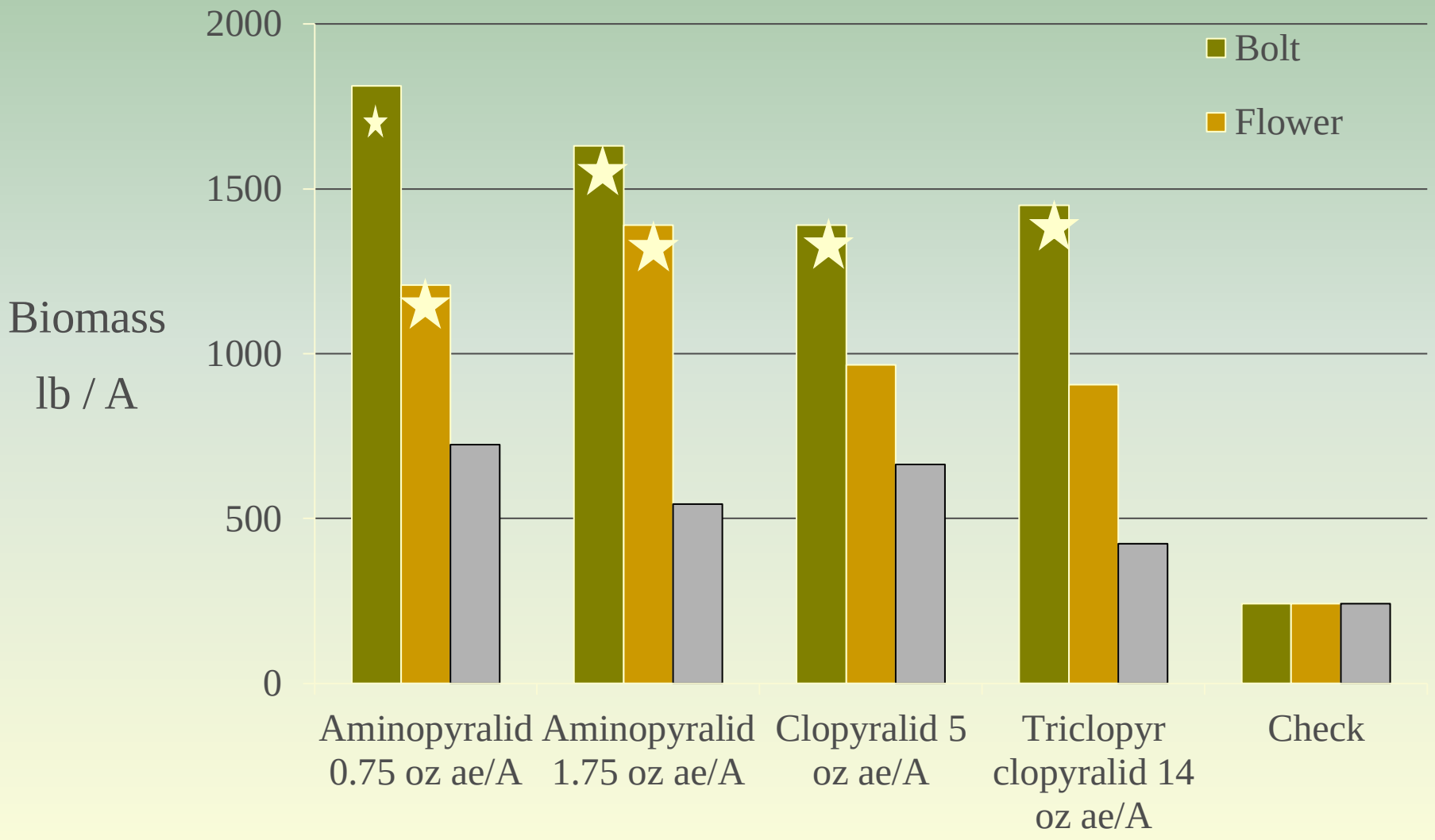
Meadow Hawkweed Invading Idaho Fescue

Timing for Hawkweed Control



Application Timing

3 YAT



Oxeye Daisy
(*Chrysanthemum leucanthemum*)
Asteraceae, sunflower family

E

•Introduced as an ornamental it is from Europe; it is in every state
•Shallow, fibrous- rooted perennial
• Toothed spatula like basal leaves
•Ray and disk flowers
•Flower heads 1 to 2 inches across
•Fruit is an achene

Oxeye Daisy

(*Chrysanthemum leucanthemum*)

Asteraceae, sunflower family

E

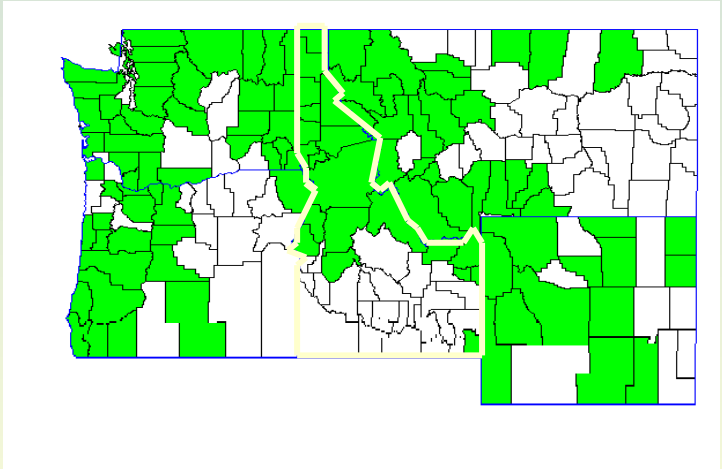
- Often in grazed pastures and meadows
- Spread as a contaminant of grass and legume seed
- Was sold as an ornamental
- No dormancy, most plants emerge in fall
- Flowering in June to August
- Spread by seed is most common mode of spread

Oxeye Daisy

(*Chrysanthemum leucanthemum*)

Asteraceae, sunflower family

- Very sensitive to Escort
- Controlled by Milestone
- Controlled by Tordon



Broadleaf Herbicides

- Milestone/Transline
  - Sunflower Family
  - Bean Family

- Escort
  - Sunflower Family
  - Borage Family
  - Mustard Family

- Chaparral
  - aminopyralid
  - metsulfuron

- Cimarron Max
  - Dicamba
  - 2,4-D
  - metsulfuron


Questions?