

Alfalfa Concerns for 2000

Portage County Forage Council
Annual Meeting

January 12, 2000

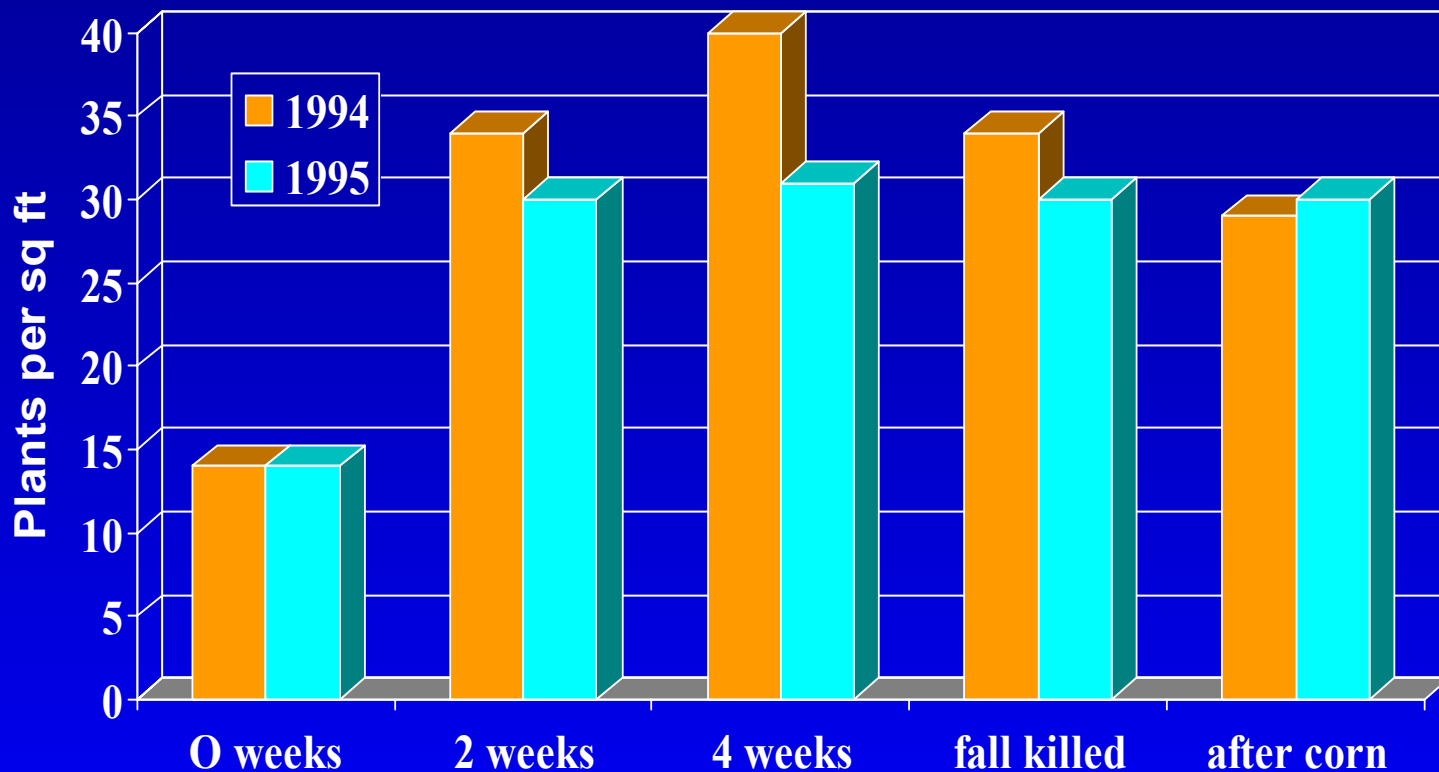
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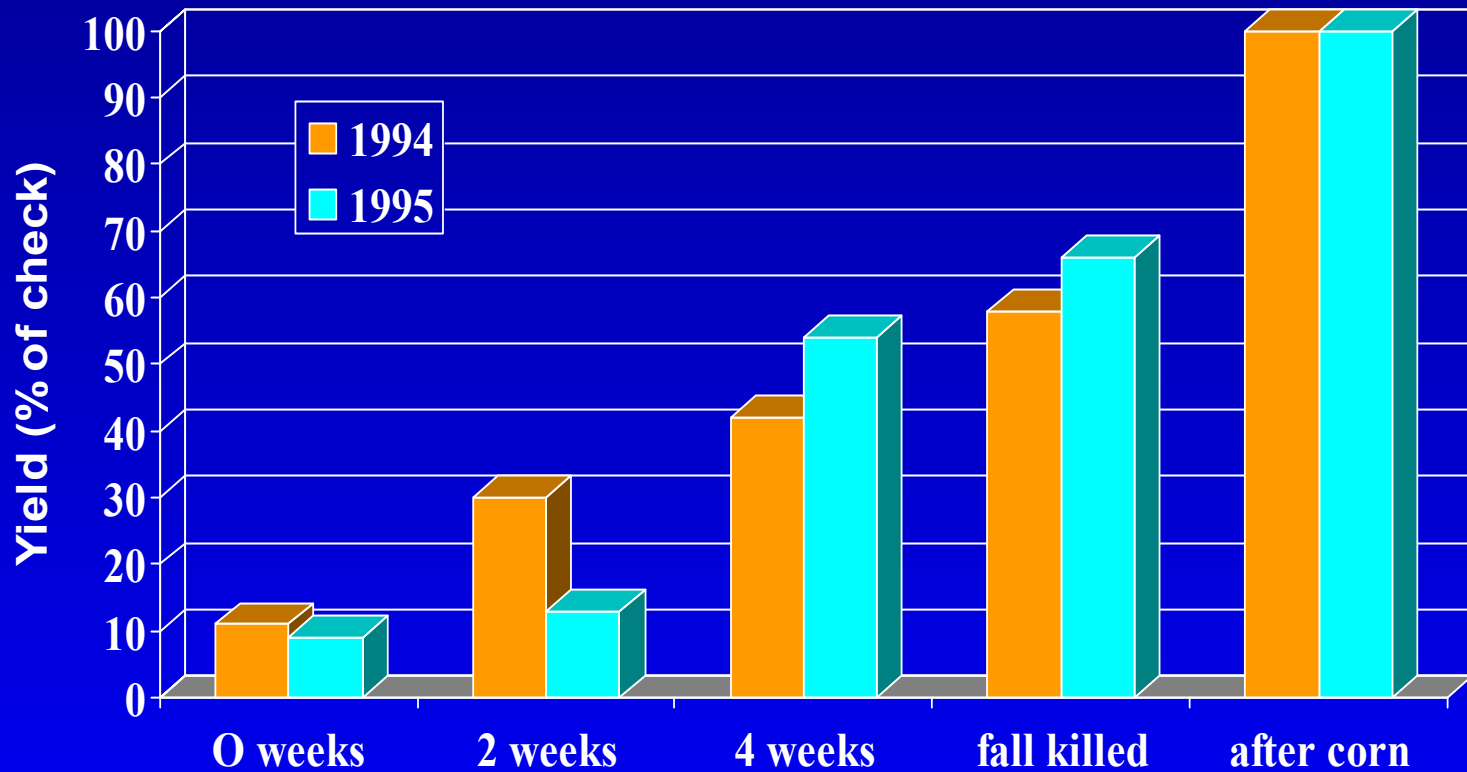
Alfalfa Autotoxicity

- Stand reductions averaged 18 % in 4 research trials (range of 7.9 to 32 %)
- Yield reductions averaged 22 % in 12 research trials (range of 6 to 52%)

Affect of Alfalfa Autotoxicity on Plants per square foot



Affect of Alfalfa Autotoxicity on Yield

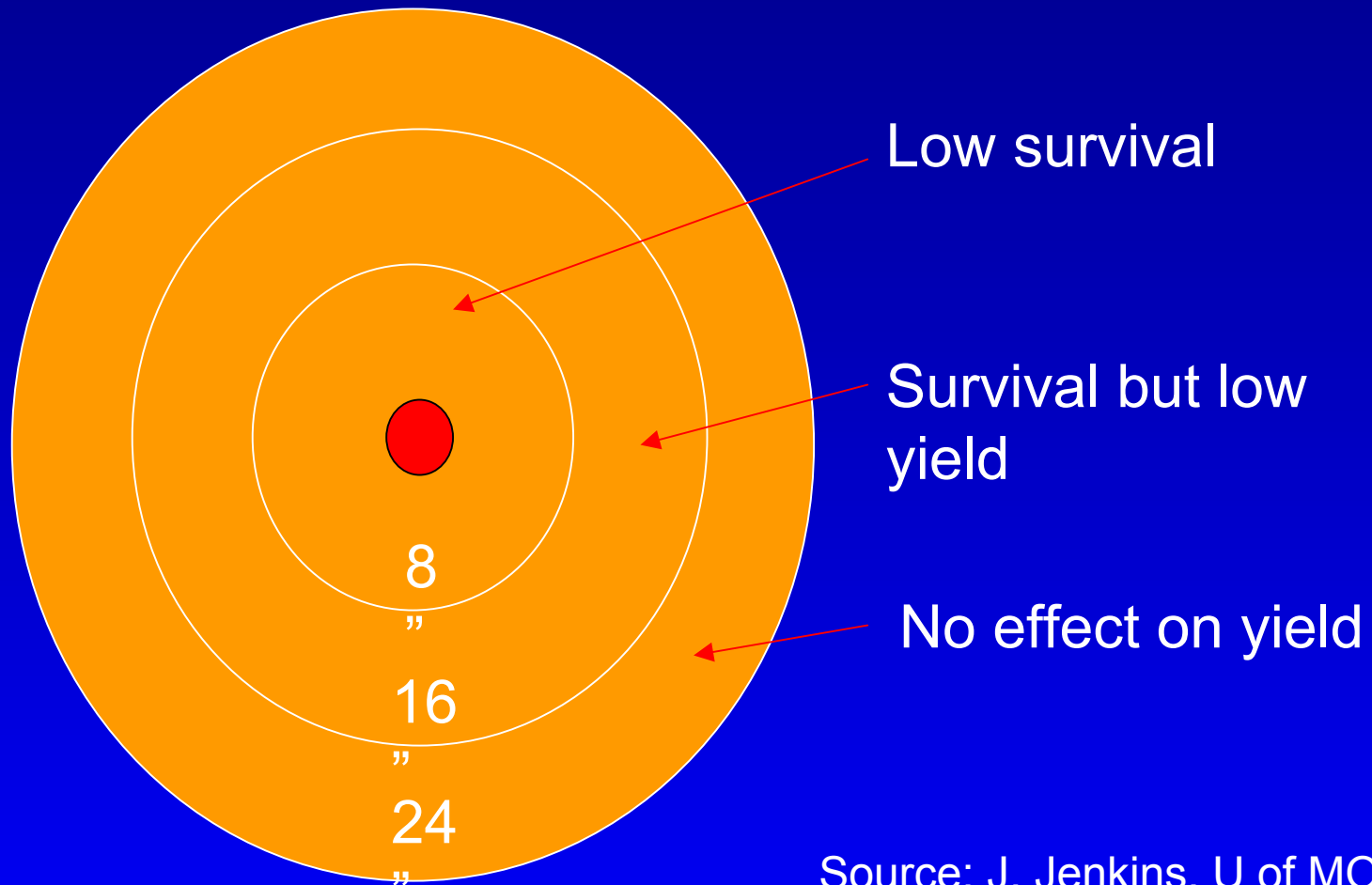


Affect of Alfalfa Autotoxicity Over Time

Time waited to replant	Alfalfa Yield (Tons/Acre)		
	Seeding Year	2 nd Year	3 rd Year
2 weeks	1.9	4.7	3.9
1 year	2.1	5.2	4.1

Source: J. Nelson, U of Mo

Alfalfa Zone of Influence - *distance from old plant*



Source: J. Jenkins, U of MO

Autotoxicity

- Reduces germination if severe
- Reduces yield for life of stand
- Effect most severe on light soils
- Effect most prolonged on heavy soils
- Irrigation/rains can wash autotoxic factor from soil

Recommendations

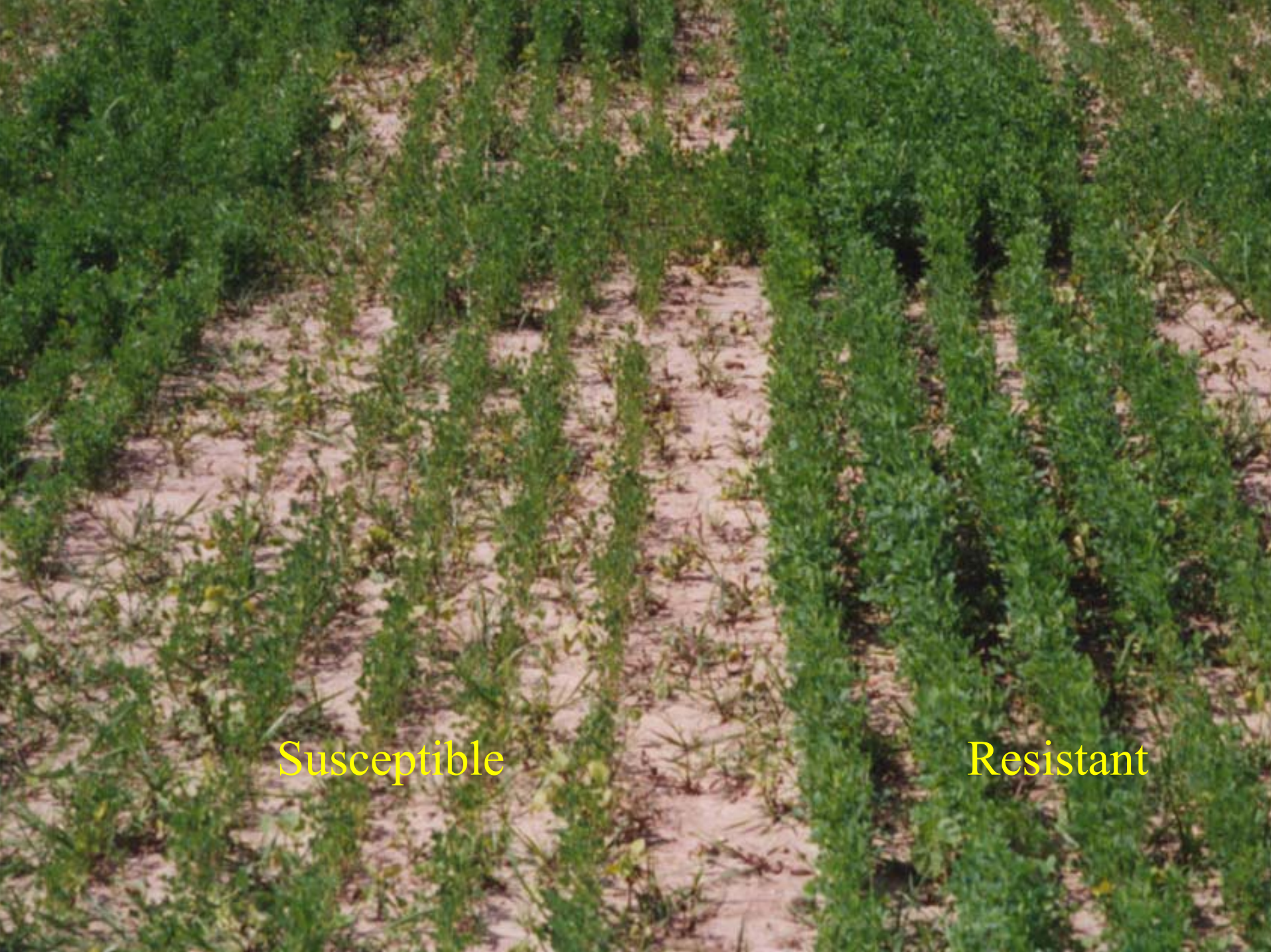
- Wait at least one year before reseeding alfalfa
- Can reseed new seeding failures anytime
- In situations where emergency forage is needed:
 - Remove top growth before plowing
 - Accept some yield loss

Aphanomyces Race 2

Aphanomyces

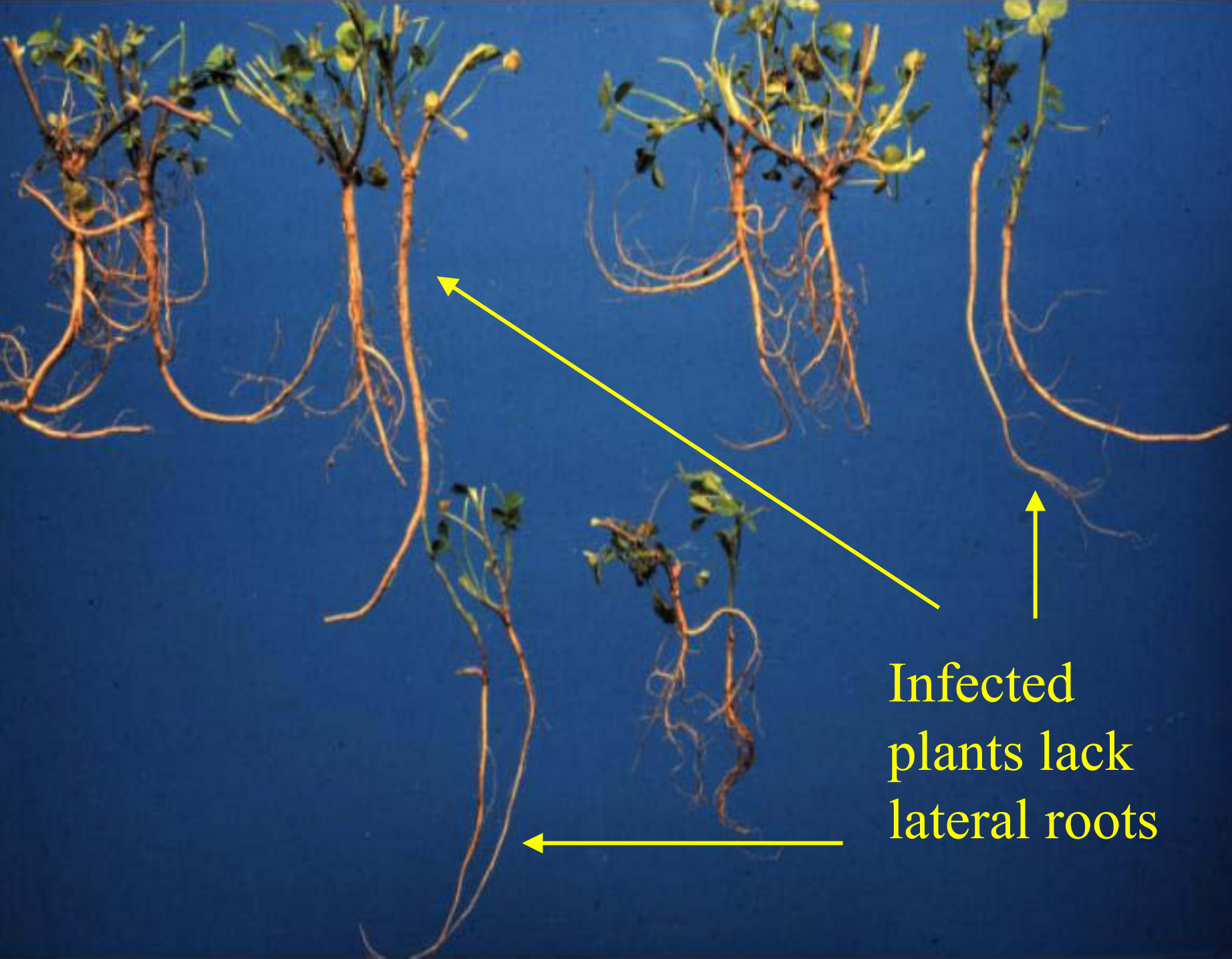
- Kills seedlings
- Reduces seedling vigor
- Reduces yield
- Increases weed problems





Susceptible

Resistant



Infected
plants lack
lateral roots

Aphanomyces

Host Specific Subpopulations

Pea/Alfalfa

Alfalfa/Pea

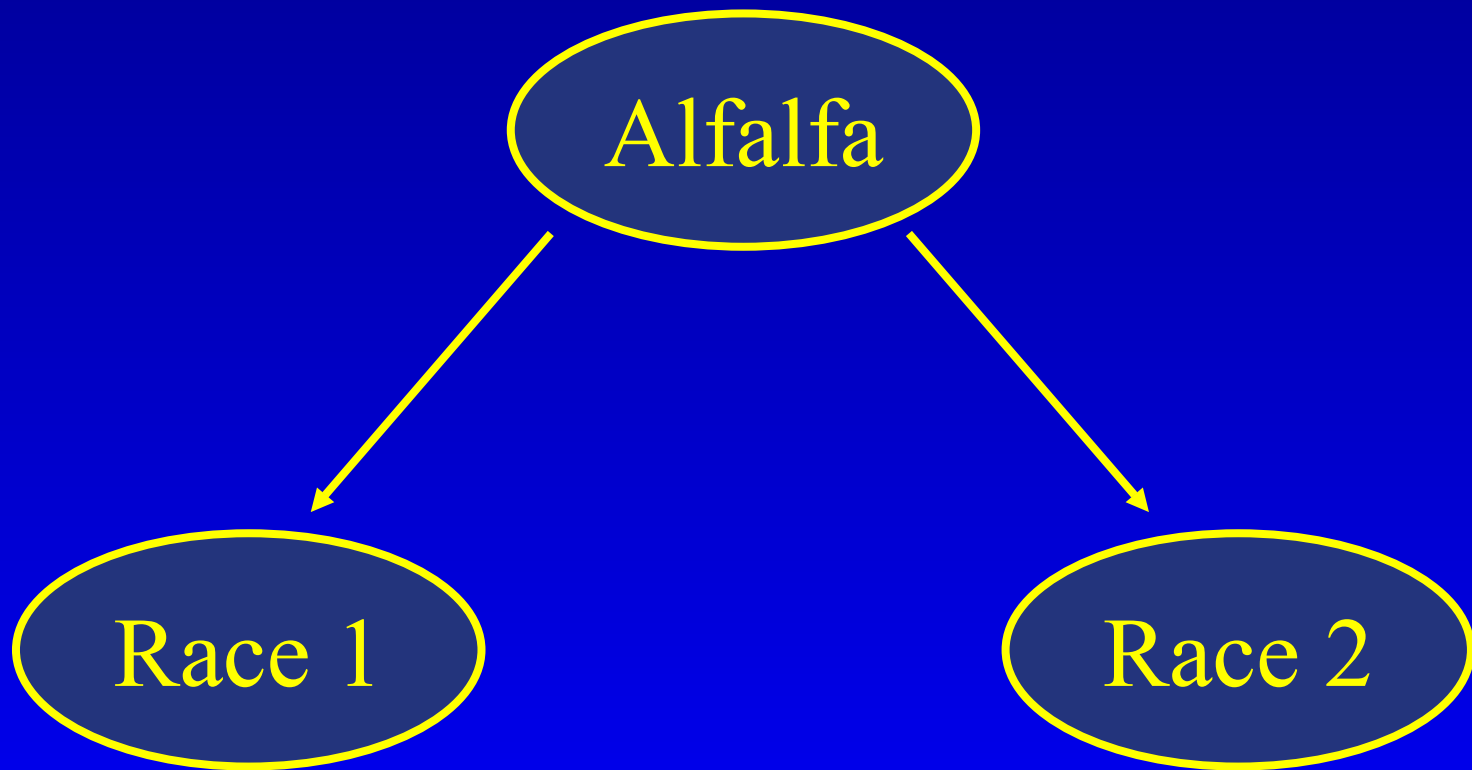
Alfalfa

Red Clover

Snap Bean

Aphanomyces

Variety Specific Subpopulations



Aphanomyces and Alfalfa

- Race 1
 - Appears to be widespread
 - Currently commercially available varieties resistant to this race

Aphanomyces and Alfalfa

- Race 2
 - Probably geographically widespread
 - Southwestern Wisconsin
 - Central Wisconsin
 - Iowa
 - Kentucky
 - East Coast
 - Prevalence within a given field not well known
 - Occurs in combination with race 1

Aphanomyces and Alfalfa

Questions

- How important is race 2?
 - It's unclear
- Should we be worried about race 2?
 - Yes
- Are there other races?
 - Probably

Alfalfa Varieties Resistant to Aphanomyces Race 2

❖ DK 141	HR	Dekalb
❖ GH 757	HR	Golden Harvest
❖ Passport	R	Wyffels Hybrids

Managing *Aphanomyces*

- What is the best strategy for managing resistance to *Aphanomyces* over the long-term?
 - Early detection and close monitoring of currently recognized and new races of *Aphanomyces*
 - Use of resistant varieties
 - Use of crop rotation to manage *Aphanomyces* subpopulations

Alfalfa Cutting Height

Alfalfa Yield and Cutting Height

- Reserch indicates that yields are higher for shorter cutting heights
- This yield requires that plants are healthy, not under stress and have adequate root reserves

Alfalfa Quality and Cutting Height

- Typically, the lower sections of the plant are higher in fiber and have fewer high quality leaves present
- Leaving taller stubble may improve the quality of the forage harvested

Alfalfa Quality and Cutting Height

- If harvesting in a timely manner, there should be no reason to forego yield for a slight quality increase
- By harvesting the entire stem, potassium concentrations are lower

Cutting Height Recommendations

- Cut healthy, non-stressed alfalfa fields at 1-inch height
- In fields where plants are stressed, cutting heights should be adjusted upwards
- Adjust cutting height to avoid injuring plants or picking up rocks and soil
- To help capture snow the final fall cutting should be 4-inches or greater

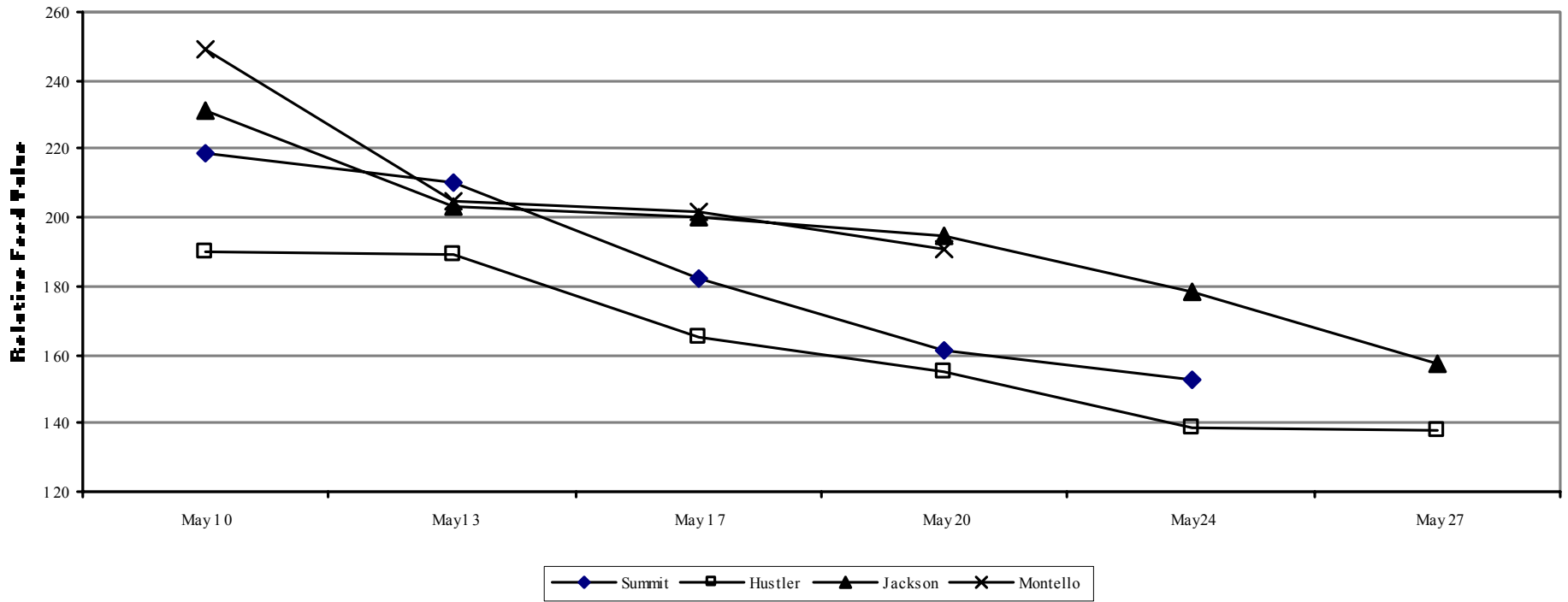
1999

Juneau - Adams - Marquette

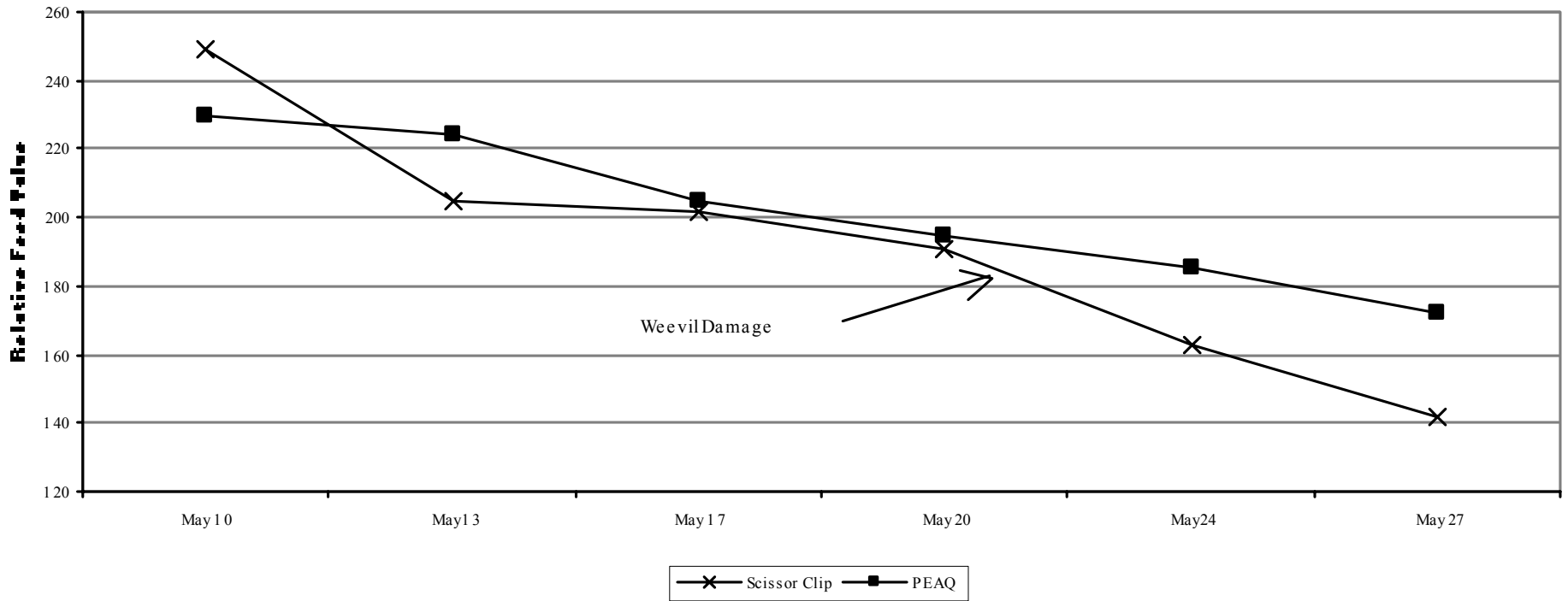
Alfa Scissor Clip - PEAQ

Summary

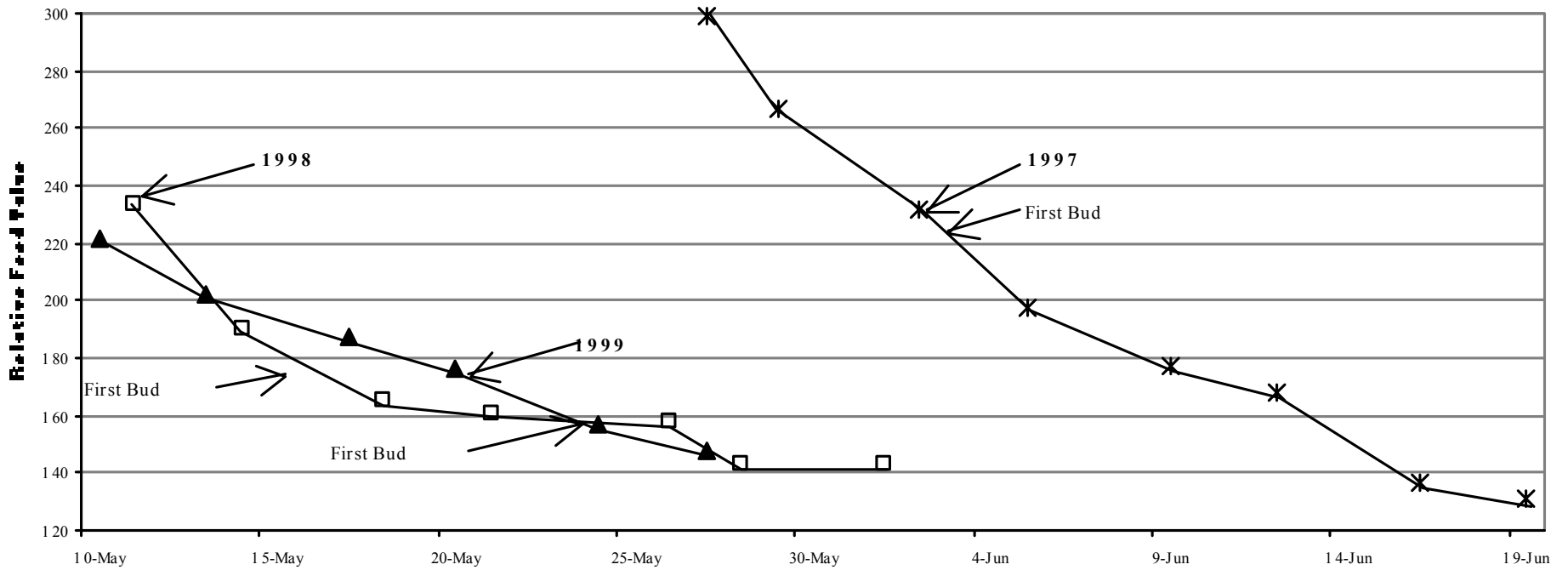
**Fig. 1 Alfalfa Scissor Clip Results
Four Site Comparison**



**Fig. 5 Alfalfa Scissor Clip-PEAQ Results
Montello**



**Fig. 6 Three Year Scissor Clip Comparison
Juneau - Adams - Marquette Co.**



Forage Web Page

<http://www.uwex.edu/ces/crops/teamforage/index.html>



Mission

Team Members

Work Groups

Focus on Forage

UW Forage Resources

Member Information



Forage Web Page

<http://www.uwex.edu/ces/forage/>



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