
Weed Management in Forages

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Weeds in Forages

- May limit stand establishment
- Reduce yield (but not necessarily)
- Increase drying time
- Generally reduce quality and palatability
- Feed value of weeds varies
- Weeds with woody stems or stalks have low feed value (50% of alfalfa value)

Weeds wetter than alfalfa by >3% points

<u>New seedings (77.1%)</u>	<u>Established stands (82.3%)</u>
Giant, yellow foxtail	Curly Dock
Barnyardgrass	Dandelion
Smooth crabgrass	White cockle
Common ragweed	Mouse ear chickweed
Smartweeds	
Lambsquarters	
Pigweed	
E. black nightshade	
Hedge & wild mustard	
Wild radish	
Broadleaf plantain	
White cockle	

J. Doll, Univ. Wisconsin, 1995

Weeds lower in CP than alfalfa by >3% units

<u>New seedings (21.2%)</u>	<u>Established stands (23.7%)</u>
All foxtails	Quackgrass
Smooth crabgrass	Curly Dock
Yellow nutsedge	Dandelion
Lambsquarters	White cockle
Pigweed	Yellow rocket
Mustards	Pennycress
Smartweeds	Shepherd's purse
Velvetleaf	Broadleaf plantain
Broadleaf plantain	Mouse ear chickweed
Pennycress	Tum. Mustard
Wild radish	(all weeds present)
Pepperweed	
White cockle	
Shepherd's purse	

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Weeds higher in NDF than alfalfa by >5% units

<u>New seedings (31.4%)</u>	<u>Established stands (29.2%)</u>
All foxtails	Quackgrass
Barnyardgrass	Yellow rocket
Smooth crabgrass	Pennycress
All mustards	Shepherd's purse
Yellow nutsedge	Mouse ear chickweed
Pennycress	Tum. mustard
Shepherd's purse	
Wild radish	
Pepperweed	

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Weeds lower in NDF than alfalfa by >5% units

<u>New seedings (31.4%)</u>	<u>Established stands (29.2%)</u>
E. black nightshade	Dandelion
Common ragweed	Broadleaf plantain
Smartweeds	

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Weeds higher in CP than alfalfa by >2% units

<u>New seedings (21.2%)</u>	<u>Established stands (23.7%)</u>
None	None

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Control Problem Weeds Before Seeding

- Perennial and biennial weeds will persist in stands if not controlled
 - *Dandelion, curly dock, Canada thistle, quackgrass, musk thistle, burdock*
- Weed control is investment in the future, to be returned throughout life of forage stand.

Control Problem Weeds Before Seeding

- Herbicide options, year before seeding:
 - *Glyphosate, 2,4-D, Banvel*
 - *Apply during active weed growth*
- Kill grass sods early, products released from decay can inhibit legume seedlings.
 - *Allow one month of soil temperatures above 60 F before seeding legumes after killed sod.*

Healthy Forages Compete with Weeds

- Proper seedbed preparation
- Timely seeding
- Variety selection (disease resistance)
- Proper seeding rate
- Fertility and pH
- Insect control
- Good cutting management practices

Forage Establishment Phase



Control weeds during the first 60 days.

- Weeds emerging with crop are most destructive.
- Weed emergence after 60 days will not influence yield, but may reduce quality.
- Winter annual weed competition in early spring is most damaging.
- Grassy weeds are usually very competitive with legumes.

Weed Problems During Forage Establishment

- Spring seedings
 - *crabgrass, foxtails, ragweeds, smartweed, lambsquarters*
- Late-summer seedings
 - *chickweed, henbit, mustards, shepherdspurse, pennycress*

Spring seedings - weed control in alfalfa

- Companion crops compete with weeds
- Later planting = more weed problems
- Preplant incorporated herbicides:
 - *Balan & Eptam* for grasses, lambsquarters, and pigweed
- Postemergence options:
 - *Buctril, 2,4-DB, Pursuit*
 - apply when weeds are less than 2 to 4 inches tall
 - *Poast and Select* for grassy weeds

Summer seedings - weed control in alfalfa

- Early planting reduces weed problems
- Fall herbicide application
 - *Very effective for winter annuals*
 - *2,4-DB, Pursuit during October*
 - *Kerb when soil temp is < 60 degrees*
- Late-winter, dormant application
 - *Gramoxone Extra in late February*
- Spring herbicide application
 - *2,4-DB, Pursuit, Buctril*

Weed control in established stands

- Best control is dense and healthy stand
- Greatest benefit of control is in 1st crop
- Before using herbicides consider:
 - Forage stand density
 - Weeds may invade space later
 - If stand >2 yrs old, return from herbicide is questionable if have 25-30% weeds
 - Time to rotate to other crops if 50% weeds

Herbicides for established alfalfa

- Postemergence for annual broadleaf weeds:
 - *2,4-DB and Pursuit in fall - 2 to 3-inch weeds*
- Postemergence for annual grass and broadleaf weeds:
 - *Pursuit in fall or spring - 1 to 3-inch weeds*
- Postemergence for grasses:
 - *Poast and Select*

Herbicides for established alfalfa

- Control of perennial grasses, wheat, chickweed:
 - *Kerb in late fall after soil is < 60 degrees*
- Late winter, dormant application for winter annuals, dandelion, chickweed, henbit:
 - *Sencor/Lexone, Velpar, Sinbar*
 - *Velpar has 2-year plant back restriction, except for corn -- 12 mo. with deep tillage*

Mixed grass/legume forages

- Most broadleaf herbicides for grasses will injure or kill legumes:
 - Examples: *Banvel, Crossbow, 2,4-D*
- *Sencor/Lexone* - dormant application in late winter on alfalfa/grass stands.
- Glyphosate spot treatment.
- *2,4-DB and Buctril* not labeled for grass/legume stands used for hay, but are labeled for CRP

Perennial, biennial weeds in forages

- Control perennials and biennials prior to forage seeding with glyphosate
- Most forage herbicides are ineffective.
- Sencor/Lexone, Velpar will suppress dandelion, dock, and a few other perennials.
- Glyphosate spot treatment (will injure forage)

Alfalfa - Preharvest Roundup Application

- Apply in spring to facilitate corn planting
- Apply Roundup Ultra Max at 1.0 qt/A
- Controls alfalfa, perennial grasses, weeds
- Optimum timing: 3 to 7 days before harvest (minimum - 36 hours)
- Follow with atrazine for improved perennial grass control
- Follow with POST app of 2,4-D, Banvel, or glyphosate (Roundup Ready corn) for complete alfalfa control.

Poast - POST grass control in alfalfa

- Poast in new or established seedings
- Foxtails, other annual grasses -
24 oz/acre up to 8 inches tall
- Volunteer wheat - 36 oz/acre in fall before wheat is 4 inches tall
- Quackgrass - 36 oz/acre when 6 to 8 inches tall, retreat as necessary
- Will not injure legumes
Note: rates given here are for Poast Plus.

Select - POST grass control in alfalfa

- Controls annual and perennial grasses
- Seedling or established alfalfa
- Can be tank-mixed with 2,4-DB (Butyrac 200)
- 6 to 8 ounces/A for annual grasses
- Quackgrass - 8 to 16 ounces/A, retreat if necessary
- Apply with crop oil concentrate (1% v/v)
- Allow 15 days between application and grazing, feeding, or harvesting

Chickweed/lenbit control in alfalfa

- Seeding year - summer seedings
 - Pursuit - fall (best) or spring
 - Kerb - fall when soil temp is < 60 degrees
 - Gramoxone - dormant, late winter
- Established stands
 - All of the above
 - Sencor/Lexone, Velpar - dormant, late winter application is very effective

Alfalfa Stand Evaluation - Early Spring

<u>Year</u>	<u>Min. plants per sq foot</u>
Seeding	25
2nd	8 to 12
3 or more	5 to 6

Alfalfa Stand Evaluation - In-season

<u>Stems/sq foot</u>	<u>Effect on yield</u>
55	Not limited by stand
40 to 55	Some yield loss
less than 40	Questionable stand

Corn herbicides requiring >10 months until alfalfa can be planted

Atrazine	FieldMaster
Accent, Accent Gold	FulTime
Shotgun	Guardsman
Basis Gold	Harness Xtra
Bicep II Magnum	Hornet
Buctril+atrazine	Liberty ATZ
Bullet	Marksman
Celebrity Plus	Princep
Degree Xtra	Ready Master ATZ
Epic	Spirit
Exceed	Stinger

Soybean herbicides requiring >10 months until alfalfa can be planted

Authority	Scepter
Backdraft	Squadron
Canopy XL	Steel
Classic	Synchrony STS
Command	
Command Xtra	
Flexstar	
Gauntlet	
Pursuit Plus	
Reflex	