Forage Management: Keys to Profitability

Weed and Brush Management in Pastures

Byron Sleugh

Forages are the foundation upon which livestock performance and farm/ranch profitability are built. Without a healthy, well-managed forage resource genetic potential of livestock will not be realized.

"The livestock producer’s primary goal in forage management is to maintain forage quality at a level that will support desired levels of gain.... (Patterson et al. 1994)."

To establish and maintain productive and profitable pastures, what do you think is important?

- Seeds (right genetics)
- Species selection
- Planting time/rate etc.
- Fertility management
- Weed management
- Grazing/Harvest management

Getting the most out of your investment

Why manage weeds and brush?

Forages for all!!

Forages for all!!
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So, Farmer Graiz A. Lott knows he has weeds, what is his main reason for hesitating to treat the pasture?

What about my legumes?

Early in the season the weed pressure might not seem high and the value of the legumes can be over-estimated.

Why are producers hesitant to treat pastures with herbicides?

- A combination of factors
  - Cost of herbicide
  - Effects on legumes
  - Not sure herbicide will work
  - Timing of application and implications for grazing/haying

Weed Management in Pastures

- **Productive** pastures and hayfields typically have *lower weed* pressure than unproductive, *poorly* managed fields.

- To control or minimize weed effect:
  - Have a dense stand of competitive forage
  - Have proper fertility
  - Use proper grazing management
  - Use weed free seeds
  - Control weeds as needed

Pasture Weed Management

- The best insurance against weed invasion is a **vigorous and high quality** pasture community.

- Weed and brush control are essential tools in pasture management programs designed to maximize forage production and optimize livestock performance.
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Impact of Weeds on Forage Yield and Quality

- Reduce forage quantity, quality, and stand longevity.
- Reduce carrying capacity.
- Competitive with forages.
- May be poisonous.
- Reduce forage intake.
- Effect pasture aesthetics.

Musk thistle left uncontrolled will reduce grazable area.

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Integrated Weed Control Approach

- Buy weed free seeds
  - Use certified seeds
- Weed control before planting
  - Control existing weeds
  - A rotation that includes a tilled crop stimulates weed seed germination
  - Some weed seeds have extended dormancy
  - Remove perennial weeds ASAP
Weed Management Options

- Mechanical – eg. Mowing
- Biological – including grazing and insects
- Chemical

Benefits of using herbicides

- Selective control of undesirable plants
- Efficacious
- Less labor required
- Favorable cost/benefit ratio
- Increased production of desirable forage grasses

Estimated cost of weed control in pastures

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Herbicide Cost/acre</th>
<th>Type of Weeds Controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>ForeFront</td>
<td>1.4g</td>
<td>$82.00</td>
<td>Grasses, broadleaf weeds, and broadleaf annuals.</td>
</tr>
<tr>
<td>ForeFront</td>
<td>2.8g</td>
<td>$84.00</td>
<td>Grasses, broadleaf weeds, and broadleaf annuals.</td>
</tr>
<tr>
<td>PastureGard</td>
<td>1.4g</td>
<td>$82.00</td>
<td>Grasses, broadleaf weeds, and broadleaf annuals.</td>
</tr>
<tr>
<td>PastureGard</td>
<td>2.8g</td>
<td>$84.00</td>
<td>Grasses, broadleaf weeds, and broadleaf annuals.</td>
</tr>
<tr>
<td>Milestone</td>
<td>1.4g</td>
<td>$82.00</td>
<td>Grasses, broadleaf weeds, and broadleaf annuals.</td>
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<tr>
<td>Milestone</td>
<td>2.8g</td>
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Grass and pasture recovery from weed control and fertilization.

Forage Response to Weed Control and Fertilizer

<table>
<thead>
<tr>
<th>Yield lb/acre</th>
<th>Control</th>
<th>Mow</th>
<th>Mow + Fert</th>
<th>Herbicide</th>
<th>Herbicide + Fert</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>1000</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

Clary and Redmon. 2008. TX AgriLife Extension Service
Summary

- Severely degraded pastures were rejuvenated within 2 years with fertilizer + herbicide
- Where soil test P was low, good response to P fertilizer. At medium or above, no P response.
- When weed pressure was heavy, killing 1 lb of weeds resulted in 1 lb of additional grass
Cute little weeds turn into bigger weeds...

Significantly reduced grazable area in pasture

Musk thistle left uncontrolled will reduce grazable area.

Musk and bull thistle left uncontrolled will reduce grazable area.

From: Seefeldt et al. 2005
Weed Science 53:113-120
Distribution of grazing and forage utilization can be significantly affected by the presence of weeds. Ungrazed weed island

Patch grazing:
Non-uniform forage utilization
Weed-infested patches undergrazed
Weed-free patches overgrazed.

Let’s do the math...
- Ungrazed clumps
  - 6x6 = 36 ft²
  - Assume 100 clumps/acre = 36x100 = 3600 ft²
  - Total 3600 ft² = 0.08 acre
- Assume yield potential of 3 t/a
- 0.08x3 = ¼ ton of lost forage/acre
- If you had 50 acres you just lost 12 tons of forage
  - At $100/ton hay, that is $1200 of lost forage
- If hay is $100/ton, ¼ ton of hay (amount of forage lost/acre) is $25
  - Cost of herbicide application could cost much less

Herbicide treatments applied spring or fall 1991

Fig. 8. Effect of herbicides on grass biomass at Avon.
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A picture is worth……..

Does it matter to your cattle if you control weeds and brush?

2009 Grazing Experiment, Albany
Example of Untreated Area (Sept.)
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Albany
Fix Points Prior to Application (7/6-7/28)
- Treated: 53% (250 fixes)
- Untreated: 47% (225 fixes)

Albany
Fix Points 1 Month After Application (7/30-8/29)
- Treated: 51% (255 fixes)
- Untreated: 49% (253 fixes)

Albany
Fix Points 3 Months After Application (9/30-10/27)
- Treated: 84% (1043 fixes)
- Untreated: 16% (202 fixes)

Albany
Fix Points 4 Months After Application (10/28-11/24)
- Treated: 77% (869 fixes)
- Untreated: 23% (328 fixes)

Albany
Fix Points for All 4 Months After Application
- Treated: 72% (2,718 fixes)
- Untreated: 28% (969 fixes)
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<th>Type of Weeds Controlled</th>
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<tr>
<td>Cyanazine</td>
<td>1 to 4 lb/A</td>
<td>$20 - 30</td>
<td>Selective broadleaf weeds and certain grassy plants. Temporary growth suppression of broadleaf or other pasture grasses may occur.</td>
</tr>
<tr>
<td>Chlorimuron</td>
<td>1 to 2.5 lb/A</td>
<td>$20 - 30</td>
<td>Selective broadleaf weeds. Temporary growth suppression of broadleaf weeds only.</td>
</tr>
<tr>
<td>Trifluralin</td>
<td>1 to 2.5 lb/A</td>
<td>$20 - 30</td>
<td>Selective broadleaf weeds. Temporary growth suppression of broadleaf weeds only.</td>
</tr>
<tr>
<td>forestry</td>
<td>1 to 4 lb/A</td>
<td>$40 - 75</td>
<td>Selective broadleaf weeds. Temporary growth suppression of broadleaf weeds only.</td>
</tr>
</tbody>
</table>

*Some products may not be registered for sale or use in all states. Care should be taken to minimize drift and prevent damage to non-target vegetation. *

6 Tips for Successful Weed Control

- **Identify** the weed problem
- **Use a calibrated** sprayer
- **Spray at the right time with the right rate and the right herbicide**
  - Use residual herbicide when possible
- **Drought stressed or mature weeds will be more difficult to control**
- **Follow label directions** for mixing and applying

Brush Management

- **Brush control can sometimes be costly and time consuming. But it pays huge dividends.**
- **For foliar applications, spray only after plants are fully leafed out**
- **Basal bark application any time of year**

Russian olive thicket in Western Nebraska. Before......
Basal bark Application

Spray around the circumference of the trunk at a height of about 12 to 15 inches until wet, all the way around the main stem to the groundline, but not to the point of runoff or puddling.

When using an oil based mixture for cut stump treatments such as Remedy Ultra™ 4 Ultra in basal oil mix –

Equipment is usually a backpack & spray wand – just like basal applications and usually the same mix as basal.

Application can be delayed for days or weeks after cutting.

But remember – the sooner the better after cutting produces the best results and stem kill.

Basal Bark Applications (Remedy Ultra™ + Oil)

Recommended Equipment

Backpack sprayer

Brass wand with tip shut off

Adjustable-cone nozzle 5500-X3 or Y3 up to X8

™Trademark of Dow AgroSciences LLC. Always Read and follow the label directions

Basal Treatment Made May 7, 2004

Photo Taken May 22, 2004

Courtesy: Rodger Benson, Prof. Weed Mngt Service

Oak savannah south of Chariton – untreated
The cost of procrastination
- Severe pasture weed and brush problems did not develop overnight and will likely not be fixed overnight

Conclusion
- Management of weeds and brush in pastures should be a part of a good forage management strategy
- Be sure to do your homework before embarking on a weed or brush management program
- Weed management in pastures is a long term commitment so weigh costs/benefits.
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If we don’t take care of our pastures……

QUESTIONS

Always read and follow label directions for all pesticides.