Weed Control in Forages

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Stand Establishment

• The first step in weed control for ANY forage crop:
  – Healthy, vigorous crop at establishment
  – Will reduce the need for herbicides later on

• To accomplish:
  – Optimal planting date, seeding rate, irrigation, and fertility
1. RR Alfalfa
2. Sainfoin
Roundup Ready Alfalfa

• Approved by government in 2005
• Commercially available for a short time, then litigation removed from market
• After Supreme Court ruling, back on the market
• Pricing ~$2.50/lb premium
  ? still accurate ?
What is it?
Benefits of RR Alfalfa

• Enhanced control of problem weeds
  – Canada thistle
  – Dandelion
  – Dodder
  – Nutsedge
  – Quackgrass
  – ALS Resistant Kochia
Benefits of RR Alfalfa

• Reduced early season crop injury
  – Varieties are *VERY* tolerant to glyphosate

• Better weed control during establishment phase
  – Most important time for a good weed-free stand of alfalfa
  – Will aid in improved yield, quality, and stand-life
  – May *REDUCE* herbicide use over time
Concerns with RR Alfalfa

- Development of glyphosate resistant weeds
- Shifts to species difficult to control with glyphosate
- Gene flow from RR alfalfa fields to feral alfalfa populations
- Potential for reduced market
Establishment:

• 22 to 44 ounces of Roundup PowerMax before the 3 to 4 trifoliate stage during establishment
  – Removes non-resistant seedlings (<10%)

• Second application of up to 44 ounces
  – After 5 trifoliate stage
  – Target weeds at <4”
  – At least 5 days before cutting
  – Apps should be at least 7 days apart
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Timing</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit+Select</td>
<td>4 + 8</td>
<td>2-leaf</td>
<td>3.7</td>
</tr>
<tr>
<td>Raptor</td>
<td>4</td>
<td>2-leaf</td>
<td>3.7</td>
</tr>
<tr>
<td>Roundup</td>
<td>22</td>
<td>2-leaf</td>
<td>4.4</td>
</tr>
<tr>
<td>Roundup</td>
<td>44</td>
<td>2-leaf</td>
<td>4.2</td>
</tr>
<tr>
<td>Roundup</td>
<td>22</td>
<td>2-leaf + 3 wk</td>
<td>4.3</td>
</tr>
<tr>
<td>Roundup</td>
<td>22</td>
<td>4-leaf</td>
<td>4.0</td>
</tr>
<tr>
<td>Roundup</td>
<td>44</td>
<td>4-leaf</td>
<td>3.9</td>
</tr>
<tr>
<td>Weedy Check</td>
<td></td>
<td></td>
<td>1.7</td>
</tr>
</tbody>
</table>
Raptor 4 oz/A
4 trifoliates

ALS-resistant kochia not controlled
Roundup PowerMax  22 oz/A
unifoliate + 3 wks later
No weed interference
Roundup Powermax 42 oz/A
4 trifoliate
Influence of 4 weeks of weed interference
RR Alfalfa Removal

• We usually use Roundup!!
• Other options are available
• Several herbicide options combined with tillage will provide adequate removal
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Alfalfa control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oz/A</td>
<td>No-till</td>
</tr>
<tr>
<td>Stinger</td>
<td>4</td>
<td>91</td>
</tr>
<tr>
<td>Curtail</td>
<td>40</td>
<td>93</td>
</tr>
<tr>
<td>Clarity</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Distinct</td>
<td>8</td>
<td>34</td>
</tr>
<tr>
<td>2,4-D</td>
<td>32</td>
<td>88</td>
</tr>
<tr>
<td>Tordon</td>
<td>8</td>
<td>98</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>75</td>
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</tbody>
</table>
Why Sainfoin?

- Good nutritional content
  - Similar to alfalfa
- Drought tolerant
- Does not cause bloat

Delaney
Shoshone
Weed Control?

“Weed competition can be reduced in the seedling year by mowing, grazing or with herbicides.”

– Montana Extension Bulletin

No herbicides are named in the bulletin…
What About Glyphosate?

“Sainfoin is already naturally resistant to Roundup and many chemicals…”

Prime Grains

Get in the pink with....

A 15 year old perennial crop of organic Prime Sainfoin

PRIME SAINFOIN

www.primegrains.com
Keil doesn't spray insecticides at all and he has one stand that is 27 years old. “I hit it with six ounces of Roundup in the spring to keep it clean and that is it. It costs about $1 an acre. If you do that once a year it seems to hold out the spotted knapweed and leafy spurge, as well as cheatgrass and downy brome, which are such a problem to so many producers, so it's really easy weed control,” he said.
“How do you keep the fields clean of cheat grass and other weeds?
We simply spray an annual application of 5-6 ounces of glysophate costing $1/acre of chemical.”
Roundup on Sainfoin
Reduces Yield of Roundup Ready Sainfoin?

![Graph showing the reduction in yield of Roundup Ready Sainfoin vs. Roundup rate (fluid ounces/acre). The graph includes two lines: FALL (red) and SPRING (blue). The x-axis represents Roundup rate (fluid ounces/acre), ranging from 0 to 32, and the y-axis represents Sainfoin yield loss (tons/acre), ranging from 0 to 3.0. The lost revenue is also shown on the right y-axis, ranging from $0 to $400.]
Using ethofumesate when irrigating for emergence

by Andrew Kniss & Abdel Mesbah

At a recent meeting in Powell, I was asked how to best use ethofumesate (active ingredient in Nortron SC and other herbicides) in fields that must be furrow irrigated for herbicide emergence. This is a difficult question. Ethofumesate (and almost all soil applied herbicides) require soil moisture to be [...] Read More

Recent Posts

Using ethofumesate when irrigating for emergence

New Wyoming Weed Watchlist Field Guide Available!

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Andrew Kniss (@WyoWeeds)

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@cast @WyoWeeds @swarp "hopely we get more than 3.5 inches for the year on some of our rangeland sites!" 1 week ago

@LynnBrosnacke "quite the ambitious endeavor" 1 week ago
We continue to get quite a few questions about weed control in sainfoin. Unfortunately, there are very few herbicide options currently registered for use in sainfoin (only 6 different active ingredients). We are investigating some additional herbicides in ongoing research trials. Although several herbicides look promising in our trials, these potential options will not be registered in time for the 2013 growing season (in fact, it is a distinct possibility they never will be). The following table lists currently registered herbicides for sainfoin in Wyoming. There are no herbicides that we can use for broadleaf weed control in actively growing sainfoin. Glyphosate and paraquat can be applied to control any green, actively growing weeds prior to sainfoin green-up, but the application window is very narrow, especially if targeting summer annual weeds. Winter annual weeds like some mustards and downy brome (cheatgrass) may be controlled well with dormant applications. Metribuzin might provide limited residual weed control at higher application rates, but must also be applied when the sainfoin is dormant. Metribuzin also has a 28 day pre-harvest interval, which means you cannot cut or graze the sainfoin until at least 28 days after application.

### Herbicides registered for use on sainfoin in Wyoming

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Trade name(s)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>clethodim</td>
<td>Select, Arrow, Intensity, Section, Shadow, Tapout, Volunteer</td>
<td>For postemergence grass control. 15 day pre-harvest interval.</td>
</tr>
<tr>
<td>sethoxydim</td>
<td>Poast, Poast Plus</td>
<td>For postemergence grass control. 14 day pre-harvest interval.</td>
</tr>
<tr>
<td>pronamide</td>
<td>Kerb</td>
<td>Fall or winter applications for preemergence weed control in established sainfoin. Applications must be made before soil freeze up.</td>
</tr>
<tr>
<td>paraquat</td>
<td>Gramoxone, Firestorm, Para-Shot, Parazone</td>
<td>Pre-Plant or dormant applications for control of emerged weeds. 60</td>
</tr>
</tbody>
</table>