Managing Alfalfa Infested with Roughstalk Bluegrass

Phil Kaatz
Michigan State University Extension
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Growing Weed Problem?

- **What:** Roughstalk bluegrass
- **Where:**
  - Alfalfa/grass mixes
  - Alfalfa fields
  - Row crops
  - Thumb, Central MI, SW MI
  - Spreading thru MI
Roughstalk bluegrass

Poa trivialis

Mature plant

Oregon State University
Larry Burrell and Jed Colquhoun photo Collection
roughstalk bluegrass
*Poa trivialis* L.

Distribution Maps: State / Southeast / Points on Google Maps
Usually A Turfgrass Problem

- Deep and infrequent irrigation encourages turfgrass root development, which improves the ability of desired grasses to compete with annual and roughstalk bluegrass in mixed stands.
Roughstalk Bluegrass
(*Poa trivialis* L.)

- Matures earlier than alfalfa and other cool season grasses
- Found in all cropping systems
Roughstalk bluegrass ID

- Folded leaves
- Broad collar
- No auricles
- Hairless
- Ligule ~ 1/8 in.
- Distinctive boat shaped leaves
Seeds:
About the size of timothy seed
2.5 million/lb

- Germinates rapidly
- Spreads by seed and creeping stolons
Roughstalk Bluegrass
(*Poa trivialis* L.)

- Sod-forming perennial
- Grows in rich, wet soil conditions more commonly found in forage seeded areas.
- Dormant roughstalk bluegrass, which may be found in patches, takes on a *copper color* in high temperatures and dry periods.
Usually 1 – 3 feet tall

Stems become lignified resulting in low digestibility of the crop.

Thrives with frequent cutting or grazing.

Tolerates close mowing.
Forage Quality

- June 24, 2009  Dry hay sample – 5 year alfalfa stand with no previous grass

- Crude protein  8.1
- ADF %         43.5
- NDF %         63.0
- TDN %         53.0
- RFV           81.3

- Alfalfa/grass
  - DM Basis
    - Mid-June Bale
    - Straw
      - 5.0
      - 64.0
Bluegrass Identification… It’s a challenge!

- 4 Problem grasses
  - Annual bluegrass (Poa annua L.)
  - Kentucky bluegrass (Poa pratensis L.)
  - Canada bluegrass (Poa compressa L.)
  - Roughstalk bluegrass

- Similarity to timothy
Annual bluegrass

Robert H. Mohlenbrock. USDA SCS. 1989

Photo by Richard Old, www.xidservices.com
Canada bluegrass

Photo by Richard Old, www.xidservices.com

Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database / USDA SCS. 1989.
Kentucky bluegrass

Photo by Richard Old, www.xidservices.com
## Bluegrass vs. Timothy Comparison

<table>
<thead>
<tr>
<th>GRASS</th>
<th>DURATION</th>
<th>HEIGHT</th>
<th>SEED SIZE/lb.</th>
<th>REPROD.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual BG</td>
<td>Annual</td>
<td>.3 - 1 ft mature</td>
<td>1.2 million</td>
<td>seed</td>
</tr>
<tr>
<td>Canada BG</td>
<td>Perennial</td>
<td>2 ft mature</td>
<td>2.4 million</td>
<td>Seed, rhizome</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Perennial</td>
<td>1.5 ft mature</td>
<td>1.4 million</td>
<td>Seed, rhizome</td>
</tr>
<tr>
<td>Roughstalk BG</td>
<td>Perennial</td>
<td>2.5 ft mature</td>
<td>2.5 million</td>
<td>Seed, stolons</td>
</tr>
<tr>
<td>Timothy</td>
<td>Perennial</td>
<td>3.0 ft mature</td>
<td>1.3 million</td>
<td>Seed</td>
</tr>
</tbody>
</table>
ROUGHSTALK BLUEGRASS SUPPRESSION IN ALFALFA/GRASS SEEDINGS

R. R. Hahn P. J. Stachowski
Crop and Soil Sciences
Cornell University
In 2003, the alfalfa/timothy yields averaged 1.71 T DM/A and were similar to the alfalfa check.

The alfalfa/orchardgrass mixtures yielded more than the alfalfa check and averaged 2.08 T DM/A.

Each of these alfalfa/grass mixtures effectively suppressed the bluegrass. There was no bluegrass in either of the alfalfa/orchardgrass treatments in either year and bluegrass made up no more than 8% of the first cutting yield for either of the alfalfa/timothy treatments either year.

Russell Hahn, Cornell University 2004
Roughstalk bluegrass is a perennial, cool season grass that heads in May and early June and then goes dormant in summer.

This weedy grass is a problem in established alfalfa because it. Its presence in alfalfa that is harvested and preserved as haylage is perhaps of less concern than in dry hay.

Research results show that seeding a perennial forage grass with alfalfa suppresses bluegrass and probably other weeds. The results show that the recommended seeding rate (4 – 6 lb. of seed per acre) for timothy or orchardgrass is adequate for this purpose.
NY Study: SUMMARY AND CONCLUSIONS

- Perennial forage grasses suppress bluegrass in alfalfa grass seedings.
- Seeding rate of 5 lb/A appears more than adequate to suppress bluegrass.
- Orchardgrass is more effective than timothy for suppressing bluegrass.
2009 – trials established in Lapeer County assessing in-season responses.

2010 – trials established in Lapeer County assessing dormant and in-season responses to herbicides.
Figure 1. Percent control of Roughstalk bluegrass 39 days after treatment with five herbicides*.

*One year’s data (2009), mid-season treatment
Figure 2. Percent alfalfa and timothy 39 days after treatment with five herbicides*.
*One year’s data (2009), mid-season application
## Control of rough-stalk bluegrass dormant application

April 5, 2010

<table>
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<tr>
<th>Treatments</th>
<th>Adjuvant</th>
<th>Dormant application Rate</th>
<th>% Control of RSB Dormant - April</th>
<th>% Stand Dormant - April</th>
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<tbody>
<tr>
<td>Gramoxone</td>
<td></td>
<td>1 pt.</td>
<td>44 bc</td>
<td>100</td>
</tr>
<tr>
<td>Inteon</td>
<td></td>
<td></td>
<td></td>
<td>97 a</td>
</tr>
<tr>
<td>Pursuit</td>
<td>+AMS 2.5 lb/A +NIS 0.25%</td>
<td>4 oz.</td>
<td>35 c</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>84 a</td>
</tr>
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<tr>
<td>Raptor</td>
<td>+28%N 2.5% +COC 1%</td>
<td>4 oz.</td>
<td>61 b</td>
<td>100</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>37 b</td>
</tr>
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<td>35 c</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 c</td>
</tr>
<tr>
<td>Velpar 2L</td>
<td></td>
<td>1 qt.</td>
<td>89 a</td>
<td>100</td>
</tr>
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<td></td>
<td></td>
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<td></td>
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% Control Rough-stalk bluegrass

Dormant appl.  After 1st Cutting

![Bar chart showing % control of Dormant appl. and After 1st Cutting for various products.](chart.png)
Ratings at 30 days after dormant application were not late enough to evaluate full effects of Velpar on timothy.

* Ratings at 30 days after dormant application were not late enough to evaluate full effects of Velpar on timothy.
% Stand 30 Days After 1st Cutting

- Alfalfa
- Timothy

Graph showing % Stand 30 Days After 1st Cutting for various treatments:
- Gramoxone...
- Pursuit 4 oz.
- Pursuit 6 oz.
- Raptor 4 oz.
- Raptor 6 oz.
- Select Max
## Control of Roughstalk bluegrass

**After 1\textsuperscript{st} cutting – May 28, 2010**

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Adjuvant</th>
<th>After 1st cutting Application rate</th>
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<tr>
<td>Gramoxone Inteon</td>
<td></td>
<td>1 pt.</td>
<td>83 ab</td>
<td>100</td>
<td>62</td>
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<tr>
<td>Pursuit</td>
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<td>50 b</td>
<td>100</td>
<td>90</td>
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<tr>
<td>Pursuit</td>
<td>+AMS 2.5 lb/A +NIS 0.25%</td>
<td>6 oz.</td>
<td>58 b</td>
<td>100</td>
<td>60</td>
<td></td>
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<tr>
<td>Raptor</td>
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<td>4 oz.</td>
<td>95 a</td>
<td>95</td>
<td>29</td>
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<tr>
<td>Raptor</td>
<td>+28%N 2.5% +COC 1%</td>
<td>6 oz.</td>
<td>100 a</td>
<td>97</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Select Max 1EC</td>
<td>+COC 1% +AMS 2.5 lb/A</td>
<td>6 oz.</td>
<td>93 a</td>
<td>100</td>
<td>10</td>
<td></td>
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<td>Velpar 2L</td>
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Observations:

- Control of RSB is extremely difficult in mixed alfalfa/grass stands.
- Limited herbicide options are available.
- Establishing glyphosate resistant alfalfa first may be an acceptable option.
Conclusions:

- Prevention is the best form of control for RSB.
- **NONE** of the herbicide treatments were ideal for both control of RSB and not hurting timothy and/or other grass crops.
- *Growers are strongly cautioned that damage to timothy from Velpar will likely occur.*
- Gramoxone Inteon or 4 oz. of Pursuit applied after 1\textsuperscript{st} cutting may be a viable option.
- 5 lbs. of orchardgrass may be an option instead of timothy according to Cornell University.
● MSU Forage Information Systems
● http://fis.msue.msu.edu/
  – Rough-stalk bluegrass factsheet
Questions?