2021 Alfalfa/Pasture Weed Research Update

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Were weeds a problem in alfalfa in 2021?

Established alfalfa competes with weeds

- Traits that make alfalfa competitive
  - emerges early in spring
  - canopy develops quickly

- Stress/injury/damage can reduce competitiveness
  - Old stands
  - Insect damage
  - Harvest schedules
  - Fertility
  - Drought

Waterhemp in alfalfa
Alfalfa is a good crop to reduce waterhemp populations

<table>
<thead>
<tr>
<th>Waterhemp biology</th>
<th>How to use to maximize control</th>
<th>Is this easy to accomplish in Alfalfa?</th>
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<tbody>
<tr>
<td>Emerges from June – August</td>
<td>Have residual herbicides in place prior to emergence</td>
<td>YES</td>
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<tr>
<td>Sensitive to shading</td>
<td>Maximize shading from June – August</td>
<td>YES (except for harvest)</td>
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<tr>
<td>Develops resistance to herbicides</td>
<td>Control with effective management methods</td>
<td>YES – mowing, effective herbicides, alfalfa competition</td>
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<td>Seed do not persist long in the soil</td>
<td>Prevent seed production for multiple years</td>
<td>YES</td>
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Waterhemp in established alfalfa

- Doesn’t emerge until after harvest
  - Apply PRE after 1st or 2nd harvest
- No impact to alfalfa yield or quality
- Most plants die in established alfalfa
  - >90% in 2021 in WI, 100% in MN
  - >95% in 2020
- Seed produced in Sept - October
Challenges for waterhemp control in alfalfa

• Seeding year control
  • Herbicides available not effective (waterhemp resistant)
    • Raptor/Pursuit, glyphosate
  • Use products with no known resistance to population
    • Bromoxynil, 2,4-DB, Acetochlor
    • Follow restrictions and tolerate additional injury

• Control in thin stands
  • Infestations worse in thin stands, is it worth keeping?

• Reliance on residual herbicides
  • Will they persist for the entire season?
  • Will they be activated by precipitation?
Be prepared for a survey this winter......

• What field(s) was it a problem in
• How was the field managed
  • during establishment
    • Seeding date/rate
    • Alfalfa stand counts
    • Weed management methods/dates
    • Level of alfalfa in establishment AND subsequent years
• When established
  • Harvest schedule/frequency
  • Fertility
  • Alfalfa stand counts
  • Weed management methods/dates
Interseeding alfalfa into corn silage

• Efforts focused on increasing adoption

• Identified major obstacles to successful alfalfa establishment

• Researching pesticide application timings/tank mixing
Obstacles that reduce successful alfalfa establishment

*Researched in 4 states across 28 locations*

Many of the top variables involved pests

- Foliar alfalfa diseases
- Annual grass cover
- Potato leaf hopper injury

![Graph showing importance of various factors related to alfalfa establishment]
Pests reduce alfalfa stand density in interseeded system

Alfalfa foliar disease
% leaves infected

Annual grass cover
% cover June

Potato leaf hopper injury
1-5 scale
Tools are available to manage these pests

What is the most cost-effective approach?

• Estimate cost $150-200/A
  • Fungicide: Priaxor at 4 fl oz/A ($15 plus application cost)
  • Insecticide: Warrior at 1 fl oz/A ($3 plus application cost)
  • Herbicide: Warrant PRE; glyphosate or bromoxynil POST ($25-30 + 2x application cost)
  • plant growth regulator: Kudos 26 oz/A ($75/A + application cost)

• Can we combine applications to reduce cost?
  • Herbicides: PRE and June when weeds are < 6”
  • Kudos: June when alfalfa is 6-12” tall
  • Fungicide: best early July just before canopy closes
  • Insecticide: (June-July) when potato leaf hoppers are present

• If we use fungicide and insecticide, can we reduce rate of (Kudos)?
Spraying fungicide + insecticide improves establishment at a reduced Kudos rate.

Not treated

Kudos 16 oz/A

Kudos 26 oz/A

Kudos 16 oz/A+ Priaxor + Warrior II
Factsheet available describes best management practices for this system

Interseeding alfalfa into silage corn
CURRENT RECOMMENDATIONS

Over the last decade, scientists at the USDA-Agricultural Research Service, the University of Wisconsin, Michigan State University and Penn State University have been developing reliable methods for establishing alfalfa in high yielding silage corn. Based on this work, the following represents our current recommendations for implementing this practice on farms. Establishment of alfalfa by interseeding into corn has:

**Benefits**
- Up to 3 fold greater 1st year alfalfa yield compared to conventional spring-seeded alfalfa and greater overall forage production from corn silage alfalfa rotations
- Proficiency of corn silage-alfalfa rotations increased by 7-15% under typical production conditions
- Soil and nutrient loss from expanded decreased by 37-67% due to greater soil cover provided by interseeded alfalfa

**Challenges**
- Competition from interseeded alfalfa seedings can reduce corn silage yield by 3-15%
- Wet soil conditions during corn silage harvest can damage alfalfa stands
- 1-3 extra passes are required for a mechanical application to ensure establishment of alfalfa

On NPM website, look under publications


- Demonstrations planned for 2022 with NPM throughout state
- Look for field-days mid to late summer
Pasture research and extension

• Two new herbicides on the horizon
  • Corteva: ProClova (2,4-D + florpyrauxifen)
  • Bayer: Rezilon (indaziflam)

• More restrictions for some pasture herbicides
  • Products that contain:
    • aminopyralid, clopyralid, and picloram
Increase in restrictions for pasture herbicides to prevent residue from moving off-site

additional restrictions are likely for the following products:

• Aminopyralid
  • Milestone
  • Grazonnext
  • DuraCor

• Picloram
  • Tordon
  • Grazon

• Clopyralid ?????
  • Stinger
  • Transline

RESTRICTIONS BEING DISCUSSED

Prohibition of off-site use of treated plant materials and manure from grazing animals for compost and animal bedding/feed until 18 months after application

Requiring livestock be grazed on forage that haven’t been treated for three days before moving to a site where manure is collected, or sensitive crops are grown

Requiring pasture applicators to notify the property owners/operators of the compost prohibition

Applicators keep record of notification for two years

Requiring registrants to participate in a stewardship program and provide educational outreach material
Clover safe herbicide (ProClova) available 2022?????

- ProClova (GF-3731)
  - Florpyrauxifen-benzyl + 2,4-D
- Effective on annuals/biennials
  - Burdock, biennial thistles, wild carrot
- Minor injury to **white clover**
  - 0-40% reduction biomass
- Moderate injury to **red clover**
  - 50-100% reduction biomass
- No grazing restrictions, short residual (days)
Annual grass control in pastures (Rezilon)

Rezilon = Indaziflam

- registered in warm season grass pastures
  - expand to cool season grasses

- Residual control of annual grasses for 2-4 months
  - Higher rates injure cool season grasses

- Results suggest reduction but not elimination of annual grasses
  - Continuing to optimize rates/timings
Visit my website for more information
www.renzweedscience.cals/wisc.edu
Hope 2021 wasn’t stuffed like ours......