Common windgrass control in winter wheat

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Common windgrass  
*Aperia spica-venti* L.

- **Winter annual**
  - Emergence pattern coincides with winter wheat
  - Growth is similar to winter wheat

- **Historically…..**
  - Limited options for management
  - POST plant incorporated Treflan

- **Newer selective herbicide options**
Common windgrass distribution
Evaluate options for management of windgrass

<table>
<thead>
<tr>
<th>PRE</th>
<th>FALL (EPOS) – Nov. 5 – Wheat Feeke’s 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidua (1.5 oz)</td>
<td>PowerFlex HL (2 oz) + NIS + AMS</td>
</tr>
<tr>
<td>Zidua (3 oz)</td>
<td>Osprey (4.75 oz) + NIS + AMS</td>
</tr>
<tr>
<td>Treflan (1 pt)</td>
<td>Axial XL (16.4 fl oz)</td>
</tr>
<tr>
<td>Prowl H₂O* (2 pt)</td>
<td>Puma (10.6 fl oz)</td>
</tr>
<tr>
<td></td>
<td>PowerFlex HL + Huskie + NIS + AMS</td>
</tr>
<tr>
<td></td>
<td>Osprey + Huskie + NIS + AMS</td>
</tr>
</tbody>
</table>

* 1-leaf wheat
## Wheat (Feeke’s 4) - Windgrass (3” tall)

<table>
<thead>
<tr>
<th>Option 1</th>
<th>Option 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerFlex HL (2 oz) + NIS + AMS</td>
<td>PowerFlex HL + Huskie + NIS + AMS</td>
</tr>
<tr>
<td>Osprey (4.75 oz) + NIS + AMS</td>
<td>Osprey + Huskie + NIS + AMS</td>
</tr>
<tr>
<td>Axial XL (16.4 fl oz)</td>
<td>PowerFlex HL + Affinity BroadSpec + NIS + AMS</td>
</tr>
<tr>
<td>Axial Star (16.4 fl oz)</td>
<td>Osprey + Affinity BroadSpec + NIS + AMS</td>
</tr>
<tr>
<td>Puma (10.6 fl oz)</td>
<td></td>
</tr>
</tbody>
</table>
Late-season control of windgrass from **PRE** applications

![Bar chart showing control percentage of different treatments.]

- **Zidua (1.5 oz)**: Control (b)
- **Zidua (3 oz)**: Control (a)
- **Treflan**: Control (d)
- **Prowl H2O**: Control (c)
Late-season control of windgrass from **FALL (EPOS)** applications

![Bar graph showing control percentages for different products.](image-url)
Late-season control of windgrass from **SPRING** applications

Control (%)

- PowerFlex HL: a
- Osprey: a
- Axial XL: ab
- Axial Star: b
- Puma: c

Treflan (PRE)
Slower kill from spring applications

June (1 MAT)  
June (2 MAT)

PowerFlex HL  Osprey  PowerFlex HL  Osprey

Control (%)  

Fall  Spring

PowerFlex HL  Osprey  PowerFlex HL  Osprey

PowerFlex HL  Osprey
Summary

- Current PRE herbicides are not adequate for windgrass control
- Spring applications of Axial XL or Axial Star provided good control of windgrass
- Spring and Fall applications of PowerFlex HL and Osprey were excellent on windgrass
  - Spring applications provided slower kill (yield???)
  - Tank-mixtures with Huskie or Affinity BroadSpec did not reduce windgrass control
  - Fall tank-mixtures did not control summer annual weeds
Recommendations for common windgrass control

- PowerFlex HL (2 oz/A) or Osprey (4.75 oz/A) applied in Fall or Spring should be used to control common windgrass
  - **Fall applications:**
    - Should be made after windgrass emergence (early to mid-November)
    - An additional spring application will be needed to control summer annual weeds
  - **Spring applications:**
    - Slower kill may impact wheat yield from windgrass competition
Common windgrass in Michigan

Keys to identification and management in winter wheat

Christy Sprague, Extension Weed Science

Common windgrass (Apera spica-venti L.) is a winter annual grass species that has become more of a weed problem in winter wheat production. In the past the distribution of common windgrass in Michigan has been limited. However, over the last several years this weed has been reported in several counties. Management of this weed can be difficult because the emergence pattern and growth closely coincide with winter wheat, and the availability of selective herbicides is limited.

**Identifying characteristics:**
- Fall emergence; threadlike appearance after emergence
- Overwinters with 2- to 3-leaves
- Produces several tillers similar to wheat
- Leaves smooth to slightly rough; smooth leaf sheath
- Membranous ligule that becomes jagged and lengthens with age
- Plants can be up to 5 feet tall
- Flowers the same time as wheat
- Flowering structure: open-branched, reddish panicle with fine branches
- Branch ends have a single spikelet with a long, straight awn
- Seeds often mature prior to wheat harvest

**Common distribution of windgrass in Michigan**

**Keys to successful windgrass management in wheat**

Proper identification and early detection of common windgrass will improve the opportunity for successful management. The following steps outline the strategies for the best management of common windgrass in winter wheat.

**Step 1: Start clean!!**
Common windgrass present at the time of winter wheat planting needs to be controlled either by tillage or an appropriate broadcast herbicide application. Glyphosate, combinations with glufosinate, or Gramoxone will provide good control of windgrass and other winter annuals that have emerged prior to planting wheat.

**Step 2: Plant a competitive crop.**
Practices that enhance the competitive ability of winter wheat with common windgrass will improve the consistency of the herbicides programs listed below. These practices include planting wheat at higher seeding rates and optimizing fertility for the crop.

**Step 3: Apply an effective postemergence herbicide.**
Windgrass is most effectively controlled by postemergence herbicide applications. MSU research sponsored by the Michigan Wheat Program has shown that both fall and spring herbicide applications can effectively manage windgrass in winter wheat (Table 1). However, fall applications have shown the greatest opportunity to reduce windgrass competition.

**Approach A: Fall applications**
These applications need to be made to emerged windgrass and emerged winter wheat. Typically applications will occur in early- to mid-November, when winter wheat has at least 3 leaves. Additional spring herbicide applications are needed to control summer annual weeds.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Group #</th>
<th>Rate/A</th>
<th>Fall applied</th>
<th>Spring applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerFlex HL*</td>
<td>2</td>
<td>2 oz</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Osprey*</td>
<td>2</td>
<td>4.75 oz</td>
<td>Good - Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Axial XL</td>
<td>1</td>
<td>16.4 fl oz</td>
<td>--</td>
<td>Fair-Good</td>
</tr>
<tr>
<td>Puma</td>
<td>1</td>
<td>10.6 fl oz</td>
<td>--</td>
<td>Fair</td>
</tr>
</tbody>
</table>

*Include a non-ionic surfactant and a nitrogen source (AMS or 20% LIAN)

**Approach B: Spring applications**
These applications should be made when windgrass is 2 to 4-inches tall and wheat is at Feekes' stage 4 or 5 (prior to jointing). Windgrass control with spring applications generally takes 3 to 4 weeks for maximum control. This slower kill may allow for more windgrass competition with wheat. Tank-mixtures with other herbicides will be needed for control of additional broadleaf weeds.

**Step 4: Additional strategies to consider.**
In high windgrass infested areas, consider a change in crop rotation. Windgrass can be effectively managed in many of our spring planted crops. It is also important to avoid spreading the windgrass seed from field to field with tillage and harvest equipment. If possible, harvest these fields last or try to clean equipment between fields. Weed-free wheat seed should also be planted. Using multiple tactics will provide greater control success and prevent the increased spread of windgrass.

Financial support for this research was provided by the Michigan Wheat Program.
Announcements

- **2012 Weed Control Results** are now available for viewing

- **Glyphosate-resistant Palmer Amaranth in MI**

Current Newsletters

**Preharvest herbicide options for soybean: Weeds may be an issue**

Consider using a preharvest herbicide application in weedy soybean fields this year.

The lack of good row closure and challenges with weed control this season has left several soybean fields unfinished. With a killing frost on the horizon, these weeds can easily be labeled as “Harvest weeds.” Using the “green” stem to control soybean weeds is a challenge. Preemergence products, including glyphosate (Roundup and several other formulations), Gramoxone 2SL (paraquat and other formulations), Clarity 4L (dicamba), and Aim 1.9EW (carfentrazone). Differences in these products include the speed of activity, preharvest intervals, recropping restrictions, and effectiveness.

September 20, 2012

read »

Upcoming Events

- **December 4-6** - **Great Lakes Fruit, Vegetable, and Farm Market Expo** (Grand Rapids, MI)

**Preharvest herbicide use in dry edible beans: Caution needs to be taken to avoid illegal residues**

The main intention of preharvest herbicide applications is to desiccate weeds; however, many growers use these herbicide applications to burn along or even cut corn residues.
Acknowledgements