GRAIN SORGHUM WEED CONTROL: START CLEAN, STAY CLEAN

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K-STATE
Research and Extension

Some key weed species

Back to the basics

- Use integrated practices
- Make timely applications

To what extent have limited herbicide options let you to avoid growing grain sorghum?

- A lot
- Somewhat/ occasionally
- Not at all
### Potential carryover

- Accent
- Python
- Varro
- Classic
- FirstRate
- Pursuit
- Reflex
- Raptor
- Scepter

![Graph showing potential carryover]"
What herbicides are you planning for your grain sorghum acres in 2021?

- Inzen
  - Corteva
  - Zest herbicide (nicosulfuron)
  - POST
  - Some varieties available in 2021?

- iGrowth
  - ADVANTA/UPL
  - Imiflex herbicide (imazamox)
  - PRE or POST
  - Launch in 2021

- Double Team
  - Sorghum Partners/ADAMA
  - First Act
  - Pilot launch in 2021
  - Waiting for herbicide registration, Canadian export approval

2020 Trials

- Fallow fields
- PRE:
  - Imazamox (Imiflex) vs Group 15 herbicides
- POST:
  - Imazamox (Imiflex), nicosulfuron (Zest) and quizalofop
  - 2 rates
  - 2 growth stages

Herbicide-resistant grain sorghum

Green foxtail control

PRE - Hays

- 6 oz PRE
- 9 oz PRE
- Dual
- Warrant
- Outlook

% Control

- 34 DAT
- 50 DAT
- 77 DAT

Imiflex 9 oz 50 DAT

Vipan Kumar, Brent Bean
**Large crabgrass control**
PRE - Garden City

<table>
<thead>
<tr>
<th>Product</th>
<th>29 DAT</th>
<th>58 DAT</th>
<th>78 DAT</th>
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</thead>
<tbody>
<tr>
<td>Imiflex 6 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imiflex 9 oz</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Dual 24 oz</td>
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<tr>
<td>Warrant 64 oz</td>
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<tr>
<td>Outlook 18 oz</td>
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</tbody>
</table>

- Pat Geier, Randall Currie, Brent Bean

**Garden City - 28 DAT**

- Images of treated and nontreated plots.

**Green foxtail control**
EPOST - Hays

<table>
<thead>
<tr>
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<th>28 DAT</th>
<th>42 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imiflex 6 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imiflex 9 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quizalofop 6 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quizalofop 10 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zest 0.68 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zest 1.02 oz</td>
<td></td>
<td></td>
</tr>
</tbody>
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- Vipan Kumar, Brent Bean

**Hays - 28 DAT**

- Images of treated and nontreated plots.
Large crabgrass control
EPOST - Garden City

% Control

- Imiflex 6 oz
- Imiflex 9 oz
- Quizalofop 6 oz
- Quizalofop 10 oz
- Zest 0.68 oz
- Zest 1.02 oz

14 DAT
28 DAT
42 DAT

Pat Geier, Randall Currie, Brent Bean

Green foxtail control
LPOST - Hays

% Control

- Imiflex 6 oz
- Imiflex 9 oz
- Quizalofop 6 oz
- Quizalofop 10 oz
- Zest 0.68 oz
- Zest 1.02 oz

21 DAT

Vipan Kumar, Brent Bean

Large crabgrass control
LPOST - Garden City

% Control

- Imiflex 6 oz
- Imiflex 9 oz
- Quizalofop 6 oz
- Quizalofop 10 oz
- Zest 0.68 oz
- Zest 1.02 oz

12 DAT
26 DAT
38 DAT

Pat Geier, Randall Currie, Brent Bean

Rotational Restrictions

Product | Corn (Field) | Soybeans | Wheat (winter) | Cotton | Canola | Sorghum | Sunflower
--- | --- | --- | --- | --- | --- | --- | ---
Zest | -- | 15 d | 4 mos | 10 mos | 10-18 mos | 18 mos | 10-18 mos
IMIFLEX | 8.5 mos* | -- | 3 mos* | 9 mos | 18-26 mos* | 18 mos | 9 mos*
Quizalofop ** | 120 d | -- | 120 d | -- | -- | 120 d | --

*Except Clearfield varieties
**Based on Assure II label
Stewardship

- Manage to slow the development of herbicide resistant weeds
  - One (IMIFLEX) or two (Zest) applications per year
  - Do not plant sorghum in the same field two consecutive years
  - Do not plant where ALS-resistant shattercane or johnsongrass occur

- Avoid outcrossing to shattercane and johnsongrass
  - Control escapes and grass along field edges
  - Ensure shattercane and johnsongrass are not flowering same time as sorghum

ALS-resistance in shattercane

ALS-resistance in johnsongrass

Which herbicide-resistant grain sorghum trait are you most interested in?

- Inzen
- Imiflex
- Double Team
- None of them
Atrazine registration review

- Interim decision released Sept 2020
- Two more assessments
  - Endangered species assessment (deadline 9/28/21)
  - Endocrine disruptor screening
- Changes most likely to affect Kansas farmers
  - 15 MPH weed speed restriction
  - 5-foot buffer from edge of streams/rivers and endangered species habitat
  - Medium-sized droplets or larger

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