Corn and Sorghum Weed Management Update

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Corn and Sorghum Update 2017

• Enlist Duo
• Acuron
• Acuron Flexi
• Difflexx Duo
• Resicore
• Kochiavore
• Kochia management – now
• Inzen sorghum – Zest WDG
• Huskie following PRE applied Lumax and Lexar

Atrazine issues AGAIN!

• Complete EPA review, Timeline 3 yrs!
  Outcomes?
  • Cancel registration, very unlikely
  • Change labeled rates and total annual rates, likely
  • Alter current uses, very possible
  • Add additional restrictions, very possible
• Off target movement
  • Atrazine is safe but finding atrazine in ground and
    surface water, increases the overall problem!
  • Need to be good stewards with atrazine use

Best Management Practices for Atrazine
KSU publication MF-2182

• Incorporation reduces losses 67%
• Apply atrazine prior to April 15, reduce losses 50%
• Split applications, 2/3 rate in March and remainder after
  planting. Reduce losses by 33%
• Use to low atrazine rate PREmixes, ie “Life” formulations
• Use POST vs PRE applications of atrazine. Lower rates
  used POST. Can reduce losses by 67%
• Reduce PRE atrazine rates to 1 pound or less followed by
  POST 0.5 lb if needed. Combined applications improve
  control.
• Use other herbicides without atrazine. Can reduce losses
  by 100%
• Vegetative filter strips reduce flow rate and reduce losses
  by 50%
• Buffer zones. Avoid applications near water sources and
  environmentally sensitive areas.

Enlist Duo Herbicide for Enlist Corn Hybrids

• Enlist Duo received full Federal Label in November of 2014. Still
  WAITING for foreign export approvals (China) of corn produced from
  Enlist hybrids.
• Contains 1.7 lbs glyphosate acid and 1.6 lbs of 2,4-D ae.
• Coex-D technology; Dimethylamine salt of glyphosate and a
  choline salt of 2,4-D.
• Use 3.5 to 4.75 pts./acre to corn no larger than V8 or 30 inches tall.
• Make 1 to 2 post applications with a minimum of 12 days between
  applications.
• May be used PRE or POST, however, total application cannot exceed
  14.25 pints of Enlist Duo / acre / use season
• DO NOT aerially apply Enlist Duo

Herbicide registered for corn and soybean, and cotton

Enlist Duo™ Herbicide

Group 4 and 9 Herbicides

Continue to wait for foreign trade approvals. China primarily.
DiFlexx Duo (Bayer Crop) for all Corn and in fallow

- Diglycolamine salt of dicamba 1.86 lb ae/gal + Laudis 0.27 lb gal + Safener - This CSA safener has soil and foliar activity
- Use 24 to 49 fl oz/A may be applied preplant, preemergence to field, silage, seed, and pop corn up through V7 stage. With drop nozzles can be applied up to corn at the V10 stage or 36 inch tall.
- At MSO or COC at 1% v/v when applied alone or tankmixed with atrazine.
- AMS or UAN is recommended in the label.
- NOTE the addition of AMS or UAN will increase the risk of dicamba volatility!

Resicore (Dow AgroSciences) for all Corn

- Acetochlor (15%) 2.8 lb/gal + mesotrione (27%) 0.30 lb/gal + clompyralid (4%) 0.19 lb ae/gal
- Rates are 2.25 to 3.0 qt/A PRE to field, silage, seed, and popcorn 28 days before planting up to emergence
- Used at 1.5 to 3.0 qts/acre to field, silage or seed corn early post up to corn 11 inches tall
- Add NIS at 0.25% v/v or COC up to 1% v/v to enhance postemergence activity. Do not use MSO or adjuvants containing nitrogen if corn has emerged. The exception is 1.5 qts of Resicore may be applied postemergence with glyphosate (on glyphosate resistant corn) or glufosinate (on Liberty Link corn) and AMS at 8.5 lb/100 gallon + NIS at 0.25% v/v.

Weed management in Irrigated corn with DiFlexx Duo, 2016, 160° Corn, TR Thompson and Schlegel. ALL POST!

Weed management in corn with PRE herbicides, Ashland Bottoms, Manhattan KS, 2016, 1605 corn, Thompson and Peterson

Pre's = May 5
**Kochiavore, Winfield Solutions**

- 2,4-D LV 1.67 ae lb, bromoxynil 1.67 lb, & Fluroxypyr 0.67 ae lb/gallon
- Broadleaf weed control including Kochia.
- Use 1 to 1.5 pints in corn Preplant, minimum of 7 days ahead of planting, or post plant preemergence to mutill planted corn, or postemergence, v3 to v5. Postemergence to grain and forage sorghum v4 to the pre-boot stage. Kochiavore will cause crop injury. Can be applied up to 2.5 pints on fallow. Maximum is 3 pints/a for growing season.
- Do not feed or graze corn for 47 days following application or harvest grain for 90 days of application. Do not harvest grain within 70 days of application or allow meat or dairy animals to consume fodder, forage, or graze for 45 days following application to sorghum. Do not allow livestock to graze fallow that has been treated with Kochiavore.

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**Crop injury 4 weeks after post applications, Tribune KS. Thompson, Schlegel, and Peterson. 1613cornTR.**

- LSD=7

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**Kochia control 4 weeks after post applications, Tribune KS. Thompson, Schlegel, and Peterson. 1613cornTR.**

- LSD=7

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**Palmer amaranth control 4 weeks after post applications, Tribune KS. Thompson, Schlegel, and Peterson. 1613cornTR.**

- LSD=7

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**Controlling kochia with PRE herbs.**

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**Kochia Management**

% control

<table>
<thead>
<tr>
<th></th>
<th>24-Mar</th>
<th>27-Apr</th>
<th>25-May</th>
<th>8-Jun</th>
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<td>Atrazine+Banvel 1 lb</td>
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<td>Clarity 1 pt</td>
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<tr>
<td>Sencor 8oz</td>
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% control

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<tr>
<td>Scoparia+atra+Banvel 2oz+1lb+12oz</td>
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<tr>
<td>Corvus+atra 4+1lb</td>
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<td>Corvus+atra+Banvel 4+1lb+12oz</td>
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Inzen Z sorghum development

- ALS resistant sorghum lines were developed at KSU
- ALS resistant shattercane from SW Kansas was crossed with grain sorghum lines (Tuinstra and Al-Khatib)
- Several ALS resistant lines were distributed by K-State to all sorghum breeding programs
- Currently Pioneer and Advanta have agreements signed with DuPont (Owner of this new technology) and will produce & market hybrid Inzen Z sorghum

Zest WDG (DuPont) for Inzen sorghum

- Nicosulfuron 75% WDG, 0.67 to 1.33 oz prod./a
- 0.25 to 0.5% v/v NIS or 1% v/v COC
- 2 qt/a UAN or 2 lb/a AMS
- Apply to sorghum 5 collar to flagleaf visible, 4 to 20 inch sorghum.
- Annual grass control varies with species and size of the grass at application.
- Start with an effective PRE applied herbicides.
  - Zest should be the second part of a two pass system.

Maximum grass species height

Zest WDG Restrictions

- Can be tankmixed with 2,4-D LV, dicamba, atrazine, Starane Ultra, and Ally XP, 1/20 oz.
- DO NOT USE COC when tankmixing 2,4-D or dicamba.
- DO NOT tankmix with Huskie herbicide as significant grass antagonism may result.
- Rotation back to sorghum is 18 months
  - NOT CONTINUOUS SORGHUM!
**Zest WDG Rotation Restrictions**

The following rotational intervals should be observed when using **Zest WDG** at rates of 1.3 and 2.6 lb ai/acre. **Zest WDG Rotation Restrictions: 1 Year**

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<tr>
<th>Herbicide</th>
<th>Annual Rotations</th>
<th>Manhattan, KS</th>
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<td>Nicosulfuron (POST)</td>
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**Vol. wheat, foxtail and crabgrass control with single and two pass herbicide programs. Vanloenen et al., 2015.**

**Palmer amaranth control with single and two pass herbicide programs. Stahlman et al. and Currie et al., 2016.**

**Yield potential of test cross hybrids resistant to ALS inhibitor herbicides as compared to commercial checks, 2015. Tesfaye Tesso and his group, Agronomy Department, K-State.**

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<tr>
<th>Entry</th>
<th>% Control</th>
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Statement from the Huskie label

• Unacceptable crop response may occur if Huskie Herbicide is applied to acreage that has been previously treated with an application of any product containing mesotrione (products such as Lumax or Lexar).


Effect of Huskie on sorghum previously treated with PRE applied mesotrione products, SWREC Tribune. Menzer, Thompson, Schlegel and Peterson 2016.


Questions?

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SEARCH: "2017 Chemical Weed control for Field Crops" or "KSU SRP1132"

Briefly discuss features that will help you choose your herbicide program.

Over 95% of questions asked, can be answered from this guide.

However, this isn’t a substitute for the herbicide label.