Dicamba Update
2019
OISC Annual Drift Complaints

# Complaints

YEAR


35 54 95 62 69 64 68 108 100 85 90 287 289
What happened in 2017 & 2018?

• 2017 total off-target movement (drift) complaints... 287
• 2017 dicamba drift complaints... 132
• 2017 percentage dicamba of total drift... 46%

• 2018 total drift complaints... 289
• 2018 dicamba drift complaints... 146
• 2018 percentage dicamba of total drift... 51%
## 2013-2018* Drift & Dicamba Data for Indiana

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Drift</th>
<th>Dicamba</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>108</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>2014</td>
<td>100</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>2015</td>
<td>85</td>
<td>8</td>
<td>9%</td>
</tr>
<tr>
<td>2016</td>
<td>90</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>2017</td>
<td>287</td>
<td>132</td>
<td>46%</td>
</tr>
<tr>
<td>2018</td>
<td>289</td>
<td>146</td>
<td>51%</td>
</tr>
</tbody>
</table>

*2018 data is only partial at this point
2018 Label Changes Included

- RUP classification
- Mandatory dicamba-specific training for all users
- Mandatory detailed recordkeeping requirements, including weather
- Prohibit application near downwind sensitive crops
- Clarified mandatory buffer requirements
- Reduced max. wind speed from 15 to 10 mph
- Beefed up tank cleaning requirements
2018 OISC Dicamba Investigations

• Evidence of off-target movement... 100%

• No documented violation... 15%

• Documented drift violation only... 0%

• Documented drift management violation only... 71%

• Documented drift violation + drift management violation... 14%
### Comparison of Investigations

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applicator License</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>23%</td>
<td>35%</td>
</tr>
<tr>
<td>Private</td>
<td>62%</td>
<td>63%</td>
</tr>
<tr>
<td>No license</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Target Crop or Site</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td>92%</td>
<td>82%</td>
</tr>
<tr>
<td>Corn</td>
<td>6%</td>
<td>17%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Product Applied</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engenia</td>
<td>45%</td>
<td>56%</td>
</tr>
<tr>
<td>FeXapan</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Xtendimax</td>
<td>40%</td>
<td>32%</td>
</tr>
<tr>
<td>Other dicamba</td>
<td>8%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Route of Off-Target Pesticide Movement

• Drift = misuse, if it can be proved

• Application during inversion = misuse, if it can be proved

• Volatilization = not misuse, if it can be proved
# 2017 & 2018 Dicamba Complaint Violations

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total violative cases</td>
<td>93%</td>
<td>65% (?)</td>
</tr>
<tr>
<td>Off-target movement from drift</td>
<td>23%</td>
<td>13%</td>
</tr>
<tr>
<td>Wind blowing toward adjacent sensitive crops</td>
<td>46%</td>
<td>59%</td>
</tr>
<tr>
<td>Wind (or gusts) greater than 10 mph</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Wind less than 3 mph</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>All drift management</td>
<td>?</td>
<td>56%</td>
</tr>
</tbody>
</table>
2019 Dicamba Label Changes

• Everyone handling dicamba MUST be certified
  – Can no longer operate under the supervision of a certified applicator

• Annual dicamba training is required
  – Will NOT be provided by Purdue Extension or OISC
  – BASF, Bayer, and Corteva will provide trainings

• Applications up to R1 (flowering) or 45 days after planting

• Application hours from 1 hour after sunrise until 2 hours before sunset
2019 Dicamba Label Changes

• Managed areas can be included in downwind buffers
  – Mowed roadsides, rights-of-way, managed pastures, etc...

• Application records must be generated within 72 hours of application

• Do not allow tank mix to exceed pH 5.0

• Omni-directional 57’ buffers for endangered species protection
  – Posey & Harrison Counties only
2019 Dicamba Herbicide Updates

Dicamba containing herbicides, including formulations such as XtendMax with VaporGrip Technology (EPA Reg. No. 524-617), Engenia Herbicide (EPA Reg. No. 7989-345), and FeXapan Herbicide Plus VaporGrip Technology (EPA Reg. No. 352-913) have been in the news recently based on off-target movement (drift) complaints.

This website is intended to provide interested parties with regulatory and other related information associated with dicamba herbicides in Indiana.

1. Dicamba Frequently Asked Questions (11-26-18) (pdf, 196kb)
2. Counties with Endangered Species (11-26-18) (pdf, 99kb)
3. Dicamba RUP Dealer Notice (11-20-17) (pdf, 86kb)
4. Registrants of Dicamba-Containing Agricultural Herbicide Products Notice (12-20-17) (pdf, 39kb)
5. List of state RUP dicamba herbicides (03-27-18) (pdf, 80kb)
6. Final Rule - Restricted Use Classification of Dicamba Containing Herbicides
7. Options for Dealing with a Pesticide drift Incident (PPP-110) (pdf, 668kb)
8. How to File a Fertilizer or Pesticide Complaint (pdf, 30kb)
9. Filing a Pesticide or Fertilizer/Manure Complaint (pdf, 86kb)
10. Understanding Soybean Response to Dicamba (BASF) (pdf, 1,333kb)
12. Removing Herbicide Residues from Agricultural Application Equipment (How Proper Cleaning Helps Prevent Crop Damage and Improves Performance)
13. Response of Roundup Ready Soybean Yield to Dicamba Exposure (source: Purdue Extension)
14. Response of GlycineMax Tolerant Soybean Yield Components to Dicamba Exposure (source: ResearchGate)
15. DriftWatch Sensitive Crop/Site Registry (source: DriftWatch)
2019 OISC Compliance Strategy

• Increase monitoring & investigation of incidents involving tomatoes, vegetables, grapes, melons, gardens, ornamentals, flowers, trees, & organic crops.

• For complaints of exposure to soybeans, on-site confirmation of dicamba exposure symptomology, but no attempt to document cause.

• For insistent soybean exposure complainants, request a significant amount of upfront information & detail before initiating an investigation.

• Utilize certification suspension & revocation for egregious violators. *

• Work with stakeholders to identify measurement(s) of success for safe & effective application in 2019 & beyond.
2019 OISC Compliance Strategy

If investigation found that mandatory training not attended, Enforcement action = Revocation of certification for 5 YEARS

Applicators must do basics.

For 5 years cannot apply any Restricted Use Pesticide (ex. atrazine, gramoxone)

Retest at end of 5 years
# Application Quick Guide

**ENGения®, XTENDIMAX®, AND FEXAPAN®**

**APPLICATION QUICK GUIDE**

Always read and follow all product labels.

## Certification & Training

Everyone who uses (apply, mix/ load, purchase, dispose) these products must be fully certified & attend mandatory dicamba training annually.

## Record Keeping

- You must generate application records within 72 hours & keep them for 2 years.
- See attached "2019 Required Records" for details on each application.

## Sensitive Sites, Crops, & Residential Areas

Prior to each application, you must:

- Scout neighboring/adjacent crops, sites, & residential areas.

## Nozzles

Only use the nozzles specified on the products' websites.

## Tank Mix Partners

Only tank mix with products listed on the products' websites — including adjuvants.

## Required PPE

Long-sleeved shirt, pants, shoes, socks, and waterproof gloves.

- Never exceed 15 mph ground speed.
- 5 mph recommended in downwind field edges.

## Ground Speed

Set spray booms above the canopy 24 inches or less.

## Boom Height

Do not apply when wind is blowing toward neighboring/adjacent sensitive crops (within 1/2 mile) or non-GE soybeans or sensitive residential plants (within 1/4 mile).

**Stop** application immediately if wind shifts toward sensitive crops or sensitive residential plants during application.

## Wind Direction

Do not apply when wind is blowing toward neighboring/adjacent sensitive crops (within 1/2 mile) or non-GE soybeans or sensitive residential plants (within 1/4 mile).

**Stop** application immediately if wind shifts toward sensitive crops or sensitive residential plants during application.

## Water Setbacks

Do not mix these products within 50 feet of wells, sinkholes, streams, and rivers (some exception for impervious pads).

## Application Timing

Apply only between one hour after sunrise & two hours before sunset. Do not apply after R1 growth stage, or later than 45 days after planting.

## Temperature

Do not apply if a temperature inversion exists at field level.

## Wind Speed

Apply only when wind speeds are 3-10 mph, including gusts.

## Spray Volumes

Minimum spray solution 15 gallons per acre.

## Buffers

Always maintain a 110’ or 220’ downwind in-field buffer except when next to label-listed non-sensitive crops & areas. Maintain a 57’ buffer in every direction if application in a county with protected endangered species (Harrison & Posey counties).

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Reference in this publication to any specific commercial product, process, or service, or the use of any trade, firm, or corporation name, is for general informational purposes only, and does not constitute an endorsement, recommendation, or certification of any kind by Purdue Extension or Office of Indiana State Chemist. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer.

12/1/2018: An equal access/equal opportunity university.

[pu.edu/extension]
# 2019 Required Records for Each Application of Engenia, Xtendimax, FeXapan

**Personal Information**
- Name & license number of certified applicator
- Dicamba training (mm/dd/yy, city)

**Pre-application**
- Date(s) (mm/dd/yy)
- Checked areas within 1/2 mile for sensitive crops, sites, residences
- Checked DriftWatch for nearby sensitive sites/crops
- Checked registrant website for tank-mix partners
- Checked [www.epa.gov/espp](http://www.epa.gov/espp) for endangered species restrictions
- Dicamba purchase (attach the receipt)
- Sprayer cleaned of all traces of AMS

**Application**
- Date (mm/dd/yy)
- Target crop
- Field location/description
- Field size
- Pre- or post-emergent (circle one)
- Date crop planted (mm/dd/yy)
- List all pesticide trade names applied (include EPA registration numbers)
- Nozzle (make/model, pressure)
- List all adjuvant trade names

**Downwind buffer calculation (circle one)**
- 100% my field
- 100% adjacent property
- In my field + ___ ft. in adjacent property

**Application Weather Conditions**
- Start of Application
- End of Application
- Time
- Air temperature at boom height
- Wind speed at boom height
- Wind direction (blowing from)
- Method or equipment used to measure weather

**Post-application**
- Date sprayer cleaned of all dicamba residue (mm/dd/yy)
- Sprayer cleanout method
- Photo/copy of front page of product label & 24(c)/SLN label (attach)

**Websites**
- BASF Engenia® Herbicide Tank Mix: [www.engeniatankmix.com](http://www.engeniatankmix.com)
- Bayer/Monsanto Xtendimax® Application Requirements: [www.xtendimaxapplicationrequirements.com](http://www.xtendimaxapplicationrequirements.com)
- Corteva/DuPont FeXapan® Application Requirements: [www.fexapanapplicationrequirements.dupont.com](http://www.fexapanapplicationrequirements.dupont.com)
- DriftWatch: [driftwatch.org](http://driftwatch.org)
- OISC dicamba update (downloadable PDF of Record Sheet, 24(c)/SLN Label & FAQ): [www.oisc.purdue.edu/pesticide/dicamba.html](http://www.oisc.purdue.edu/pesticide/dicamba.html)