Engenia®
Herbicide

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Technical Information Bulletin

Best Management Practices for Effective Weed Control with Engenia® Herbicide in Dicamba Tolerant Soybean

Key Strategies

- Identify the target weeds
- Including multiple effective sites of action (SOA) is important for reducing the weed seedbank and minimizing the risk of resistance development
- Use an effective burndown or tillage to manage emerged weeds prior to planting
- Use a good residual PRE herbicide program
  - Reduces weed pressure
  - Allows more time to select the proper spray day for POST application
  - Preserves yield
- Spray your POST herbicide early
  - 4" max weed height
  - Target application at 3 to 5 weeks after planting
  - Add a residual herbicide to the POST
- Prevent weed seed movement in-field, field-to-field and from field borders with equipment hygiene and management practices

Best Practices to Optimize Efficacy

- Required minimum spray volume: 15 GPA
  - Better coverage for tough weeds
  - Match nozzle to GPA, pressure, and sprayer speed as specified by the label
- Use approved VRA at required rate
  - List of approved VRAs and their required rates can be found at *www.engeniaherbicide.com/vra*
- Use oil-emulsion DRA at required rate of 0.3% v/v of the final spray tank volume
- Recommended use of adjuvants such as a nonionic surfactant (NIS) to maximize dicamba update
- Plan a PRE or Early-POST application of Engenia herbicide

Recommended Sequential Weed Control Program for XtendFlex® Soybeans

1st Pass (PRE to Very Early POST)	2nd Pass (Early to Mid POST)
Engenia herbicide	**Liberty® ULTRA herbicide**
+ Zidua® herbicide OR Outlook® herbicide	**+ Zidua herbicide OR Outlook herbicide**
+ Required VRA and DRA	+ Required VRA and DRA
+/– Glyphosate	+/– Glyphosate

Herbicide Resistance Management for Engenia® Herbicide

For resistance management, Engenia herbicide is a Group 4, synthetic auxin herbicide. Any weed population may contain plants naturally resistant to Group 4 herbicides. Resistant individuals may dominate the weed population if these herbicides are used repeatedly in the same fields. Appropriate resistant-management strategies should be followed.

To delay herbicide resistance consider:

- Avoiding the consecutive use of herbicides that have a similar target-site-of-action on the same weed species.
- Using tank mixes or premixes with herbicides from different target-site-of-action groups as long as the involved products are all registered for the same use, have different sites of action, and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Basing herbicide use on a comprehensive IPM (Integrated Pest Management) program including cultural and mechanical methods.
- Monitoring treated weed populations for loss of field efficacy, and control of escapes with effective alternative herbicides or mechanical methods.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program needs to consider all of the weeds present.
- Scout fields prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective.
- Scout fields after application to verify the treatment was effective.
- Suspected herbicide-resistant weeds may be identified by these indicators:
  1. Failure to control a weed species normally controlled by the herbicide at the applied dose, especially if control is achieved on adjacent weeds;
  2. A spreading patch of non-controlled plants of a particular weed species; and
  3. Surviving plants mixed with controlled individuals of the same species.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA and/or use nonchemical methods to remove escapes, as practical, with the goal of preventing further seed production.
- Report any incidence of non-performance of this product against a particular weed species to your BASF representative.
- Contacting your local extension specialist, certified crop advisors, and/or manufacturer for herbicide resistance management and/or integrated weed management directions for specific crops and resistant weed biotypes.

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