



Below is the manufacturers' contact information:

Monsanto (XtendiMax) – 1-844-RRXTEND

BASF (Engenia) – www.Non-Performance.BASF.US

DuPont (FeXapan) – 1-888-6-DUPONT

Dicamba Herbicide: New Use on Dicamba-tolerant Soybeans

The new use of certain dicamba products on dicamba-tolerant soybeans (DT soybeans) has specific requirements on application rate, application timing, tank-mix products, spray drift management, weather conditions, spray equipment cleanout procedures, and protection of sensitive areas. This Minnesota Department of Agriculture (MDA) factsheet provides a comparison of some of the label requirements for the new dicamba products.

Introduction: Dicamba is a selective and systemic herbicide used to control preemergence and postemergence weeds in corn and a variety of other food and feed crops, and in residential areas. Dicamba, Group 4 herbicide, mimics plant growth hormone auxin, and it kills weeds by causing abnormal growth. In 2016, the United States of Environmental Protection Agency (EPA) approved the postemergence use of certain new dicamba products on DT soybeans. Previously, dicamba was registered for only preplant and pre-harvest applications to non-DT soybeans. The new products are labeled for preplant, at-planting, preemergence, and postemergence broadleaf weed control in DT soybeans.

New Use of Dicamba in Minnesota: Currently, only three products, XtendiMax™ (EPA Reg. No. 524-617; Monsanto; DGA salt) with VaporGrip™ Technology, Engenia™ (EPA Reg. No. 7969-345; BASF; BAPMA salt), and FeXapan™ Plus VaporGrip™ Technology (EPA Reg. No. 352-913; DuPont; DGA salt), are registered in Minnesota and labeled for postemergence applications on DT soybeans to suppress broadleaf weeds such as waterhemp (*Amaranthus* spp.), giant ragweed (*Ambrosia trifida*), common ragweed (*Ambrosia artemisiifolia*), common lambsquarters (*Chenopodium album*), and marsetail (*Conyza canadensis*). Regarding use on DT soybeans, the EPA registration of XtendiMax and FeXapan will expire on November 9th, 2018 whereas Engenia registration will expire on December 20th, 2018. **The Minnesota registration will expire on December 31st, 2017. The MDA will be closely reviewing the information collected during 2017 growing season to make decision on dicamba registration for the year of 2018.**

The new use on DT soybeans is on a supplemental label, not the label on the container. **For these dicamba products, users are required to have both the container label and the supplemental label in their possession at the time of application and follow the directions on both the labels.**

Always follow label directions. Labels inform users where and how to use pesticides safely and effectively. It is a violation of Minnesota state law to use a pesticide without following the label directions.

Misusing dicamba products may cause unintended impacts such as serious damage to non-DT soybeans, other crops, and non-crop plants.

- When treating DT soybeans with dicamba, only use a dicamba product that is labeled for use on DT soybeans.
- Know when the labels prohibit using these products.
- Users of these products are highly encouraged to visit FieldWatch™ (www.fieldwatch.com) website to learn about the DriftWatch™ program which assists in locating the sensitive crops (vegetables, ornamentals, non-DT soybeans, etc.) in an area.

Dicamba Drift Complaints: The most typical visual symptoms of dicamba injury on sensitive vegetation are epinasty, cupping, puckering, or curved and twisted stems and leaves. The MDA Pesticide and Fertilizer Management Division conducts routine inspections and performs investigations regarding pesticide use complaints. Visit <http://www.mda.state.mn.us/chemicals/pesticides/complaints.aspx> for more information on pesticide use complaints and MDA's enforcement actions.

Users are highly encouraged to visit the website for each product to participate either in online or in person trainings on the use of new dicamba products.

The following are some dicamba label highlights regarding its new use on DT soybeans:

- Dicamba is a highly volatile chemical that can damage non-target crops through drift and volatilization. New dicamba products are considered less volatile than previously registered dicamba products. However, new products still require active drift management.
- Do not apply less than the minimum or more than the maximum application rate.
- **Aerial application of these products is prohibited.**
- Do not apply dicamba products if rain is expected in the next 24 hr (XtendiMax and FeXapan) or within 4 hr (Engenia).
- Do not apply these products in the presence of temperature inversion.
- Avoid tank mixing of XtendiMax/FeXapan/Engenia with products containing ammonium salts like ammonium sulfate (AMS), UAN.
- Carefully read and follow the procedure given on the container or supplemental label for cleaning spray equipment used for application of these products.
- To delay the evolution of herbicide resistance in weeds to these new dicamba products, the users should follow herbicide resistance management strategies mentioned on the product label.

- **Buffer Requirements:**

- ✓ The labels of these products require a downwind buffer of certain distances (see table below). The following areas may be included in the buffer distance calculation when adjacent to field edges:
 1. Roads, paved or gravel surfaces,
 2. Planted agricultural fields containing: corn, DT soybeans, sorghum, proso millet, and small grains. If the applicator intends to include such crops as DT soybeans in the buffer distance calculation, the applicator must confirm the crops are in fact DT and not conventional soybeans.
 3. Agricultural fields that have been prepared for planting.
 4. Areas covered by the footprint of a building, shade house, silo, feed crib, or other man made structure with walls or roof.
- ✓ Ditches next to agriculture field do not count toward the buffer distance calculation (see Scenarios 1 and 2).
- ✓ Applicators may not be able to treat the entire DT soybean field depending on width and location of areas (for example, ditch, non-DT soybeans, etc.) that cannot be included in buffer from the field edge (see Scenarios 1 and 2).

Scenario 1: Road and ditch are not a part of required buffer.

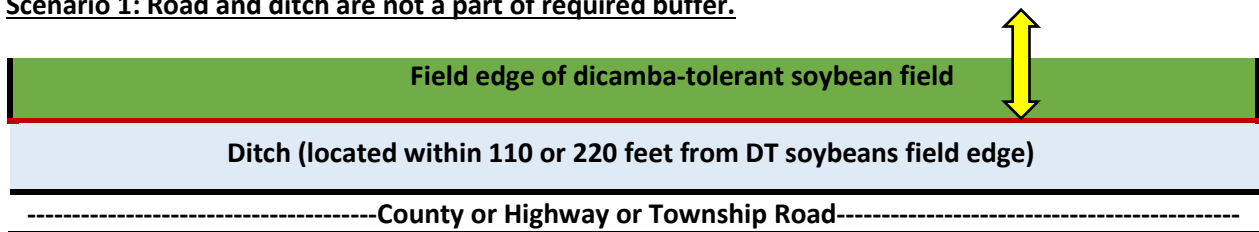


Figure 1 illustrates if a ditch is located within 110 or 220 feet from the edge of dicamba-tolerant soybeans field, applicators maintain required buffer in the downwind direction from the last treated soybean row to the field edge (red line) as depicted by yellow arrow.

Scenario 2: Road is a part of required buffer but not the ditch.

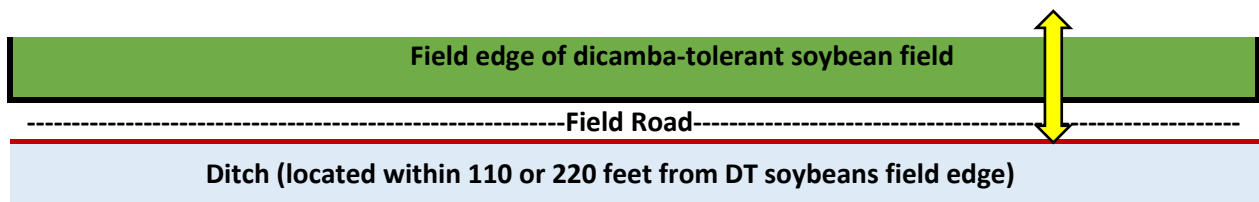


Figure 2 illustrates that road can be included in required buffer if it falls within 110 or 220 feet distance from the field edge. Buffer distance is measured in the downwind direction from the last treated soybean row to the far edge of the field road (red line) as depicted by yellow arrow.

The following table illustrates selected label requirements of new dicamba products on DT soybeans.

Dicamba Checklist	XtendiMax™	FeXapan™	Engenia™
Preemergence/Preplant/Postemergence Use Instructions			
Minimum single application rate (fl oz/A)	22	22	12.8
Maximum Preplant/Preemergence single application rate (fl oz/A)	44	44	12.8
Total Preplant/Preemergence (fl oz/A)	44	44	25.6
Maximum Postemergence single application rate (fl oz/A)	22	22	12.8
Total Postemergence (fl oz/A)	44	44	25.6
Total combined application rates/year or season (fl oz/A)	88	88	51.2
Application timing	Emergence (cracking) through R1 growth stage		
Weed size (inches)	<4 height	<4 height	<4 height or <2 (rosette)
Allowed tank-mix products/Allowed spray nozzles (check the label first)	www.xtendimaxapplicationrequirements.com www.engeniatankmix.com www.fexapanapplicationrequirements.dupont.com		
Spray Drift Management			
Spray nozzle (check the label first)	Allowed spray nozzles: http://www.xtendimaxapplicationrequirements.com/Pages/nozzles.aspx www.engeniatankmix.com www.fexapanapplicationrequirements.dupont.com		
Sprayer ground speed (mph)	≤15		
Boom height (inches)	≤24		
Spray volume (GPA)	≥10		
Spray pressure (psi)	≤63	≤63	Manufacturer's recommended
Wind speed (mph)	<ul style="list-style-type: none"> • <3 (do not apply XtendiMax & FeXapan; apply Engenia only in the absence of temperature inversion) • 3-10 (optimum application conditions) • >10-15 (do not spray if wind is blowing in the direction of neighbor sensitive crops) • >15 (do not spray) 		
Protection of Sensitive Areas			
Required downwind buffer distance (feet)	110 (22 fl oz/A) 220 (44 fl oz/A)	110 (22 fl oz/A) 220 (44 fl oz/A)	110 (12.8 or 25.6 fl oz/A)