

Understanding Soybean Response to Dicamba

Grow Smart™
with BASF

Mode of Action (How Weeds are Controlled)

Dicamba mimics a natural plant hormone called auxin that regulates how plants grow and develop. To be an effective herbicide, it is applied at rates greater than a thousand times more than normal auxin levels found in plants. This results in rapid, uncontrolled growth leading to plant death and weed control.

Symptomology at Low Rates

Since auxin is present in plants at very low levels, dicamba can trigger plant growth responses in susceptible broadleaf plants at dosages less than 1/100 of the recommended use rate. These low rates will not impact leaves already developed; symptoms will only show up on new growth. The degree of response is dependent on the rate of exposure. Therefore, like any herbicide, it is important to keep applications from moving off-target.

Using labeled application practices is key to ensure on-target application success of Engenia™ Herbicide (refer to the Engenia Herbicide label).



Terminal growth continues with new leaves puckered



Terminal growth inhibited; new leaves puckered when growth resumes

Best Management Practices

 **BASF**
We create chemistry

Soybean Symptomology and Potential Yield Response

Non-dicamba tolerant soybeans are very sensitive to dicamba. While weeds sprayed with dicamba at full labeled rates often show symptoms within hours, soybeans exposed to rates associated with drift may not show symptoms until 1 to 2 weeks after exposure. This is because older, mature growth is not affected by extremely low rates; only new growth shows symptoms.

Puckered or cupped leaves is the most common symptom associated with drift rates of dicamba (Image 1). Terminal growth inhibition combined with puckered leaves is a less common symptom and usually a result of higher rates of exposure not associated with drift (Image 2).

Timing of dicamba exposure and level of symptoms are critical in determining potential yield response. Research indicates that yield potential is not impacted at any stage of soybean development if the terminal growth is not inhibited (Figure 1). When terminal growth is inhibited, yield potential may be affected, particularly when soybeans are exposed at later stages of growth. However, complete recovery of the soybeans is likely when exposure occurs at early vegetative stages under good growing conditions.

Research indicates that soybean yield potential is not impacted if the terminal growth is not inhibited.

To learn more about crop protection products from BASF, visit www.agproducts.basf.us

Soybean Response and Symptomology to Dicamba



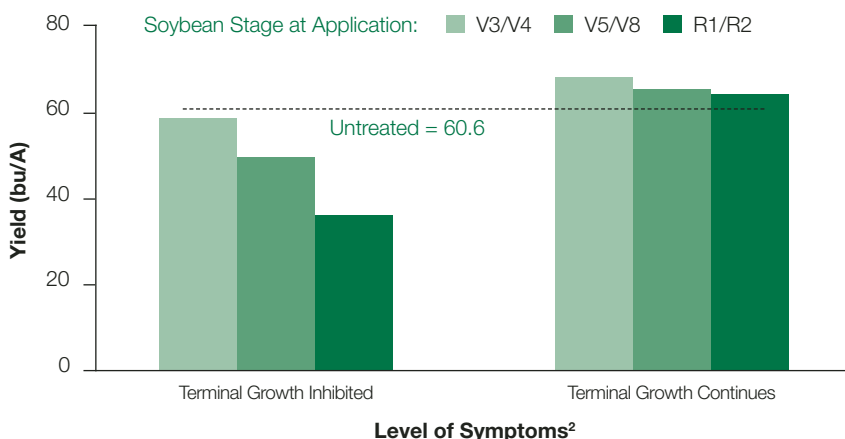
Image 1. Terminal growth continues with new puckered leaves visible



Image 2. Terminal growth inhibited, puckered leaves slow to emerge

2014 BASF field trial - Fitchburg, WI - 2 weeks after treatment.

Figure 1. Dicamba Response in Soybean
Influence on yield by timing and level of symptoms



¹ 2015 BASF sponsored trial at Purdue University. Non-dicamba tolerant soybeans planted on May 14, 2015.

² Rate (1X = 0.5 lbs ae/A): terminal growth inhibited (1/100X) and terminal growth continues (1/1000X)