

Logan Ag News

May 2016

“Stand Tall” For Dicamba Herbicide In Xtend Beans

The US EPA has opened a 30-day public comment period regarding the in-crop use of dicamba herbicide on Roundup Ready 2 Xtend™ soybeans. This action does not mean that growers who plant Xtend soybeans in 2016 will be authorized to use dicamba herbicide post-emergence on these beans, but it does represent significant progress toward ultimate approval of herbicides.

Comments from farmers and other stakeholders during the public comment period will make a positive impact with the Environmental Protection Agency. Visit RoundupReadyPLUS.com/supportdicamba for assistance in writing and submitting a comment on this important weed management tool.

Dicamba formulations for use on Xtend soybeans have been submitted for EPA approval by Monsanto and BASF. Monsanto's product is similar to Clarity® herbicide. Pending registration of the dicamba-only herbicide, Monsanto plans to immediately apply for approval of XtendiMax™ - a combination of diglycolamine (DGA) salt dicamba plus VaporGrip™ that helps reduce herbicide volatility. Monsanto also hopes to register a premix of XtendiMax and glyphosate named Roundup® Xtend.

BASF attempts to register Engenia™, a dicamba-only

continued on page 2

LOCATIONS

- * Griggsville, IL 217-833-2375; 1-800-LOGAN AG
- * Pittsburg, OH 937-692-5181 (JACK BAKER)
- * Paris, MO 573-406-8579 (DEAN) 217-491-1787 (HEIDI)

www.LOGANAG.com



Calculation of Growing Degree Units (GDU)

Growing Degree Units (GDU), also known as Growing Degree Days (GDD), are a measurement of the cumulative amount of heat to which a plant has been exposed. In corn, we use GDU to predict emergence, various growth stages, and maturity. Calculation of GDU compares the average daily temperature against a base temperature. In the case of corn, the base temperature is 50 F (Tbase) as that is the point at which plants begin to grow and develop. Growth continues until approximately 86 F, at which time growth slows and the plant begins to shut down (think of rolling corn leaves in hot weather as a defense mechanism).

To find the average daily temperature, add the day's high (Tmax) and low (Tmin) temperatures and divide by 2. If the day's maximum temperature (Tmax) exceeds 86°, use 86 as the high. If the day's minimum temperature (Tmin) is below 50°, use 50 as the low. GDU is calculated as follows:

$$\text{GDU} = (\text{Tmax} + \text{Tmin}) \div 2 - \text{Tbase}$$

EXAMPLES:

- High temperature (Tmax) = 78; Low Temperature (Tmin) = 56. **GDU = (78 + 56) ÷ 2 - 50 = 17**
- High temperature (Tmax) = 75; Low Temperature (Tmin) = 47. **GDU = (75 + 50) ÷ 2 - 50 = 12.5**
- High temperature (Tmax) = 89; Low Temperature (Tmin) = 65. **GDU = (86 + 65) ÷ 2 - 50 = 25.5**

GDU accumulate after planting (add daily GDU) to predict various growth stages and maturity of corn. Researchers Neild and Newman published GDU requirements for a 2700 GDU hybrid (approximately 109 day maturity) in the *National Corn Handbook*. Portions of the chart they created are shown below.

Development Stage	GDU
2 leaves fully emerged	200
4 leaves fully emerged	345
6 leaves fully emerged (growing point above soil)	476
8 leaves fully emerged (tassel development begins)	610
16 leaves fully emerged (tassel tip emerging)	1135
Silks emerging/pollen shedding (plant at full height)	1400
Kernels dented	2450
Physiological maturity	2700

continued on page 3

continued from page 1

herbicide. Engenia is touted to be more effective at binding dicamba herbicide to the plant and soil, as well as reducing volatility.

If/when approved (the expectation is late summer/early fall of 2016), the Xtend weed control system will aid

farmers in the control of glyphosate resistant weeds such as **waterhemp** (right) and **Palmer amaranth** (lower right).

Monsanto, Pioneer, and nearly 100 licensees sold Xtend soybeans for 2016 planting. Sales have been targeted on more than 3 million acres in the U.S. At present, it is a violation of federal law to make in-crop application of any dicamba herbicide to Xtend soybeans. Growers are subject to substantial fines for off label use of herbicides. Many grain elevators have notified customers they will not accept Roundup Ready 2 Xtend soybeans until the trait package is approved by the European Union.

Xtend, Xtendimax, and VaporGrip are trademarks of Monsanto. Clarity and Engenia are trademarks of BASF.



Determining Stand Population In Corn And Soybeans

Three common means exist to take stand counts in corn and soybeans. These include the *1/1000th acre method*, *the wheel method*, and *the hoop method*. When determining plant stand, include only plants which appear healthy with a good chance of survival. Plant population is a critical factor of final corn yield, while soybeans can compensate for reduced stand.

The most popular method used to determine stand in corn or rowed beans is the **1/1000th acre method**. Count the number of plants in 1/1000th acre based on row width (see the chart below). Multiply the number of plants counted by 1000 to determine plants per acre. Repeat the process in several areas of the field for accuracy.

1/1000th Acre Method

Row Width (inches)	Row Length 1/1000 th Acre
15"	34' 10"
20"	26' 2"
30"	17' 5"

Lesser known and used is the **wheel method**, which involves utilizing an appropriate factor based on row width. Start by counting 150 consecutive plants in a row. Measure the distance in feet from plant #1 to plant #150. The distance measured for the 150 plants is then divided into a factor to determine plants per acre as shown in the chart in the next column. As an example, if you walk 80 feet to count 150 plants in 30" rows, the population is 32,670 ($2,613,600 \div 80 = 32,670$). Repeat the process

in several areas of the field for accuracy.

Wheel Method

Row Width (inches)	Factor
20"	3,920,400
30"	2,613,600

The most popular and easiest way to determine population in drilled beans is the **hoop method**. Kids have a great time using the hoop in the field, and it's a good way to teach the next generation some interesting facts about farming. Many sizes of hoops (hula hoops) are available, but the easiest size to use in determining populations is a hoop measuring 28.25" diameter. This size hoop equates to 1/10,000th acre. You can easily make a hoop of this size by connecting the ends of a piece of ammonia hose or garden hose that is 88.75" long to form a circle. Randomly toss the hoop in the field, and count the beans inside the hoop. Simply multiply the number of beans counted by 10,000 to determine the population per acre. For example, counting 125 beans inside a 28.25" diameter hoop equates to 125,000 population. Repeat the process in several areas of the field for accuracy.

Most Troublesome Weed

Not surprisingly, a survey among weed scientists and extension agents conducted by the Weed Science Society of America ranks **Palmer amaranth** the most troublesome weed in the U.S. Palmer amaranth, capable of producing up to 1,000,000 seeds from a single plant, invades much of the cropland in the southern regions of the U.S., and is making its march northward. Various varieties of morningglory, lambsquarters, waterhemp, and marehail round out the top five most troublesome weed list.

Soybean Maturity And Other Considerations For Later Planting

Soybean planting began early in western Illinois, with some fields emerged prior to the last week of April. Agronomists advise early planting boosts yield, and available commercially-applied seed treatments have enabled growers to lessen worries about Sudden Death Syndrome often seen in early planted beans. As the month of May commences, many growers hope to complete soybean planting in a few days.

However, weather conditions in some areas may delay planting. At what point should changes in varietal maturity, row spacing, and planting population be considered? Research conducted by Emerson Nafziger and Jake Vossenkemper at the University of Illinois in 2014 revealed yield loss of 0.5 bushels per acre per day comparing planting dates from April 23 to June 15. Planting date studies at University of Nebraska-Lincoln suggest loss of 5/8 bushels per acre per day after May 1 planting. Our suggestion is that

continued on page 3

soybean planting be complete by mid-May if at all possible to maintain top yields.

SOYBEAN MATURITY: Planned maturities should be planted to approximately June 1. After that date, consider reducing relative maturity by 0.5 (if planting 4.0 maturity, reduce to 3.5 maturity).

ROW SPACING: Soybean fields should be full canopy by early July. If planting in 30" rows, consider reducing row width to 15" or drilled as planting date is delayed.

SEEDING RATE: To achieve full canopy more quickly, increase seeding rate by 10%. There is debate, fueled by 2008 data by DeBruin and Pederson at Iowa State, as to the yield impact of additional plants per acre. However, it is our opinion that early canopy helps maintain available soil moisture in dry conditions, as well as aid weed control. As such, seeding rate increase is likely warranted if planting is delayed past June 1.

Final Comments

Edward L. Logan, Logan Ag President

Diesel fuel prices are on the move. It's time to lock your price for the remainder of the year. Contact Jordon Schaver at the Griggsville office for current contract prices.

To help combat herbicide resistant weeds such as waterhemp and Palmer amaranth in soybeans, use layered residual herbicides along with your glyphosate or Liberty® postemergence spray trip. Many cost-effective products are available. Discuss herbicide options and required surfactants with your Logan Ag crop specialist.

Take a look at your alfalfa fields now to determine any infestation of alfalfa weevil. If treatment is required, follow pre-harvest interval restrictions before cutting. Alfalfa removes large quantities of P and K. **Illinois recommends 26 LB DAP + 83 LB potash be applied for each ton of hay harvested.** Be certain you apply fertilizer to maintain top production levels and stand longevity. Sulfur and boron is also recommended.

More Than Manure® (MTM®) Nutrient Manager is available at Logan Ag. Applied to manure in pits or lagoons, MTM reduces phosphorus lock-up and nitrogen loss from volatilization. MTM amazingly reduces solids and crusting in pits and lagoons, thereby partially eliminating some of the time spent in agitation before application. An additional benefit of this product is reduction of ammonia levels in confinement buildings for better animal and worker health environment. For more information, see your Logan Ag crop specialist or visit vlsi.com.

Several fungicides are labeled for early application in corn, and may be applied with post herbicides at the V5 growth stage. These systemic fungicides claim season-long control of anthracnose and many leaf diseases. Logan Ag plans limited testing of these products on some of our corn acres in 2016 to compare against traditional Vt aerially-applied fungicide treatments. Discuss these "one and done" fungicides with your Logan Ag crop specialist.

Early Corn Growth Stages

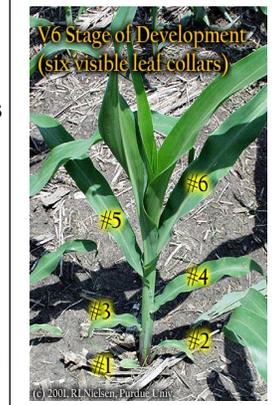
Corn is emerging in many fields across the Midwest. An accumulation of a little more than 100 GDU after planting is required for the coleoptile to spike above ground (**VE Stage**). The nodal root system begins to grow to supply water and nutrients to the plant throughout the growing season.

V1 Stage: First leaf has fully emerged with leaf collar visible. It is important to note the first leaf has a rounded leaf tip; all other leaves on the plant will have pointed tips.

V2 Stage: Two leaves are fully emerged with leaf collars. V2 occurs 7-10 days after emergence with approximately 200 GDU accumulation since planting.

V3 Stage: This stage occurs 10-20 days after emergence, with about 350 GDU accumulation since planting. The seed kernel is no longer the primary food source of the plant, and nodal roots begin to supply water and nutrients.

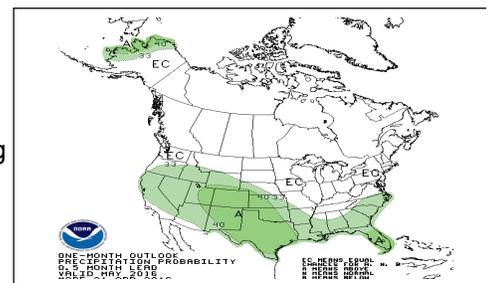
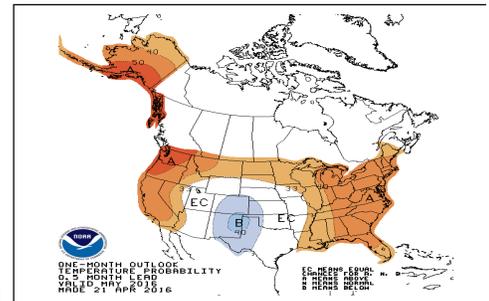
V5-V6 Stage: The growing point of the plant is at or near the surface. Approximately 475 GDU have accumulated since planting. The uppermost ear and the tassel have initiated, and the number of rows around the cob is determined. Providing any supplemental foliar micronutrients or plant growth hormones is essential at this stage to reduce stress on the plant.



May Weather Outlook

National Weather Service weather forecasts for May generally predict warmer than normal temperature and normal precipitation amounts as shown in the maps below.

The temperature forecast for the eastern region of the Cornbelt is for warmer than normal conditions. Much of Missouri and Iowa should experience normal temperatures. Nearly all regions of the Cornbelt will see normal precipitation during the month of May. Western Kansas and most of Nebraska will see increased precipitation amounts.



**GET WEEKLY MOBILE UPDATES FROM
LOGAN AG
TEXT LOGAN TO 91217**

