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THE SEED CONSULTANT

A QUARTERLY NEWSLETTER NEWS AND VIEWS FROM THE FIELD

DETERMINING THE RIGHT CORN POPULATION

Population greatly influences corn yields.

WESTERN BEAN CUTWORM

The cutworm has drastically increased its footprint.

K... SO WHAT'S YOUR NUMBER

Potassium applications in soybean fields.

REPLANT AND RETURN GUIDELINES

2019 guidelines have been released.

DETERMINING THE RIGHT CORN POPULATION

By Matt Hutcheson, CCA
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One factor that greatly influences corn yields is plant population. Determining the correct plant population may take some effort, however, it is a critical factor that every corn grower needs to get right in order to maximize yields. Recent research performed by universities and seed companies have determined that yields increase significantly as populations are increased up to a point of 34,000 seeds/acre. In general, yields begin to level off at planting rates around 36,000 seeds/acre. Recent studies have also determined that even in low yield environments, planting rates of 31,000 seeds/acre maximize yield and economic return. In very productive, 250 bu/acre yield environments, research results show higher populations (38,000+ seeds/acre) maximize yields. Breeding and advances in genetics have improved the modern corn plant's ability to yield at higher populations when compared to corn hybrids from the past.

Are your populations too low?

Although kernel weight and the number of kernels per ear are important factors in determining yield, yields are driven by the number of ears per acre. Higher numbers of smaller uniform ears will result in better yields than low numbers of large "flex" ears. Keep in mind, flex ears cannot make up for large gaps between plants that exist where populations are too low. In most situations, corn hybrid populations should be at least 32,000 plants/acre. According to Purdue corn agronomist Bob Nielsen, "Results from 67 field-scale trials

Higher numbers of smaller uniform ears will result in better yields than low numbers of large "flex" ears.

around Indiana suggest that optimum plant population for corn grown under typical yield levels and growing conditions is approximately 32,100 ppa or seeding rates of about 34,000 spa at 95% stand." Determining the correct population for each field may be a challenge, but using university recommendations of 32,000 plants per acre is a good starting point. While rates of 38,000 seeds/acre are too high for much of our sales territory, rates of 28,000 seeds/acre are too low and may be keeping producers from maximizing yields.

The challenge in determining the right population is taking into consideration several factors, including: soil type and expected yield levels, flex vs. determinant ears, hybrid stress tolerance, etc. Next are some key points to keep in mind when determining plant populations.

- Plant populations should be adjusted based on field yield levels and soil types
- Modern hybrids perform best at higher populations when compared to hybrids from the past
- Ear flex cannot make up for large gaps in plant stands at a low population
- Yield is driven by ears per acre, more ears result in higher yields
- Hybrids with below average stress tolerance and flex ears should not be planted at excessively high populations, especially in lower yield environments where plant stress will occur
- Determinant-eared hybrids will perform better at higher populations and will maintain uniform ear size

EARLY CASH DISCOUNTS

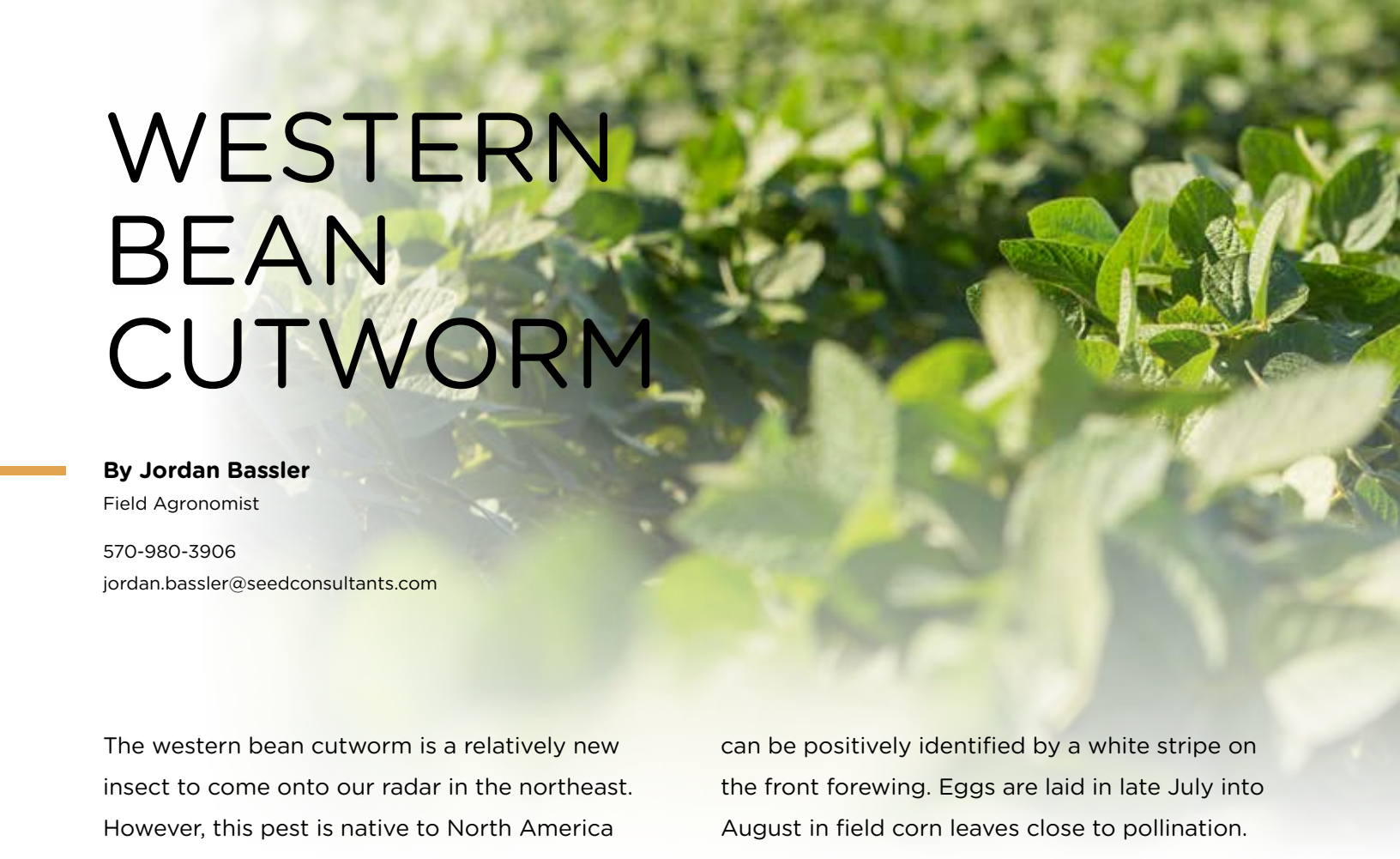
Seed Consultants offers opportunities to maximize seed cost savings through early cash discount schedule. SCI offers the following early cash discount schedule for the 2019 planting season. If you have any questions, please call the office at 800-708-2676.

CASH DISCOUNTS

March 4%

April 2%

Accounts Due Paid in Full:
August 15, 2019



WESTERN BEAN CUTWORM

By Jordan Bassler
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The western bean cutworm is a relatively new insect to come onto our radar in the northeast. However, this pest is native to North America and originated in the Great Plains region. Since 2004, the western bean cutworm has drastically increased its footprint throughout the United States. The primary areas of concern within the Seed Consultants footprint are north central Ohio and northwest Ohio. However, this pest is moving due east very fast and will soon be an issue across our whole territory. Western bean cutworm is primarily a field corn pest, but can also damage legumes other than soybeans. The following are practices that can help manage this pest in your fields.

Western Bean Cutworm Lifecycle

First, the good news. Only one generation of western bean cutworm is hatched each year. However, crop damage occurs throughout the growing season. Moth emergence occurs in early July with highest levels occurring in the middle of the month. Moths are grayish-brown in color and can be positively identified by a white stripe on the front forewing. Eggs are laid in late July into August in field corn leaves close to pollination. Once the eggs have hatched, larvae move into the protected plant parts to begin feeding on leaf tissue. Once the ear has formed, the larvae move onto ears and this is where the significant damage occurs. Several larvae per ear can lead to 15-20% yield loss. The feeding also allows fungus and other diseases into the ear which can create poor quality grain or mycotoxins in feed for livestock.

Scouting

There are several options to use when scouting for these pests. Pheromone traps are one way. Pheromone traps can be purchased through multiple retail outlets. These traps should be placed by mid-June to coincide with moth flight and should be checked weekly.

In field scouting is another viable option to finding western bean cutworm in your fields. Pay attention to the upper leaves on the plant which have not yet unfolded. Multiple areas of the field should

be checked also for consistency. Western bean cutworm infestations can be concentrated so it is recommended that twenty plants at five different locations throughout the field should be checked. Once pollen begins to shed, larvae move inside the plant making finding these insects very difficult so timing of scouting should be concentrated to before this time.

Management

Infestations can be managed several ways:

1. Hybrid or trait selection.

Companies provide several trait options that give suppression. Contact your seedsman for more info on these traits to see if they are right for you. If your farm has a history of western bean cutworm feeding, proper hybrid selection in the best place to start.

2. Insecticides.

The key to insecticide success when managing western bean cutworm is timing of application. It is best applied when eggs are hatching, but before larvae begin feeding on the ear. The product must come in to contact with larvae. The threshold for treatment is finding five larvae per plant. Anything above five warrants an insecticide treatment.

Following the above guidelines and recommendations for effective scouting and treatment will provide you with the best chance of success against fighting this invasive insect species. Contact your seedsman regarding more info on the western bean cutworm and what traits Seed Consultants has to offer to help you succeed.

Western Bean Cutworm
photo courtesy of Purdue University

SAVE THE DATE!
SCI'S 2020 CUSTOMER TRIP!

Hyatt Zilara Rose Hall
Montego Bay, Jamaica

JANUARY 18-24, 2020

Stay tuned for registration information and important deadlines in mid-summer.

K... SO WHAT'S YOUR NUMBER

By Bill McDonald, CCA
Director of Agronomic Services

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Driving around the county side, I've seen a lot of soybean fields that are expressing Potassium deficiencies. This picture is a good example of what potassium deficiency looks like in soybeans.

I realize that I may be preaching to the choir, but if we don't take care of the potash on soybeans all those little extras that retailers are trying to sell you won't make a bit of difference.

I've spoke with Spectrum Analytical, which is located in Ohio, and Winfield United, which is located in Indiana, and both Labs told me that 65 to 70 percent of the tissue samples of soybeans taken in the last two years have been low in potassium.

Nutrient	Current Data	1995 Tri-State	% decrease
Corn			
P_2O_5	0.34	0.37	5%
K_2O	0.19	0.27	26%
Soybean			
P_2O_5	0.80	0.80	—
K_2O	1.08	1.4	19%
Wheat			
P_2O_5	0.49	0.63	22%
K_2O	0.24	0.37	35%

New Tri-State Fertilizer Recommendations for removal/bushel

Soybeans should not be treated as a scavenger when it comes to obtaining its potassium needs. We've been taking off some pretty good corn yields and there may not be as much potassium left behind as the crop needs. Although a 60 bushel soybean crop only removes 65 pounds of K2O at harvest, it requires approximately 280 pounds of Potash (0-0-60) to generate those bushels. According to the current Tri-State Fertilizer Recommendations Guide, critical levels for a soil with a CEC of 5 is 175 lbs./acre, a CEC of 10 is 200 lbs./acre and a CEC of 20 is 250 lbs./acre. If you are at those levels, you should be on a Maintenance Program. The Ohio State University has done extensive work and there will be changes made to the current Tri-State Fertilizer Recommendations Guide for crop removals. The old rate of removal rate of potassium was 1.4 pounds/bushel. The new removal rate for Potassium in soybeans will be 1.08 pounds/bushel, so your formula for Potash applications made to soybeans, if you are in the Maintenance rate, will be: YG x 1.08 = rate

to be applied. So, assuming a 60 bushel yield goal the formula would be as follows: 60 x 1.08 = 64.8 lbs. Potash (0-0-60) is 60% K2O so take that 64.8 lbs. a divide that by .6 and your application rate would be 108lbs.

Potassium is very mobile in the plant and although it does not become part of the chemical structure of the plant it is critical in the function of the plant. It activates 60 enzymes that regulate plant growth. Potash increases root growth, improves drought tolerance, increases protein, builds cellulose and helps in the prevention of diseases.

Soybean fields that are low in potassium will also wilt quicker than fields with good potassium levels because potassium regulates the opening and closing of the stomates which are located on the underside of the leaves. The Stoma will open and close to exchange water and gases into the atmosphere. When potassium is in short supply they open and close at a lot slower rate and the water, that is inside the leaves cooling the plant, will escape too fast and cause plants to wilt.

The wet fall has limited our ability to get fertilizer on our fields but, as luck would have it, there have been studies that show fertilizer applied at or shortly after planting is improving soybean yields. We still have time to get our “K” levels where they need it to be and while you are at it, go ahead and put some sulfur with that Potash. You will like the results that you get.

Example of postassium deficiency in soybeans

Seed Consultants

Enlist E3™ Soybeans

Enlist E3™ Soybeans:

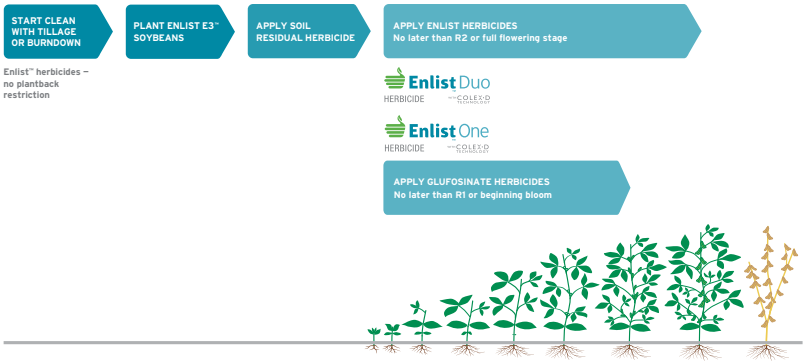
Quick Facts & Application Guidelines

Overview: The Enlist™ system in soybeans

Soybean technology	Enlist E3™ soybeans
Trait provider	Corteva Agriscience™, Agriculture Division of DowDuPont (Dow AgroSciences)
Herbicide tolerances	2,4-D choline, glyphosate, glufosinate
Labeled 2,4-D herbicides	Enlist Duo® herbicide (2,4-D choline & glyphosate blend) Enlist One™ herbicide (2,4-D choline)
Key weeds controlled	Common ragweed, giant ragweed, lambsquarters, marestail[1], morningglory, pigweed (including Palmer amaranth[1]), velvetleaf, waterhemp and more
Drift profile	Minimized potential for physical drift (up to 90% reduction compared with traditional 2,4-D, when used with labeled low-drift spray nozzles)
Volatility profile	Near-zero volatility (up to 96% reduction compared with 2,4-D ester)

[1] May require a broader management plan including timely application and use of a soil residual herbicide.

Use as part of a herbicide program approach on Enlist E3 soybean acres:



Learn more about Enlist E3 soybeans

Learn more at **www.seedconsultants.com** or by calling **1-800-708-2676**.
On the back, learn about applying Enlist herbicides.

Apply with confidence

Review before spraying to ensure successful applications. For detailed instructions, visit **Enlist.com/Apply**. Always follow all label requirements.

BEFORE SPRAYING

1. Application Window
No later than R2 or full flowering stage.

2. Tank-Mix Partners
Check EnlistTankMix.com for qualified tank-mix products.

3. Nozzles
Use only nozzles and pressure combinations listed on the product label.

4. Wind Speed, Weather
Target application at wind speeds greater than 3 mph, but less than 10 mph. Do not apply at wind speeds greater than 15 mph. Don't spray during a temperature inversion.

5. Susceptible Crops
Only spray when the wind is blowing away from susceptible crops listed on the product label, including cotton without the Enlist™ trait, tomatoes, grapes and cucurbits. Do not spray if the wind is blowing toward a susceptible crop.

6. Sensitive Area
Maintain a 30-foot downwind buffer when the wind is blowing toward a sensitive area (e.g., woods, pastures, grass ditches, lawns).

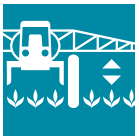
7. Sprayer Contamination
Make sure sprayer is clean from prior applications before using Enlist herbicides to avoid tank contamination.

APPLICATION

8. Spray Pressure
Verify spray pressure based on the product label and current conditions. Ground speed, product volume and nozzle selection all factor into the appropriate spray pressure.

9. Spray Rate
Enlist Duo® herbicide: 4.75 pt./A
Enlist One™ herbicide: 2 pt./A

10. Spray Volume
Apply a spray volume of water ranging from 10 to 15 gal./A for best results.



11. Boom Height
Consult the nozzle manufacturer for optimum boom height (usually 24 inches or less above crop canopy).

12. Cleanout
After applying an Enlist herbicide, make sure to clean-water flush sprayer with 10% of tank volume and triple-rinse when application is complete.

Enlist Duo™ HERBICIDE with COLEX-D TECHNOLOGY
Enlist One™ HERBICIDE with COLEX-D TECHNOLOGY

Call 855-ENLIST1 (855-365-4781) with questions about proper handling and use of these products or if you become aware of potential misuse or incidents involving these products. This reference guide is not a substitute for reading the label for Enlist One™ and Enlist Duo® herbicides. Please read before application each corresponding label, which can be accessed on Enlist.com/Herbicides. Always check your state regulations and follow all state requirements for Enlist™ herbicides.

The Enlist™ weed control system is owned and developed by Dow AgroSciences LLC. Enlist E3 soybeans were jointly developed by Dow AgroSciences and MS Technologies. Enlist Duo and Enlist One herbicides are not registered for sale or use in all states or counties. Contact your state pesticide regulatory agency to determine if a product is registered for sale or use in your area. Enlist Duo and Enlist One herbicides are the only 2,4-D products authorized for use in Enlist crops. Consult Enlist herbicide labels for weed species controlled. Always read and follow label directions.

CORTEVA™ agriscience
Agriculture Division of DowDuPont

SEED CONSULTANTS 2019 REPLANT AND RETURN GUIDELINES

All replant paperwork must be received into the office by **July 19, 2019**.

Growers must contact and allow the seedsmen to assess the stand and approve all replant.

GENERAL GUIDELINES:

-No replant credit, if seed is planted prior to insurance guidelines.

-Must replant in 2019; no credit for 2020.

-Delivered replant seed is subject to a delivery charge.

-Subject to product availability.

-Subject to change without prior notice.

Soybeans

-Grower must allow enough time for planted beans to emerge

-No replant if seed is still viable

-Lumigen FST/IST (Inoculated)...100% replant

-Lumigen Base...75% replant

-Untreated...0% replant

Corn

-All traited hybrids...100% replant

-All treated hybrids...100% replant

-Untreated hybrids...0% replant

-Replant of replant ½ of list price

-Organic Hybrids...0% replant

2019 SEED CONSULTANTS RETURN GUIDELINES

No return on Organic Hybrids

No return on Treated Soybeans

Growers may return untreated soybeans to your seedsmen, area warehouse, or dealer.

No corn returns will be accepted after July 1, 2019

No soybean returns will be accepted after July 19, 2019

If you have seed returns, contact your seedsmen, your local dealers before the return/replant deadlines.

Seed Consultants soybeans are covered under multiple patents that are still enforced. Please adhere to SCI guidelines and avoid pirated bin run issues.

BETWEEN THE ROWS

By Daniel Call, CCA
General Manager

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We are excited to share with you that we have made a lot of progress over these last few months and Enlist E3™ Soybeans will be a part of Seed Consultants' product offering for 2019.

Enlist E3™ soybeans offer one of the most advanced soybean technologies on the market. With tolerance to 2,4-D choline in Enlist™ herbicides, glyphosate and glufosinate, Enlist E3 soybeans provide a new standard for weed control and yield potential.

Why are so many growers excited for the approval of this new technology? For starters, crop safety, in-crop chemistry options, as well as safety to our neighbor's crops and sensitive plants. In addition, there are fewer application restrictions and regulations in comparison to competitive products. These are just a few of the reasons growers are excited to have this new technology at their fingertips.

Most importantly, this technology, co-developed by Dow AgroSciences and MS Tech gives American farmers the opportunity to buy American and take advantage of a more stable in-crop trait option. We are happy to bring this technology to your farms and encourage you to reach out to your local dealer, DSM or agronomist and learn more about how Enlist E3™ soybeans can work for your farm.

Enlist E3™ soybeans offer one of the most advanced soybean technologies on the market.

As always we wish you a safe and bountiful 2019 growing season!

Seed Consultants
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Washington Court House, OH 43160

Editorial Board

Don't miss a thing

The SCI free e-newsletter comes via e-mail every Monday. The newsletter is packed full of current agronomic topics. Subscribe by sending your e-mail address to matt@seedconsultants.com or by signing up on our website at www.seedconsultants.com.