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# The Seed Consultant



A BI-MONTHLY NEWSLETTER NEWS AND VIEWS FROM THE FIELD

## Determining the Right Corn Plant Population

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 rates 36,000 seeds/acre. Other university studies have 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 that 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.

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**Seed Consultants, Inc.**

**800-708-2676**

**[www.seedconsultants.com](http://www.seedconsultants.com)**

**Simply, the Best Value  
in the Seed Industry™**



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# Determining...

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## 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 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. Below 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

# Improve Yields with Uniform Emergence

Two aspects of stand establishment in corn often discussed by agronomists are emergence and seed spacing. “Picket fence” spacing in corn allows plants to grow efficiently while minimizing competition between them. More importantly to achieving high yields, however, is uniform emergence. Plants that are just one leaf collar behind (due to uneven emergence) significantly reduce yield. According to Paul Jasa, University of Nebraska Extension ag engineer, “When a plant develops ahead of its neighbor, it hurts yield dramatically. It’s going to vary somewhat from year to year, but a plant lagging behind those around it becomes a weed.” Uniform emergence is critical to maximizing yield potential. To achieve uniform emergence, several factors must be taken into consideration:

## Soil Moisture

Soil moisture at planting plays an important part in ensuring uniform emergence. Seed should be planted into enough moisture to allow for germination. Planting into soils that are too wet will hinder the development of corn plants and cause yield-robbing compaction as well as sidewall compaction of the seed furrow.

## Soil Temperature

Soil temperature in the mid 50s F or higher is required quick and uniform emergence. Soil temperatures below 50 F can result in uneven emergence of corn seedlings. Planting before soils warm up adequately could result in uneven emergence and yield loss.

## Seeding Depth

Consistent and uniform seeding depth is an important factor that can help ensure uniform emergence. In general, a seeding depth of 1.5 to 2 inches is the recommended planting depth for corn, depending on soil conditions. Planting shallower than 1.5 inches can result in poor or uneven emergence of corn seedlings. Gauge wheel settings, down pressure, field conditions, residue, and planter speed will all affect seeding depth. Make sure planters are set correctly and equipment is operated at the correct speed. Check seeding depth regularly throughout the planting process to ensure uniformity.

## Seed-to-Soil Contact

For proper germination to occur, corn seed must have adequate contact with soil. Germination will be uneven if planting results in poor seed-to-soil contact: cloddy soil after tillage, seed furrows with residue pinning, open furrows where seed is visible, etc. Proper seed-to-soil contact is crucial to insuring uniform emergence of corn seedlings. Seed should be placed firmly in the bottom of a furrow that is properly closed to provide seed-to-soil contact.

By Matt Hutcheson, CCA,  
Product Manager  
Phone: 937-414-6784  
matt@seedconsultants.com





## Levels to Watch:

- ✓ Nitrogen
- ✓ Phosphorous
- ✓ Potassium
- ✓ Magnesium
- ✓ Sulfur
- ✓ Zinc

By Bill Mullen, CCA,  
SCI Director of Agronomic Services  
Phone: 740-505-2022  
bmullen@seedconsultants.com

# Nutrient Deficiencies in Early Season Corn Growth

Many grain producers won't forget the wet, early growing conditions in 2015. For some, what corn was planted early, was in fields still wet and tacky, led to poor emergence and poor, root development. Several nutrient deficiencies were evident in early season growth of corn. Nutrient deficiencies normally appear under cool, wet growing conditions. Nutrients that are mobile like nitrogen, potassium and magnesium are evident in lower leaves and move to newer leaves as well. With most of these deficiencies, it is better to wait for the corn plant's response to sunny and dry conditions before doing anything. Nutrient deficiencies, like those below, can have a negative impact on yield if the plants don't outgrow them.

**NITROGEN DEFICIENCY:** Older leaves turn pale or yellowish green. Start at the leaf tip and move downward to the stalk, along the midrib. Moves up newer leaves, stalks appear thin and spindly, occurs mainly in wet to saturated soils or under cool soil temperatures. Nitrogen can leach out in different soil types with heavy rainfall amounts.

**PHOSPHOROUS DEFICIENCY:** From the leaf tip, this deficiency will show a dark green cast with light to dark purple on the leaf margins. Observed on the older leaves with stunted plants under severe conditions. Some hybrids will exhibit this deficiency symptom in lower than normal daytime temperatures due to the genetic package and not due to a lack of soil phosphorous. With soil P being immobile, any condition limiting root growth can cause phosphorous deficiency to show itself.

**POTASSIUM DEFICIENCY:** Yellowing starts at the edge of the older leaves moving upward to newer leaves. Older leaves will die off. If deficiency is severe, lodging problems of the stand can occur later on in the season. Any

soil issues that restrict root development early, like compaction, can cause this to happen.

**MAGNESIUM DEFICIENCY:** Will appear in lower leaves as white or yellowish streaks between veins. Occurs more in areas with low CEC soil values. Plants will grow out of this condition with better growing conditions and root expansion. Deficiency can be induced in soils with high potassium levels or in fields where high rates of potassium were spread.

**SULFUR DEFICIENCY:** Yellowing of the leaf area especially on newer leaves and not the older leaves as nitrogen deficiency will do. Interveneal chlorosis on the leaves due to lack of sulfur available to the plant, will appear. This deficiency is favored by low soil organic matter and cold, dry soils in the spring. With better growing conditions plants will outgrow this condition.

**ZINC DEFICIENCY:** This deficiency is seen as green to white stripes along the vein, starting at the base and working to the tip of newer leaves. Under severe deficiency, new leaves can be white. Normally occurs in soils low in organic matter, saturated soils, and soils with high levels of phosphorous which can tie up zinc availability.

These nutrient deficiencies described above can have an effect on corn yields if these deficiencies continue early on. Most of the time, with better growing conditions and root growth expanding, plants will grow out of these issues. It is important to walk fields after planting, especially with poor growing conditions, to see if some of these deficiencies are present. If growing conditions don't improve and plants are not recovering, then one may have to have a foliar nutrient application to correct this nutrient deficiency and lead to healthier plants with normal yield expectations

# Keep in Mind Early Disease Issues of Soybeans

Every year early season weather conditions play an important role whether or not a good soybean stand can be strong enough to offset problems or disorders. Problems that occur early in the season may contribute to yield losses at harvest time. Soil borne pathogens contribute to uneven stands and poor vigor in seedlings. With heavy rainfall and slow emergence due to compaction allows *Pythium* species to attack soybean seedlings. *Phytophthora* and *Rhizoctonia* can cause root rots and seedling blights. Take time to understand the differences of these soil borne issues affecting seedling establishment with different weather patterns.

## **Pythium and Phytophthora**

With wet conditions at planting time or later, both of these pathogens can have a serious effect on soybean stands. With *Pythium*, damage will occur as limiting growth or seed rot. Soybean seedling tissue of affected plants will have a soft brown rot developing within. Most of the time, the pathogen will develop in cool, wet soils. *Phytophthora* can cause

seed rot, seedling blight and root rot. Most of the time when seedlings are infected, roots are poorly developed and rotting. This disease survives in heavy wet soils, soils that are compacted, or in low areas of the field where water lays for a period of time.

## **Rhizoctonia**

When present can cause seedling blight and root rot. As one looks at a soybean field early and sees the stand as uneven throughout, young plants pale green in color and stunted, there is a good chance of *Rhizoctonia* being present. With this disease there will be a small, reddish lesion along the stem line or somewhat below the soil surface.

## **Charcoal Rot**

Normally seen in soybeans late in the growing season, especially in the southern states like KY and TN. However it can occur, in these southern areas, as a seedling blight, red to dark brown color from the soil surface up the stem. If severe, infected seedlings can turn black and die. In cool, wet conditions the

seedlings affected will survive and appear later in the season under hot, dry conditions causing yield loss if no tolerance exists within the plant.

Bottom line is this, once the crop is planted, little can be done to reduce severity of the seedling disease. Additional stress from poor growing conditions can worsen these seedling diseases. Soybean growers know where fields that have had one or several of these diseases have been present early on and had less yield come harvest time. Prior to planting one should make the decision to have the best fungicide treated soybeans planted in these fields protecting stand establishment as well as planting the right variety with good tolerance to disease. When walking fields, take your crop guides to help identify the disease and make notes for future discussion.

By Bill Mullen, CCA,  
SCI Director of Agronomic Services  
Phone: 740-505-2022  
[bmullen@seedconsultants.com](mailto:bmullen@seedconsultants.com)





# SCI 2016 Replant and Return Guidelines

**All replant paperwork must be received into the main office by July 15, 2016.**

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

## General Guidelines

- No replant credit, if seed is planted prior to insurance guidelines.
- Must replant in 2016; no credit for 2017.
- Delivered replant seed is subject to a delivery charge.
- Subject to product availability
- Subject to change without prior notice.

## Soybeans

- Grower must allow sufficient time for planted beans to emerge
- No replant if seed is still viable
- TURBO TREAT...100% replant
- Standard Treat...75% replant
- Untreated...0% replant

## Corn

- VOTIVO 1250 or, all traited hybrids...100% replant
- All hybrids with PV500...100% replant
- Conventional hybrids w/o VOTIVO 1250 or PV500...75% replant
- Competitive replant ½ of list price
- Replant of replant ½ of list price

## 2016 SCI Return Guidelines

### No return on treated soybeans

Growers may return untreated beans to the Sabina warehouse; to your Area Warehouse; or soybean returns will be picked up by SCI trucks.

**No corn returns will be accepted after July 1, 2016.**

**No soybean returns will be accepted after July 15, 2016.**

If you have returns, contact your Area Seedsman or the main office at 800-708-2676 before the return and/or replant deadlines.

**Remember, SCI beans are covered under multiple patents that are still enforced; so please adhere to SCI guidelines and avoid pirated bin run issues.**

# Early Cash Discounts Continue

Seed Consultants offers opportunities to maximize seed cost savings through its early cash discount schedule. SCI offers the following early cash discount schedule for the 2016 planting season. If you have any questions, please call the office at 800-708-2676.

## Spring Seeding Cash Discounts

April .....2.0%

### Accounts Due Paid in Full:

August 1, 2016

*Interest will be charged beginning September 1, 2016 on any unpaid balance.*

# SCI'S 2017 CUSTOMER TRIP

## SAVE THE DATE!



### PUNTA CANA DOMINICAN REPUBLIC

## January 21-27, 2017

Stay tuned for more information and  
important deadlines in late-July.



## 2016 Financing Programs

John Deere Financial Preferred Customer and/or RABO financing programs only available to approved customers. To apply for a John Deere Financial Preferred Account or RABO account or to increase your John Deere Financial or RABO line of credit, contact your SCI representative, so the necessary paperwork can be completed with John Deere Financial &/or RABO.

### GUIDELINES

- Must be a John Deere Financial Preferred Customer or approved by RABO
- Credit limits established by John Deere Financial &/or RABO...not by SCI
- To increase or establish your credit line call John Deere Financial (800-433-8964) or RABO (888-395-8505)
- Must be enrolled and approved to qualify for discounts
- Discounts applied on approval date from John Deere Financial &/or RABO
- Signed terms of disclosure on file
- Minimum purchase of \$1,000
- Due date of December 2016
- Applies only to seed purchases

Finance Plan	A	B
	John Deere Financial	RABO
Purchase & Approval Date	Fixed 0%	Fixed 0%
In Season	0.0%	0.0%



# The SCI Bulk Soybean Bin Program

SCI began the bulk soybean bin program 10 years ago for several reasons. For starters, bulk boxes cost \$700+ each. This price translates to more than \$14/unit of soybeans stored, assuming 50 units per box. (Actually \$17/unit if there are only 40 units per box.)

Bulk boxes must be returned, cleaned and nested. And growers must provide a covered structure for storage, unload, and load boxes. The bulk boxes eat up growers' storage space (equipment must be moved outside or to other buildings). Growers are also liable for damages to boxes.

An even bigger headache can be bulk bags.

The benefits of bulk soybean bins stack up. SCI currently has more than 200 bulk soybean bins on customers' farms. The majority are 521- bushel GSI bins with bean ladders. We are pleased with the bulk bin program, but believe many growers are missing out on the benefits.

## Top 5 Reasons To Participate

### SAFETY.

Bins eliminate the need to climb in and out of seed tenders and seed wagons, untying bulk bags. Bins also eliminate the risk of straps tearing or bags teetering over. You cannot put a value on injury to a family member or yourself, especially at this time of year.

### CONVENIENCE.

You can set the conveyor, pull under, turn on conveyor, open the bin door, and fill your seed tender.

### LABOR SAVING.

One person can unload bins and fill seed tenders with little effort. Bulk bags, on the other hand, require at least two workers. Bulk bag pallets must also be returned and bags disposed of, and bulk boxes must be nested for return, stored, and loaded.

### COST EFFECTIVE.

The bins eliminate the need for additional storage buildings by growers, reduces manpower requirements at planting and the conveyor can also be used for other loading/unloading chores.

### GROWER FRIENDLY.

100% satisfaction by growers. While not an official survey, we don't receive complaints about the bulk bin program.

### How can you participate?

- 🍷 Contact your area seedsman and sign an agreement.
- 🍷 Pour a pad
- 🍷 Purchase a multi use belt conveyor (40ft.)—eligible for Bulk Payback Program
- 🍷 Order beans, minimum 400 units/variety/bin
- 🍷 Order early and take early delivery





Seed Consultants Inc.  
P.O. Box 370  
648 Miami Trace Rd. S.W.  
Washington Court House, OH 43160  
USA

## Editorial Board

### Stuart Yensel

*director of sales and marketing*

740-505-0889 - Mobile

stuartyensel@seedconsultants.com

### Daniel Call, CCA

*general manager*

937-313-7421 - Mobile

danielcall@seedconsultants.com

### Bill Mullen, CCA

*director of agronomic services*

740-505-2022 - Mobile

bmullen@seedconsultants.com

### Matt Hutcheson, CCA

*product manager*

937-414-6784 - Mobile

matt@seedconsultants.com

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# Between the Rows *Updates from Daniel Call, general manager*

As we embark upon another planting season, never in your career have you had the opportunity to plant the abundance of genetic yield potential you will have available in 2016. Combine that yield potential with the technologically-driven management opportunities you have and it is easy to understand why trend line yield potential is in the upper 160's as a nationwide average.

If you analyze the historical national yields over the past 85 years (from the USDA), it is remarkable to see how corn growers have adopted new technology, elite germplasm and new cutting-edge farming practices. Take a look:

1930 = 20.5 bu/ac	1940 = 28.9 bu/ac
1950 = 38.2 bu/ac	1960 = 54.7 bu/ac
1970 = 72.4 bu/ac	1980 = 91 bu/ac
1990 = 118.5 bu/ac	2000 = 136.9 bu/ac
2010 = 152.6 bu/ac	2015 = 168.4 bu/ac

The genetics, traits and yield potential available to you as a grower are as

resilient, advanced and cutting edge as there have ever been in the history of the seed industry. Add to our current hybrids, the fact more hybrids will be bred, tested and analyzed in 2016 than in the first 60 years of the hybrid seed industry combined.

Lastly, is the incredible technology you have available today. Such as, VRT fertility and seeding; RTK guidance repeatable from year to year at sub inch accuracy; and NIR imagery to make in crop decisions throughout the growing season. Smartphones allowing you access to virtual rain gauges, irrigation capabilities, weather forecasts, as applied records, and the markets all in the palm of your hand. As an industry, we have come a long way in the past three years. Many

“new” technologies available in 2010 are obsolete today.

As we face a tough market environment, please take a moment to appreciate the sheer yield potential you have as a corn grower in 2016. Allow Seed Consultants to help you piece all of these opportunities together to maximize the potential of YOUR farm. Allow us to show you why.... Seed Consultants is: Simply, the Best Value in the Seed Industry™.

**Successfully,**

*Daniel Call*  
General Manager



## DON'T MISS OUR WEEKLY EMAIL NEWSLETTER!

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](mailto:matt@seedconsultants.com) or by signing up on our website at [www.seedconsultants.com](http://www.seedconsultants.com).