



June 2nd, 2025

NW IA Dealer Agronomy Update

Nutrient Deficiencies in Corn and Soybeans

This is the time of the year when nutrient demands for both corn and soybeans start to increase – especially after the V6 stage on corn. If root development has been slowed by environmental interactions, herbicide injury, salt burn from NH₃ or manure, insect feeding, nematodes, compaction, root pruning, product genetics, and other factors there can be nutrient deficiency symptoms present – in many cases just temporarily. Soil and tissue testing can help determine if a true nutrient deficiency exists. Springtime deficiency symptoms often disappear when the plant has developed a larger and more robust root system.

Corn Deficiencies



Figure 1. Nitrogen deficient corn leaf exhibiting the inverted "V".



Figure 2. Phosphorus deficient corn plant.



Figure 3. Potassium deficient corn plant.



Figure 4. Sulfur deficient corn plant. Photo courtesy of the International Plant Nutrition Institute IPNI and its IPNI Crop Nutritional Deficiency Image Collection, Jashandeep Kaur



Figure 5. Zinc deficient corn plant. Photo courtesy of the International Plant Nutrition Institute IPNI and its IPNI Crop Nutritional Deficiency Image Collection, M.K. Sharma and P. Kumar



Figure 6. Magnesium deficient corn leaf. Photo courtesy of the International Plant Nutrition Institute IPNI and its IPNI Crop Nutritional Deficiency Image Collection, P. Kumar

Nitrogen

N deficient leaves show up first on the oldest leaves which turn up yellowish-green and later in the season the leaf can develop an inverted "V" or spear shaped discoloration starting at the tip of the leaf and extending towards the leaf base. If extremely severe the "V" can exhibit necrosis.

Phosphorus

P deficient leaves on young plants may have a distinct dark green color with reddish purple leaf margins starting at the tip. The deficiency is observed in the older leaves. We have seen any soil conditions that limits root growth (cool temperature, wet or very dry conditions or compaction) can induce the deficiency even with adequate P levels in the soil.



Potassium

K deficient plants exhibit leaf edges that can become yellow and eventually turn brown and necrotic on the edges of older leaves. We need to be aware of these fields and scout later in the season. It can cause lodging of the crop because stalks are thin and weak.

Sulfur

S deficient plants can be identified by the youngest leaves showing a yellow striping, particularly at the leaf margin (edge), because S is not easily translocated within the plant. Sulfur deficiency is often confused with N deficiency during early plant development, but it is the older leaves that turn yellow when there is an N deficiency.

Zinc

Z deficiency can be observed as light green to white stripes between veins (interveinal chlorosis) or as wide bands starting at the base of the leaf and extending towards the tip of the newer leaves. Sometimes in real severe situations, new leaves can be almost white. Stunted plants may be apparent because the internodes are shortened.

Magnesium

Mg deficiency in plants initially can be observed as yellow or white streaking between veins in the leaf because of a shortage of chlorophyll. Lower leaves developing striping first.

Soybean Deficiencies



Figure 1. Nitrogen Deficiency caused by water-saturated soil. Photo courtesy of Bill Meecham, University of Kentucky, Bugwood 5368795.



Figure 3. Potassium deficiency. Photos courtesy of Dr. Bobby Golden, Mississippi State University.



Figure 4. Magnesium deficiency, photo courtesy of Dr. Bobby Golden, Mississippi State University.



Figure 8. Iron deficiency. Photo courtesy of Dr. Bobby Golden.

Nitrogen

N deficient soybean plants appear pale green to yellow with leaves maintaining dark-green veins. It could be due to wet, compacted, calcareous, droughty, and low organic matter. And low soil pH reduced the number of rhizobia bacteria which restricts the amount of N produced.



Potassium

P deficiency appears first on the oldest leaves as a yellowing of outer leaf margins. Since K is mobile within the plant, symptoms can appear throughout the plant.

Magnesium

Magnesium is a nutrient that is much needed in soybeans. It plays an important role in photosynthesis, starch production, leaf and root growth, carbon fixation, maturation uniformity, and uptake of Phosphorus. Mg deficiency is mostly observed on very acid (below 5.5) soils which usually have textures of sandy loam, loamy sand, or sand. The symptoms of pale-green leaves with interveinal yellowing appear first on older leaves.

Iron

Is needed for chlorophyll synthesis and nodule formation in soybeans. High levels of Mn can induce Fe deficiencies and vice versa. Iron deficiency is common in soil with pH above 7.0 and soils with high sodium and calcium content. Deficiency symptoms include yellowing between the veins of the newest leaves and reduced nodulation and nitrogen fixation. Commonly known as "iron deficiency chlorosis".

Sulfur

Sulfur is an essential element for the formation of proteins. When S is deficient, growth is reduced, maturity is delayed, protein formation is reduced, and foliate becomes pale green to yellow with non-prominent veins. Continued deficiency can result in leaves becoming pale brown to bronze.

Deep Dive into Iron Deficiency Chlorosis in Soybeans

In Central and North Central Iowa IDC is quite common because of naturally calcareous soils. IDC can begin to show up when the soil pH is above 7.0 but more so when there is excess calcareous presence. It is most prevalent early in the season in cooler, wetter conditions. Typically, it occurs at V1 to V3-V4 and many times plants grow through it in a week or two. Having a soybean more tolerant to IDC will also be a factor when growing out of those situations. Outgrowing it also occurs more rapidly with warmer temperatures. It also depends on severity and duration and weather conditions the rest of the growing season. There is a connection with SCN and possibly higher risk of root rots due to weakened state of the plant.





Glufosinate Usage in DEKALB Corn – Be SMART About It!

The large number of different corn traits in the industry can make it confusing for growers, especially when it comes to herbicide tolerance. One way to help everyone remember is to be SMART about Glufosinate spraying in DEKALB products – only SMARTStax and SMARTStax Pro!!

Roundup Ready 2 Technology® / LibertyLink® - SmartStax® PRO & SmartStax®

Roundup Ready 2 Technology® ONLY - VT4PRO™, Trecepta®, VT Double PRO®

Weed Size and Growing Points – It Escalates Quickly



This image highlights the growing points of two different sized Waterhemp from the same high-pressure field. Each one of the nodes on these plants can be a point of regrowth. It is a good visualization of why we are always pushing the importance of full rates, plenty of water, and correct weed size for a given product label.

Nodal Root Development May Highlight Uneven Emergence

Corn plants initially develop their first roots from the seed during germination called seminal roots. As the corn plant grows, it develops additional roots known as nodal roots. These roots emerge just below the soil surface ($\frac{3}{4}$ "). Typically, nodal roots begin to form around the V3 to V4 growth stages. Plants that emerged a day or two before their neighbors will have these roots develop first, kick starting some rapid growth that may highlight the uneven emergence in a field. These photos show how the slightly enhanced root mass can quickly lead to a bigger plant even though the planting date is the same.



New Product Spotlight DKC107-69RIB Trecepta



This week's new product spotlight is **DKC107-69RIB**

- ☆ NEW DKC107-69RIB TRE available in good volumes for 2026
- ☆ **Outstanding agronomics with a (1) on Stalks and a (2) on Roots**
- ☆ **Very good drought tolerance (2) and late season staygreen and intactness**
- ☆ Excellent disease tolerance especially with Goss' Wilt (3)
- ☆ Fusarium Crown Rot looks to be very solid
- ☆ Emergence and early season vigor both very good (2) – showed well in plots this spring
- ☆ Taller plant height with higher ear placement – 7" shorter than DKC108-17



DKC107-69RIB shown here in a 4/11 planted plot.



Potential GPS Issues June 2nd Due to Solar Storm

The recent G4 severe geomagnetic storm alert poses potential challenges for farmers and custom applicators, particularly regarding GPS signals. Disruptions in satellite operations can lead to loss of location data and inaccuracies in spraying or sidedressing, resulting in inefficient input applications and poor records. To mitigate these risks, farmers should understand their equipment's reliance on GPS, monitor potential loss of signal, implement local data backup solutions, and stay informed by signing up for alerts from the [NOAA Space Weather Prediction Center](#). By preparing for these disruptions, we can better navigate the challenges posed by space weather and maintain productivity.

Growing Degree Units

GDU accumulation has slowed down over the last couple of weeks – the earlier planting dates are still running slightly above normal for most locations. The table below shows the GDU accumulation from **April 11th – June 1st**, **April 23rd – June 1st** and **May 5th – June 1st** at different locations in Northwest and Central Iowa. These GDUs can be found on the following website – plug in your location and planting dates for GDUs specific to you. [MRCC](#).

Location	4/11/25 to 6/1/25	30 Year Average
Rock Rapids	502	468
Bancroft	461	447
Le Mars	522	506
Fort Dodge	482	486
Denison	528	508
Ames	527	497

Location	4/23/25 to 6/1/25	30 Year Average
Rock Rapids	409	404
Bancroft	379	386
Le Mars	419	432
Fort Dodge	396	415
Denison	427	435
Ames	446	424

Location	5/5/25 to 6/1/25	30 Year Average
Rock Rapids	324	320
Bancroft	302	307
Le Mars	328	340
Fort Dodge	311	330
Denison	334	335
Ames	347	337



Additional Resources:

Link to the last DAACAT call held on May 28th <https://youtu.be/tkW0taFDdWo>

Drought Monitor <https://droughtmonitor.unl.edu/>

Assessing Corn and Soybean Stands <https://www.cropsscience.bayer.us/articles/bayer/assessing-corn-and-soybean-stands>

Replant Decisions <https://www.cropsscience.bayer.us/articles/bayer/corn-replanting-decisions>

Sign up to receive Bayer Crop Science Agronomic Updates



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Monitor Soil GDUs for Corn Rootworm Hatch

<https://mesonet.agron.iastate.edu/GIS/apps/agclimate/gspot.phtml?var=gdd52&year=2025&smonth=1&sday=1&imgsz=640x480&emonth=5&eday=15>

Picture of the Week



Excellent nodulation showing on these V1 soybean plants planted in Mid-April – good sign for this early in the growing season.