

Soybeans on the Move: Gearing Up for Rapid Growth and the Longest Day

As we head toward the longest day of the year—the summer solstice on June 21—our soybean fields are set for a big leap forward. Soybeans thrive on long days and warm temperatures, and this period marks the start of their most aggressive growth.

What's Happening Now:

Nodulation and Early Canopy Development:

Soybeans at the V3–V5 stages are busy building their nodal root system and forming nodules with nitrogen-fixing bacteria. These nodules will soon help supply much of the plant's nitrogen needs.

Rapid Vegetative Growth:

As day length increases, soybeans respond with a surge of leaf and node growth. Each new trifoliate leaf sets the stage for future yield by capturing more sunlight and fueling photosynthesis.

Branching Potential:

This is also the window when branching and node formation accelerate. Warm days and good moisture promote branching, which can translate to more pods and higher yield potential later on.

Flower Initiation:

With the longest days of the year approaching, many early-maturing varieties start to initiate flower buds—even if you can't see them yet. Stress during this time (like moisture deficits or nutrient imbalances) can limit the plant's ability to set pods later.

Management Tips for Rapid Growth:

- **Scout for Early Pests:**
Soybeans are vulnerable to early insects like bean leaf beetles and aphids, which can clip off new growth.
- **Watch for Weed Competition:**
With canopy closure still ahead, weed competition can steal critical light, water, and nutrients.
- **Maintain Nutrition:**
Sufficient early-season fertility is key for vigorous growth and a strong reproductive phase.

Key Takeaway:

The longest days of the year are also some of the most critical for setting up soybean yield. Take advantage of this rapid growth phase—scout, manage, and support your crop so it can power through to flowering and pod fill.



Sources:

- Board, J. E., & Kahlon, C. S. (2011). Soybean yield formation: What controls it and how it can be improved. *Agronomy Journal*, 103(4), 1210–1217.
- University of Minnesota Extension. (2024). Early-season soybean insect pests and weed competition. Retrieved from <https://extension.umn.edu/soybean-pest-management>.

Timing Your Sidedress Application in Corn

Nitrogen (N) is a critical nutrient for corn, playing a vital role in photosynthesis, protein synthesis, and yield formation. However, getting the right amount of nitrogen to the crop at the right time is essential to maximize yield potential and minimize environmental losses.

Why Sidedress Nitrogen Matters:

Corn's nitrogen uptake ramps up rapidly during vegetative growth, especially from the V6 stage through tasseling (VT). Applying all nitrogen up front can lead to losses from leaching or volatilization, especially if weather conditions turn wet. Sidedressing nitrogen—adding nitrogen when the corn is already established—helps ensure N is available when the crop needs it most.

Optimal Timing for Sidedress Applications:

Research and field experience show that the best time to apply sidedress nitrogen is around the V4 to V8 growth stages. Here's why:

- **V4-V5 (Rapid Root Growth):** Corn is developing a larger root system that can quickly take up applied nitrogen. Early sidedressing at this stage minimizes early-season stress.
- **V6-V8 (Peak N Demand Begins):** The corn plant's demand for nitrogen surges as it begins to build leaves and prepare for reproductive development. Providing nitrogen at this stage ensures it's readily available to support rapid vegetative growth.

Application Considerations:

- **Soil Conditions:** Wet or compacted soils can limit nitrogen availability. Adjust application rates or placement based on field conditions.
- **Application Methods:** Options include coulters injection, Y-drop application, or traditional sidedress bars, depending on your equipment and field accessibility.
- **Environmental Concerns:** Avoid sidedressing when heavy rain is forecast, as this can lead to runoff and nitrogen loss.

Key Takeaway:

Sidedressing nitrogen during the V4-V8 window aligns with corn's peak uptake period, improving nitrogen-use efficiency and yield potential. By timing applications carefully and tailoring them to field conditions, growers can keep corn well fed and minimize losses to the environment.



Sources:

- Nafziger, E. (2014). Managing nitrogen for corn. *University of Illinois Extension*.
- Abendroth, L. J., et al. (2011). *Corn growth and development*. Iowa State University Extension.