

It's time to dispel the myth that current soybean genetics are the same as those soybeans grandpa grew, and thus can be managed as such. The industry is seeing consistent yield increases of 0.42 bushels per acre per year, thanks to significant changes in soybean genetics and production practices over the past half century². Modernized nutrient utilization by the soybean plant has also grown apparent as a result of the physiological changes to the plant over that same timeframe.

Growers can now realize exceptional bean yields with the right management, including soil and plant tissue analysis and help from their partner agronomists. Well-managed soybeans should be considered as a means to boost growers' bottom lines through investment in dedicated bean acres. A good place to start is sampling and analysis of soil to build a complete foundation that favors germination and growth with the right nutrients. Follow up with plant tissue sampling and analysis to assess the plant, pod, and seed development. Continue as the growing season persists to address any nutrient deficiencies.

Soil Analysis

Prepare soil foundation | Address post-harvest soil depletions | Hone fertilizer efficiency

Perform a soil analysis and check soil fertility prior to a soybean rotation.

Potassium

Potassium's role becomes more important when increasing frequency of soybeans in the crop rotation. Late season potassium applications aren't helpful as soybeans utilize large amounts of potassium, but mostly prior to R5.5. Ensure the levels of soil potassium are ideal with a soil analysis prior to planting.

Phosphorus

Maintaining phosphorus levels is necessary for correct soybean seed development and to reload the soil with optimal phosphorus for future crops. Thus, regular soil analysis is key for monitoring soil phosphorus levels and ensuring adequate P levels are met to achieve high-yielding soybeans.

Sulfur

Sulfur's availability throughout the growing season is necessary for soybean seed development. Consider adding Sulfur analysis to your conventional soil testing program as it is a vital nutrient for soybeans.

Managing soybeans for the **NEXT CENTURY**

Plant-Soil Convergence

Assess the system, not the symptom | Review soil and plant nutrient movement
Detect hidden hunger | Identify nutrient deficiencies | Improve fertilization efficiency

Uptake rate

Phosphorus uptake rates are high for high-yielding soybeans throughout the entire growing season. Shortly after Reproductive Stage 2 (R₂), Potassium rates of uptake peak between 3.5 and 5.2 pounds of K₂O/acre/day². Using Plant-Soil Convergence will help to quickly illustrate the availability of these nutrients, as well as their use efficiency.

Discolored leaves

Discolored leaves may signal a nutrient deficiency. A simple plant tissue analysis can assess this challenge, while you and your clients can find the best plan to mitigate the identified issue. Take a plant tissue analysis by R₄ in order to make final corrections needed before R_{5.5}.

Testing for nematodes

Soybean Cyst Nematode (SCN) testing is a crucial first step in managing a nematode problem, and the best means to plan ahead and prepare the future year's soybean crop. Sample when it's convenient, but do so prior to seed purchase in order to determine the right SCN-resistant variety of seed depending on the nematode egg quantity in your sample³. The Wisconsin Soybean Marketing Board offers farmers four free soil sample analyses for SCN and other plant parasitic nematodes. Learn more here: <http://bit.ly/WISCNProgram>.

Resources:

¹Cool Bean, University of Wisconsin-Madison, UW Extension. n.d. *A Visual Guide to Soybean Growth Stages* [Brochure]. n.p.: Nutrient and Pest Management Program.

²Gaspar, A.P., Naeve, S.L., Conley, S.P. n.d. *Understanding Nutrient Requirements and Utilization for High-Yielding Soybeans* [Pamphlet]. n.p.: Our Soy Checkoff.

³Schiff, David. "You're Already Out. Why Not Sample for Soybean Cyst Nematode." *Badger Bean*, Wisconsin Soybean Program, 25 Sept. 2017, <http://badgerbean.com/resources/free-sample-soybean-cyst-nematode/>.

Learn more:

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