GRETCHEN SASSENRATH – SOYBEAN RESEARCH PROFILE

Farmer Blog



Gretchen F. Sassenrath, Professor, Kansas State University

Why did you decide to pursue a career that includes soybean research?
I am a cropping systems agronomist; I look at the whole cropping system and how to improve it. Since soybeans are a critical component of the U.S. cropping system, my research needs to include this major U.S. crop.

What research topic have you completed in the past or are working on now that could have or has had the most significant impact on soybean production?
We are currently working on research to examine the role of the soil microbial community composition on soil-borne diseases. We are examining what factors impact soil microbial community structure and disease prevalence. Key factors include the micro-environment within the soil (temperature and moisture), soil nutrient balance (N, P, K as well as micronutrients), soil physical composition (clay content primarily in our area, but also sand and silt), tillage management, cover crops, and crop rotations.

Our previous research has demonstrated that use of brassicas (high glucosinolate mustard seed) can reduce disease organisms in the soil, specifically Macrophomina phaseolina *that causes charcoal rot. We have expanded that research to explore the fundamental changes in the soil that support beneficial microorganisms and potentially reduce disease-causing organisms. This research will have long-reaching impacts for crop production, and soybean production in particular, by identifying production management choices that improve soybean production and reduce disease.*

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
The soybean checkoff does two things well: supports research on soybeans and supports extension programs to transfer research results to farmers. I could not have completed my

research without their support. We have regular extension programs thanks to their support.

Within your area of expertise, what are the top two or three general recommendations you would offer farmers to improve their management practices?
Question everything – if you see a potential problem in a field, find out what's causing it. Extension folks enjoy visiting with farmers and tracking down problems – just ask us! It might take a while for test results to come back, but we'll help you track down a problem and develop potential solutions.

I think farmers already know this, but it's a good reminder to stay focused on your return on investment and not just yield. There are two ways to make more money: earn more (usually by increasing yields) and spend less. It is often a more reliable way to make more money by focusing on your return on investment of the entire production system, which usually means spending less.

Within your area of expertise, what do you consider to be critical soybean research needs that can impact the profitability of famers in the future?
Focus on cropping systems, especially the economics of integrated cropping systems. Most farmers have multiple enterprises, and examining soybean production within those integrated systems would benefit farmers by delineating the role of soybean production in their entire system and the fiscal benefits of integrated/diversified agronomic systems, including other crops and crop/livestock systems.

Examine the impacts of conservation management on soybean production, including opportunities to leverage conservation dollars to improve return on investment.

SRIN articles:

Researchers Across the Country Collaborate for Soybean Seedling Disease Management

Exploring Soybean Soil-Borne Diseases and Soil Health in Kansas

Mustard as a Cover Crop Shows Potential in Reducing Charcoal Rot

SOYBEAN RESEARCH
& INFORMATION NETWORK

This website is funded by the soybean checkoff

©2026 Soybean Research & Information Network