KRISHNA JAGADISH – SOYBEAN RESEARCH PROFILE

Farmer Blog

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Why did you decide to pursue a career that includes soybean research?
I like to take complex problems and find solutions by working with many different experts. Soybeans are one of the most important crops for the U.S. and globally, and I appreciate opportunities to address challenges with this crop that haven't been addressed. My research involves several crops, and I have learned that findings from one crop can benefit another. That has been the case with some complicated issues in soybeans, too.

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?
While working at Kansas State University, I helped develop near-infrared, or NIR, curves for protein, oil and linolenic acid content in soybeans. This information supports breeding efforts to improve germplasm and increase soybean composition quality.

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
The Soy Checkoff is instrumental in funding research I've done. Breeders at Kansas State still use the quality curves I helped develop, and work on the impact of heat and drought stress on soybean flowering would not move forward without multi-regional Soy Checkoff support. There is no simple way to get preliminary data for work like this to secure research funding. The Soy Checkoff opens the door for additional funding for future work, but without it, we would miss opportunities to improve soybean production.

Within your area of expertise, what are the top two or three general recommendations you would offer farmers to improve their management practices?

- *For soybeans grown under irrigated conditions, choosing cultivars with increased*

seeding vigor and the ability to cover ground quickly will help increase radiation capture and manage weeds better, reduce herbicide use and increase farm revenue.
- *Use the flexibility to modulate plant populations based on resource availability. Planting geometry can help lower seed rates, maintain yield and increase farm revenue by exploiting the indeterminate growth of soybeans.*

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?

- *Research to understand the carbon capture balance of soybeans would be critical. Soybeans use carbon, but they also lose it during respiration at night. Research that aims to understand and incorporate efficient carbon balance as soybeans develop will help bring in a quantum improvement in soybean productivity.*
- *Soybeans would benefit from significantly enhancing reproductive physiology that tolerates stress better. Increasing the stability of seed set under stressful environments would improve soybean resilience.*
- *Research that supports breeding to develop different soybean varieties that serve as sources to manufacture specific amino acids or oils for specific end uses, increasing soybean value.*

SRIN Articles:

Retaining Flowers to Boost Soybean Yield

Multi-Regional Research Collaboration Focuses on Soybean Flower and Pod Retention for Improved Yield

SOYBEAN RESEARCH & INFORMATION NETWORK

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