GUNVANT PATIL – SOYBEAN RESEARCH PROFILE

Farmer Blog

Gunvant Patil, Assistant Professor, Institute of Genomics for Crop Abiotic Stress Tolerance, Texas Tech University

Why did you decide to pursue a career that includes soybean research?
I have always been familiar with legumes, and I did my doctorate research on chickpea and other legumes. I wanted to work on crops, though I trained and did basic research as a molecular biologist and plant tissue culture scientist. When I had the opportunity to get back to research on crops, I took it. Now I focus on soybeans, because the crop has incredible potential for countless uses. After working on soybeans for years, I understand the plant fairly well and realize soybeans are a good model for plant biology.

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?
My work on identifying new alleles and genetic resources for soybean cyst nematode resistance has the most potential to help farmers. In addition, my lab is actively advancing research to engineer soybeans through gene editing in ways that both enhance associations with beneficial microbes and also exhibit robust resistance to SCN and other diseases.

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
The soy checkoff helps my research in big ways. We had basic ideas of valuable germplasm to explore, and the checkoff believed in us and provided the initial funding to identify important information for soybean breeders. Support from the checkoff is integral to our success, even though I am based at Texas Tech University, which isn't a soybean production area. Thanks to this support, we are now making significant progress in both discovering novel traits and engineering soybeans with enhanced agronomic performance.

Within your area of expertise, what are the top two or three general recommendations

you would offer farmers to improve their management practices?

- *Farmers should follow scientific recommendations for the maturity groups, soil profiles and overall genetic packages they choose to plan*t.
- *Beneficial microbes have huge potential to reduce the use of synthetic fertilizer. Specific soybeans connect with specific microbes to improve nutrient use efficiency. Beneficial microbes, combined with the right genetic source, have potential to improve nutrient use efficiency and reduce overall chemical fertilizer use.*

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?
We have focused on engineering soybeans, but we should start thinking about engineering microbes to enhance their capacity to be even more beneficial to plants. With research, we can learn to engineer both plant genetics and microbes, like a lock and key model, to improve production.

SRIN articles:

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SOYBEAN RESEARCH & INFORMATION NETWORK

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