SOYBEAN RESEARCH PRINCIPAL INVESTIGATOR PROFILE — MARTIN CHILVERS

Farmer Blog

Martin Chilvers, field crops pathologist and Extension specialist, Michigan State University

Why did you decide to pursue a career that includes soybean research?
It is something of a long story. I grew up in Tasmania, Australia, on a sheep and cattle farm and have always enjoyed agriculture and science. While pursing my bachelor of ag science, I had an enthusiastic professor who ignited my passion for plant pathology and its ability to solve real world issues, which led to my Ph.D. in plant pathology. The Midwest is fortunate to have prime conditions for soybean production and my scientific curiosity lead me to Michigan State University in 2008 where I research and apply my skills to the management of soybean diseases.

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?
The highlights would include improving understanding of seedling diseases, which has improved the screening of soybean genetics and seed treatment options. Development of diagnostic and risk prediction tools, particularly for sudden death syndrome (SDS), has enhanced disease identification and holds promise as a pre-plant decision aid. The work we have done, in collaboration with colleagues, has been instrumental in reducing yield losses through improved understanding of the pathogens and factors that cause diseases.

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
The checkoff has been instrumental in providing funding that has allowed us to conduct research and Extension activities to improve disease management and solve production problems. In addition, checkoff funds allow us to train our next generation of agricultural scientists, which is crucial to continue the evolution of soybean disease management.

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

you would offer farmers to improve their management practices?
Aside from good agronomic practices, such as crop rotation and planting into appropriate soil conditions, disease management should start with choosing varieties that have strong disease resistance. Planting a susceptible variety and trying to rescue it with fungicides is often a losing battle. In addition, understanding which diseases are giving you trouble and knowing field history is also important for management, i.e. knowing which fields to be mindful of when managing for white mold, SDS or Phytophthora is critical to reducing losses.

Within your area of expertise, what do you consider to be critical soybean research needs that can impact the profitability of farmers in the future?
Continued funding for research is imperative as pathogens continue to adapt. For example, Phytophthora sojae *has overcome many of the resistance genes once relied upon and* Cercospora sojina *has become resistant to certain fungicides. Pathogen adaptation, combined with changing weather patterns and emerging or introduced pathogens, pose a constant threat to soybean production. Innovation from ag scientists (both current and next generation) is needed to stay abreast with pathogens. Without continued support of checkoff dollars, we will struggle to maintain our current capacity with known pathogens let alone new issues that emerge.*

SRIN articles:

Soybean Phytophthora Stem and Root Rot Resistance Genes Have Become Less Effective

Studying the Connections Between Sudden Death Syndrome and SCN

SOYBEAN RESEARCH & INFORMATION NETWORK

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