

## The Partnership

The partnership between the Iowa Soybean Association (ISA) and Iowa State University (ISU) is longstanding, and essential to Iowa soybean growers. Since 1972, the association has contributed more than \$35 million to ISU research in a quest to address production challenges that have limited soybean yield and producer profitability. In 2007 alone, ISA funded more than \$3 million in soybean research at the university.



Average soybean yield has increased 34 percent since the early 1980s. This increase can be attributed to improved production practices, and disease and insect management recommendations developed and delivered by Iowa State researchers and Extension as a direct result of the ISA/ISU partnership.

The partnership has yielded notable successes including:

- Soybean varieties that produce heart-healthy oils
- Food grade soybean varieties that domestic and international customers rely on
- An initiative to reduce yield loss from soybean cyst nematode, which resulted in the development of hundreds of varieties with resistance
- The Iowa Soybean Rust Team, a public-private partnership that prepared Iowans for the arrival of a new pathogen, Asian soybean rust
- Financial support for the soybean research conducted by new faculty
- A new soybean management pocket field guide
- Expanded distribution of research results

We are pleased to be able to highlight some of the successes of our partnership in this annual research review.



**Curt Sindergard**  
President,  
Iowa Soybean Association



**Delbert Christensen**  
Chairman, Supply Committee,  
Iowa Soybean Association

## Growing Better Beans

*University, Association partnership benefits soybean growers.*

**T**he Iowa Soybean Association (ISA) and Iowa State University (ISU) are firmly committed to increasing soybean yield. The two organizations have been working together for years, but more recently have formed a powerful partnership to increase the soybean grower's bottom line, helping them feed and fuel the world.

“Over the past five years, ISA and ISU, through the College of Agriculture and Life Sciences, have developed an extraordinary partnership that has made a significant difference to Iowa soybean producers,” says Dr. Wendy Wintersteen, Dean of the College.

ISA provides between \$2 and 3 million of soybean checkoff funding annually to ISU to enable scientists to conduct research targeted at problems that rob producers of yield and profit. Other land grant universities have slashed budgets in the past four years and have not replaced retiring researchers. ISU, with the help of ISA, has expanded its faculty committed to soybean research, hiring several young researchers, to support soybean research.

Dr. Palle Pedersen, a Danish scientist, was hired as an Extension agronomist in February 2003 and has quickly become a national leader in soybean research. “We are the only university in the North Central region with an Extension agronomist focused solely on soybeans,” says Dr. Wintersteen. “Palle’s work has led to an increased understanding of soybean yields.”

Last year, he planted more than 7,500 plots throughout Iowa. Not only is Pedersen’s the largest university-based soybean research program in the United States, he also now directs programs throughout the soybean belt.

“What we’ve learned is that while it is much easier to improve corn yield, it takes careful management to improve soybean yield,” Pedersen says.

The majority – 75 to 80 percent – of Pedersen’s research funding comes from the soybean checkoff. This is important, he says, to keeping his work independent and protecting its integrity. “There is very little money available from the USDA or from the university. If it were not for checkoff dollars, I would not be in Iowa doing this work,” says Pedersen.

Dr. Leonor Leandro is an assistant professor in plant pathology, conducting research on two major soybean diseases that can cause dramatic yield losses, sudden death syndrome and Asian soybean rust.

“With rust, the goal is to search for partial resistance to the disease by comparing the infection process on different plant hosts,” says Leandro. “Sudden death syndrome is challenging because there are several environmental and soil factors that appear to affect its severity, including an interaction with the soybean cyst nematode. By understanding these things, we can make good management recommendations to help growers reduce yield loss and also support efforts to breed resistant varieties.”



*Among the young researchers who are having an impact on increasing soybean yield at ISU are (from left) Extension Agronomist Palle Pedersen, Entomologist Matt O’Neal, Extension Specialist Daren Mueller and Plant Pathologist Alison Robertson. Missing from the photo is Leonor Leandro, assistant professor in plant pathology.*

Leandro was hired as part of a \$500,000 financial commitment from ISA to support new research in fungal pathogens. “My position was created specifically to address the needs and concerns of soybean growers,” she says. “These funds create bridges between scientists like me working with research questions to people in the field who need practical solutions to those questions.”

Entomologist Matt O’Neal is another energetic young scientist who joined ISU in 2004. He and his graduate students are focused on the most significant insect pest of soybeans, the soybean aphid. “This invasive pest has increased insecticide use, with between 2 and 4 million acres treated in Iowa during outbreaks,” says O’Neal. “Our approach is to attack this pest across the full spectrum of Integrated Pest Management (IPM) tools, from insecticides to biological control to host plant resistance.”

What role has the soybean checkoff played in making this work possible? “Put very simply, the checkoff has made all of this possible,” says O’Neal. “The checkoff has supported research on how best to use insecticides, what role lady beetles and other insect predators play in suppressing soybean aphid populations, and how effective host plant resistance can be in preventing aphid outbreaks.”

There’s another benefit. “Support from ISA has also allowed my lab to explore other funding opportunities,” explained O’Neal. “Currently my lab receives 60 percent of its funding from the checkoff, either from ISA or the North Central Soybean Research Program (NCSRP). The remaining 40 percent has come from a mix of federal, institutional and agribusiness resources. The research that ISA has put in place is integral for attracting this additional funding.”

As her introduction to the ISU department of plant pathology, Alison Robertson was charged with an ambitious checkoff-supported study of soybean diseases. Four times a year for three years, field agronomists collected samples from 1,000 fields. “This is the most comprehensive study that’s been done on any crop in the United States, that I’m aware of,” says Robertson.

“Because we took samples several times during the year, we were able to see the progress of diseases as time passed. And because we did this several years, we saw the effect of different weather conditions on disease prevalence. Knowing how the disease progress varied through the season, depending on weather conditions, will help us with scouting in the future.”

ISU Extension Specialist Daren Mueller’s focus is soybean rust. He concentrates on the extension side, making sure growers know the risk of soybean rust through tools like the sentinel plot network and the Iowa Soybean Rust Fast Track System.

“We have trained more than 700 ‘First Detectors’ through the Fast Track System the past several years, raising awareness of soybean rust and providing soybean growers the opportunity to have samples quickly processed for identification of soybean rust,” Mueller says. “The Iowa Soybean Association has been a strong supporter of implementing and maintaining this Fast Track System.”