

Breakthrough soybean research could save farmers millions

September 14 2017, by Brian Wallheimer

Through a collaborative project, Purdue University and Dow AgroSciences researchers have discovered a novel soybean gene that provides resistance to a devastating and costly fungal disease.

The team of Dow AgroSciences and Purdue researchers screened a wide variety of [soybean](#) genetic material using a number of approaches. The research team pinpointed a gene called Rps11 that confers strong [resistance](#) to multiple types of Phytophthora sojae, a soil-borne pathogen that causes U.S. soybean farmers to lose approximately \$250 million per year due to soybean stem and root rot.

With this discovery, molecular markers can be developed to rapidly incorporate the resistance gene through traditional breeding techniques into elite soybean varieties to help protect farmers' [soybean yields](#) against stem and root rot. Dow AgroSciences intends to make the technology broadly available to soybean farmers.

The findings were to be highlighted at the World Soybean Research Conference in Savannah, Ga., this week, but the meeting was canceled due to Hurricane Irma. Research papers and talks are expected to be released soon.

Purdue's Jianxin Ma, professor of agronomy, said that as more Rps resistance [genes](#) are identified, they might be stacked to enhance the strength and endurance of soybean resistance to the pathogen.

"Discovering technology to help soybean farmers tackle tough problems is at the core of this [project](#), and our success in collaborating with Purdue on this project illustrates the power of public/private efforts to advance agriculture," says Oswald Crasta, Global Genomic Breeding Lead, Dow AgroSciences.

The joint research has allowed Purdue to touch on strategic goals that include addressing major national and global agricultural challenges and offering cutting-edge research experience to students.

"The collaboration between Purdue and Dow AgroSciences through projects like this has created a win-win situation that enhances our capabilities to address the grand challenges that face the real world," Ma said. "This project not only provides funding to support our graduate students, but also offers them unique opportunities to interact directly with our industrial collaborators. Such an experience would strengthen their research and social skills to solve significant global problems."

Provided by Purdue University

Citation: Breakthrough soybean research could save farmers millions (2017, September 14) retrieved 26 April 2024 from

<https://phys.org/news/2017-09-breakthrough-soybean-farmers-millions.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--