

## Decades of research lead to new soybean diversity, rust-resistant soybean

It took decades of painstaking work, but research geneticist Ram Singh managed to cross a popular soybean variety ("Dwight" *Glycine max*) with a related wild perennial plant that grows like a weed in Australia, producing the first fertile soybean plants that are resistant to soybean rust, soybean cyst nematode and other pathogens of soy.

Singh works in the Soybean/Maize Germplasm, Pathology and Genetics Research unit in the department of crop sciences at the University of Illinois at Urbana-Champaign. The unit is a division of the U.S. Department of Agriculture's Agricultural Research Program.

His efforts to introduce the desirable attributes of wild, perennial *Glycine* species into soybean plants began at the U. of I. in 1983 and followed a path that involved thousands of experiments, the development of a hormone treatment that "rescued" immature hybrid seeds from sterility, and multiple back-crosses of hybrid plants with their "recurrent parent," Dwight.

Scientists have known for decades that some wild, perennial soybean relatives had desirable traits that many hoped to introduce into soy, Singh said.

"There are 26 wild species of *Glycine* perennials that grow in Australia," he said. One species, *Glycine tomentella*, was of particular interest because it has genes for resistance to soybean rust and to soybean cyst nematode, he said. "Many people tried to hybridize it with soybean plants, starting back in 1979 at the University of Illinois." But the hybrids produced only sterile plants, "and they decided it was impossible," Singh said.

The genetic material in wild *Glycine* species "is just like a treasure that is locked inside," Singh said. "With this method, we are unlocking the treasure."

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [Plant breeder boosts soybean diversity, develops soybean rust-resistant plant](#)**