

ISU Soybean Breeding Program: An Update

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Introduction

The ISU soybean breeding program started in 2014. The focus of this program is to develop soybean varieties for Iowa and Midwest farmers. Additionally, researchers are active in scientific discovery and tool development related to breeding and crop production. The group consists of graduate and undergraduate research students who are going to become the next generation scientists and breeders capable in agriculture, engineering, and data sciences related topics. The work this group does at ISU farms is critical for our success, as this gives us valuable research and breeding data. The group is very appreciative of the support received from farm staff and managers. In 2019, there were over 22,000 variety plots on various research farms across Iowa. These research plots also supported several graduate students and fellows.

Group mission. To educate the next generation of breeders in agriculture, engineering, and data science to develop tools and technologies that advance science and empower farmers to increase profitability and sustainability.

Group research goals. To improve agricultural production and positively impact farmers and the agriculture industry through the development of new products (cultivars, germplasm, methods, tools), gene discovery, and research insights on pertinent topics. Specifically, breeding non-GM and food grade soybean.

Update. The group is preparing to commercialize three new varieties in 2021-2022 and seed production is ongoing. In 2019, 18 variety invention disclosures were made representing new genetics with commercialization potential. A continuous output of new varieties catering to the need of soybean farmers is expected. Fifteen research papers were published in the past two years on soybean helping advance digital and precision agriculture, disease and stress protection, yield enhancement and developed better methods, tools, and breeding approaches. Two PhD students, Kyle Parmley and Kevin Falk, have graduated and now are employed in leading seed companies.

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