The **Virginia Soybean Board** has partnered with the Children's Museum of Richmond to create soybean exhibits that educate visitors about soybean farming and soy products. Each year more than 200,000 visitors interact with permanent exhibits at two of the four museum locations and a traveling combine exhibit. Museum staff and state association staff also coordinate educational events at the museum and other area events. To learn more, visit ***vasoybean.com***.

The **Wisconsin Soybean Marketing Board** (WSMB) is proud to be using state checkoff dollars to help close the yield gap, the difference between predicted and actual yield, for Wisconsin soybean farmers. In conjunction with state soybean specialist Dr. Shawn Conley, WSMB is now undertaking its most comprehensive study to date to help farmers improve yield potential and make the most of their investment. For more information, visit ***badgerbean.com***.

SUCCESS IS IN OUR GENES

SOYBEAN GENOME MAPPING UNLOCKS OPPORTUNITY.

By Gracie Weinzierl

Soybean research has made leaps and bounds in recent years thanks to the advent of new technologies like gene editing. In agriculture, gene editing is the process of changing the DNA of a cell to increase yield; better withstand drought, pests and disease; or improve seed composition. It's a relatively common practice that has been improving seed varieties for years – but it wouldn't be possible without understanding the genetic makeup of a soybean.

A checkoff-funded genome mapping project—the first of its kind for a legume crop species—achieved a milestone for the soybean industry. This study sequenced a full genetic map of a soybean line used as a popular breeding stock for new varieties. As a result, researchers could identify the location of key genes in a soybean plant, making breeding new varieties for increased yield or natural defense against soybean pests easier than ever before.

"Mapping the soybean genome ultimately helped scientist to discover soybean genes that promote higher yield potential from pests, including weeds, nematodes, fungi, bacteria and viruses," says Jim Specht, Emeritus Professor, University of Nebraska-Lincoln.

Traditionally, soybean breeders have used cross-breeding methods based on physical plant characteristics

to improve varieties. With this new genetic information at their fingertips, breeders are able to select parent plants that have specific genes that will increase yields or add resistance to yield-reducing pests. This means that new varieties with desired traits are available to farmers faster.

It has been less than a decade since the soybean genome map was completed, but it's likely that farmers are already seeing the results in their fields. Because of checkoff involvement in the project, the full genome map was made publicly available to researchers and soybean breeders. This has allowed everyone involved in the soybean seed industry the opportunity to bring farmers the soybean varieties they desire. As new research methods and technologies come available, the genome map will only become more valuable to the soybean industry.

Better varieties sooner

1. INCREASE SOYBEAN YIELD POTENTIAL
Example: Identification of genes that result in soybeans with more pods per plant or more beans per pod, translating to increased yield.

2. DECREASE THREAT OF YIELD-REDUCING SOYBEAN PESTS (WEEDS, DISEASE, NEMATODES)
Example: Clone genes that exhibit SCN resistance and breed into existing soybean varieties.

3. IMPROVE SOYBEAN NUTRIENT PROFILE
Example: Gene editing to increase protein content made possible by having a genetic map available.