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Soybean Producers Help Advance Genomics Research

Soybean producers, using their soybean checkoff, have once again stepped up to advance genomics research. The United Soybean Board recently granted more than \$1 million to United States Department of Agriculture (USDA) scientists to begin work on annotation of the soybean genome. When complete, this initiative will ensure a high quality, more accurate annotation of the soybean DNA sequence, which will enable a more accurate assembly of the genome and ensure a more precise association between the soybean's DNA sequence and agronomic traits.

The USDA and the Department of Energy have joined forces to decode the entire hereditary code of the soybean. They have already completed almost half of their task. The approach they are using decodes millions and millions of small DNA sequences randomly, which must be put back together in the proper order. Then, over a period of years, the code will be analyzed. The genes will be identified, and the best guess of their function will be put forth, which is called annotation.

Completion of the soybean genetic map is crucial because everything scientists will do from here, improving resistance to diseases and insects, improving drought stress, improving traits important for human health and increasing yield, will all be done by better understanding the function of individual genes.

This project will ensure the best connection of the DNA code with agronomic traits. Knowing which DNA codes control which traits will allow modification of traits through genetic engineering. The genetic information will be put into public databases for distribution to public and private soybean breeders and geneticists. It will also provide a resource for breeders to speed their conventional breeding programs using Marker Assisted Selection.



PHOTO COURTESY OF THE UNITED SOYBEAN BOARD/SOYBEAN CHECKOFF

This isn't the first time soybean producers' jump-started genetic research. In 2000 they funded the development of a library of more than 300,000 pieces of genetic code that is now being used by scientists worldwide.

Investments by public entities such as the soybean checkoff or government agencies are extremely important to ensure soybean producers have access to low-cost technology. Innovations in agriculture should begin in the public sector, giving affordable access to everyone. Soybean producers will see increased yield from their recent investment into public sector genomics research. They will also obtain these yield increases at a much lower cost than if developed solely by the private sector. That's your soybean checkoff. Delivering results.



North Central Soybean Research Program
Your soybean checkoff. Finding solutions to production problems through cooperative research and coordination.

