LINKING INDUSTRIES TO DEVELOP RENEWABLE CHEMICALS

A unique center, created by Ohio State University's College of Food, Agricultural, and Environmental Sciences through a $11.6-million Third Frontier Grant, aims to bring together two of Ohio's strongest industries: agriculture and chemical, including lubricants, polymers and adhesives.

The Ohio BioProducts Innovation Center (OBIC), through a "cell-to-sell" management approach, will help turn Ohio's crops into high-value industrial bio-products—giving an added boost to industries which, combined, already generate $130 billion a year, according to Stephen Myers, director of the center.

The OARDC Soybean Breeding Program is at the center of this new endeavor.

"Soybean breeding was one of the major emphases put into the grant proposal," said Steve St. Martin, an OARDC soybean breeder. "We are expanding our program to accommodate more breeding for traits that people might be interested in for making bio-products."

Breeders are targeting Ohio soybeans for such industrial products as plastics, lubricants, adhesives, and resins, and they are finding that what works as an industrial product also works in the realm of human health.

"A variety with low saturated fat also helps give you a better 'pour' point for lubricants. That is, it keeps the oil from congealing," said St. Martin. "Additionally, reducing the linolenic acid of certain varieties also makes for a more stable industrial oil."

OARDC's Molecular and Cellular Imaging Center (MCIC) is also expanding as a part of the OBIC project, aiding in DNA sequencing and genotyping capabilities that are the foundations for molecular markers selection and used to pinpoint specific variety traits.

"We are functioning in a high throughput capacity, targeting soybean lines that are of specific interest to the industry for certain proteins and oils," said Tea Meulia, MCIC director.

Ohio State University has released over 40 soybean varieties to the market since 1984, generating roughly $191 million annually to Ohio's economy and supporting over 4,000 jobs. Bio-based products developed through OBIC will continue to boost the economy.