



## HISTORY

The Western Agricultural Research Station was established in 1958. It houses one of the world's oldest no-till experiment plots, started by Ohio State scientists in the early 1960s. The renovated barns that used to house the Western Station were replaced with new facilities in 2008. Included are offices, a workshop, a conference room, and seed and machinery storage areas.

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# WESTERN AGRICULTURAL RESEARCH STATION

## IMPROVING THE CROP AND LIVESTOCK INDUSTRIES OF WESTERN OHIO

Located on 428 acres north of South Charleston (Clark County), the Western Agricultural Research Station plays an instrumental role in supporting the field crop, specialty crop, and swine industries that are critical to the economy of farm-rich western Ohio.

Ohio Agricultural Research and Development Center (OARDC) scientists and Ohio State University Extension specialists work with Western Station personnel on innovative research programs that address not only specific production issues of crops and livestock but also better management of natural resources. The knowledge generated at the Western Station is then shared with growers and industry to guarantee they have the latest science-based information available to improve their enterprises and Ohio's overall economic health.

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*Hog production gross income is \$408 million in Ohio;  
pork production adds value to the local economy by  
providing 10,000 jobs.*



**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
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# RESEARCH FOCUS



The Western Agricultural Research Station maintains intensive research programs that address the profitability and sustainability of western Ohio's most important agricultural industries: agronomic crops (corn, soybeans, and wheat among them); specialty crops (such as pumpkins and sweet corn); and swine production. Alfalfa and forage grasses are also studied as part of the 240 research projects conducted at the Western Station every year. Additionally, the station is home to one-of-a-kind studies on no-till crop production, carbon sequestration in no-till farmland, and bioenergy crops.

*Ohio ranks sixth in U.S. soybean production, with an annual production value of \$1.9 billion; it supports 26,000 farmers and various food, feed, biofuel, and bioproduct industries.*

## KEY RESEARCH STUDIES CONDUCTED AT THE STATION INCLUDE:



### IMPROVED CROP AND FORAGE PRODUCTION

Precision agriculture is the newest research to the Western Station, comparing variable rate seeding with various planting down pressures and seeding depths. Drones are taking aerial imagery

photographs throughout the growing season to help farmers make better management decisions.

The number of research projects involving growth regulators, micronutrients, and biologicals in corn, soybeans, and wheat is increasing. In-furrow placement of starter fertilizers continues to raise many questions with Ohio farmers. Current studies are evaluating different rates and types of starter fertilizer with other methods of application. Nitrogen stabilizers and late-season nitrogen applications are being compared to traditional side-dressing applications at different growth stages in corn.

The Western Station also participates in research aimed at identifying genetic traits in soybeans that can be used for the development of novel industrial products, in collaboration with the university's Ohio Bioproducts Innovation Center (OBIC).

### WEED, INSECT, AND DISEASE MANAGEMENT

Different classes of fungicides are applied to corn and soybeans at different growth stages to determine the best integrated pest management strategy and rate-disease control—key information that helps growers apply fungicides only when needed to save

on input costs and decrease chemical use. Fungicide efficacy and IPM strategies are currently being evaluated to give pumpkin growers information they need to try and control powdery mildew, one of their biggest problems.

Current weed studies include management of herbicide-resistant weeds, integration of herbicide-tolerant crops, and evaluation of novel herbicide chemistry. Multistate research programs seek to determine the critical period of weed control, cumulative stress on nonherbicide-tolerant crops, and herbicide application timing in herbicide-tolerant crops.

Research is being conducted in field corn production with stacked corn hybrids, seed treatments, and in-furrow insecticides to reduce insect damage. Bt sweet corn varieties are comparing various spray treatments for control of late-season insect pressure in sweet corn.



### SOILS AND THE ENVIRONMENT

With increasing concerns of fertilizer runoff in Ohio lakes and rivers, OARDC researchers are conducting more studies involving fertilizer rates and placement, application timing,

and long-term phosphorous and potassium studies on corn and soybean production. They are evaluating fall versus spring application, strip-till versus conventional tillage versus broadcast applications, and fertilizer runoff.

The Western Station is instrumental to ongoing internationally recognized studies

on soil carbon sequestration. Studies in soil reconditioning, residue management, and cover crops are being evaluated in continuous corn environments to improve soil structure. Bioenergy crops, including switchgrass, are also being evaluated at the station.

### SWINE PRODUCTION

Research focuses on the genetic improvement of swine for carcass and pork quality traits. Current studies utilize purebred Berkshire pigs as a model for understanding genetic variations as they relate to economically important traits.

Additional research deals with animal welfare assessment, swine health, antimicrobial resistance, and alternative production options.

### ECONOMIC IMPACT

Crops and livestock raised in Ohio's western counties make a significant contribution to the state's economy. The studies and outreach efforts conducted by the Western Station play a key role in the viability of the region's and the state's agricultural industries, also extending its impact into the nation.

Key crops and livestock products supported by the station's research contribute billions of dollars in production value to Ohio's economy. In addition to the billions in added value these products help generate:

- corn has an annual production value of \$2.1 billion, supporting food, feed, renewable fuel, and other industries.
- wheat and pumpkins have an annual production value of \$252 million and \$33 million, respectively.