CFAES

OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER

NORTH CENTRAL AGRICULTURAL RESEARCH STATION

HISTORY

The North Central Agricultural Research Station was established in 1978. Initially focused on the Lake Erie region's processing tomato industry, the station's activities have expanded over the past two decades to include research on other vegetable crops, both for processing and fresh-market uses. The facility is equipped with modern buildings, two greenhouses, and a deep well for irrigation. Research at the station is greatly influenced by local and regional stakeholders, processors, and university faculty, as well as by the station's advisory committee.

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ENHANCING VEGETABLE AND FIELD CROP FARMING, AND BOOSTING HEALTH

Located on 105 acres in the central Lake Erie plains, west of Fremont in Sandusky County, the North Central Agricultural Research Station focuses on vegetable, small fruit, and field crops research and production systems—all of which are critical to the economy of farm-rich north-central and northwest Ohio.

North Central station personnel work with Ohio Agricultural Research and Development Center (OARDC) scientists, Ohio State University Extension specialists, growers, and industry groups to conduct innovative studies on specific production issues of specialty and field crops as well as on better management of natural resources. The knowledge generated at the station is shared with growers and industry to ensure they have the latest science-based information available to improve their enterprises, Ohio's overall economy, and the public's health.

North-central and northwest Ohio counties produce most of the state's vegetables—boasting high national rankings in processing tomatoes, sweet corn, peppers, and processing cucumbers.

RESEARCH FOCUS

The North Central Agricultural Research Station maintains an intensive research program that addresses the profitability and sustainability of northern Ohio's specialty crop industry: vegetable crops (tomatoes, cabbage, cucumbers, peppers, pumpkins, and sweet corn); small fruit (strawberries); and field crops (soybeans, wheat, and others). The station serves as a key regional location for breeding research; fungicide, insecticide, and herbicide evaluations; and studies of new and evolving production practices. Scientists at the station work to develop value-added products while incorporating integrated solutions to safeguard the environment.

Research at the North Central Station has yielded tomato varieties with a higher content of lycopene, a powerful antioxidant. These tomatoes are being used by Ohio State's Wexner Medical Center to develop disease-fighting food products.

KEY RESEARCH STUDIES CONDUCTED AT THE STATION INCLUDE:

TOMATO BREEDING

Emphasis is placed on developing new cultivars for the whole-pack peeled tomato industry based in the Great Lakes region, whose humid growing conditions require varieties resistant to disease. The North Central Station has maintained a long-standing tomato breeding and genetics research program—identifying new disease-resistance traits in response to grower needs, combining this resistance with fruit-quality traits emphasizing high-value consumer products, and releasing varieties and parent material to the seed industry.

INSECT, DISEASE, AND WEED MANAGEMENT

Adequate management of insect pests, plant diseases, and weeds is vital to the profitability of the specialty crop industry of north-central and northwest Ohio. These pests are ever-evolving and periodically develop resistance to current control methods. Researchers at the North Central Station continually work to identify new strains of diseases that develop over time; evaluate new insecticide, herbicide, and fungicide chemistry for effectiveness; test seed treatments and new application equipment and technologies; and look at variety selection and grafting of crops for resistance or susceptibility to diseases and pests.

PRODUCTION MANAGEMENT

North Central Station personnel and researchers also look for ways to better manage crops, through experiments related to transplant quality, plant populations, use of growth regulators, and effective fertilizer usage—as well as by finding new crops and varieties that are highly profitable for stakeholders in northern Ohio. This research helps producers boost production and profitability, improve fruit and vegetable quality, and identify and prevent food contamination, while minimizing fertilizer inputs and impact on the local environment.

COMMUNITY AND SUSTAINABILITY

In addition to research, the North Central Station works vigorously on community outreach activities. Along with the Sandusky County Juvenile Court Youth Works Program, the station has established an educational program on vegetable gardening for at-risk youth. The station cooperates with OSU Extension in organizing 4-H and Master Gardener Volunteer educational events as well as field days, short courses, and workshops for growers and other audiences.

ECONOMIC IMPACT

Vegetable crops raised in Ohio account for more than 5 percent of the state's total farm cash receipts, totaling over $282 million annually. Key vegetable crops supported by the North Central Station contribute millions of dollars in production value to Ohio's economy in addition to the billions in added value these crops help generate through job creation, retail food sales, and consumer health.

Thanks to the support of OARDC scientists and OSU Extension specialists, Ohio ranks third in the nation in processing tomato production, contributing $100 million annually to the state economy.

Research conducted at the North Central Station helps support the $500 million Great Lakes regional tomato industry. Thanks to this research, the region has increased its national share of the high-value, whole-peel, and diced tomato market to 45 percent.

Northwest Ohio is home to more than 30 percent of U.S. sauerkraut production—a $50 million industry concentrated around Fremont. Research at the station, among other contributions, has helped growers and processors to identify high-quality kraut-type cabbage varieties suited for Ohio and to determine maturity days.