



# Alan T. Busby Research Farm: Organic, Sustainable and Integrated

The Alan T. Busby Farm is one of three university farms. It is located eight miles from the Lincoln University (LU) campus in Jefferson City, Missouri, just off Highway 54 West.

Busby Farm serves Lincoln University Cooperative Research (LUCR) by demonstrating and researching organic, integrated and sustainable ways to farm. It is 280 acres of diverse landscape such as rolling pasture, oak and hickory uplands, and bottomland forests. Some of the land is river bottom. It is one of the largest organic research farms in the country.

Busby serves Lincoln University Cooperative Extension (LUCE) primarily during outreach activities open to the public and at the Youth Development Cabins.

There is also a beef-handling barn, a composting facility and a building that was formerly used for swine research.



Other unique aspects are the two-acre water reservoir, solar-powered pump and blueberry orchard.

## Organics

Busby Farm is certified for organic production of crops by Ecocert ICO LLC\*. Innovative organic agricultural research is ongoing at the farm. Blueberries, forages (plants eaten by animals), vegetables and cover crops (a crop planted primarily to manage soil fertility, soil quality, water, weeds, pests, diseases, and biodiversity) are some of the organic crops grown. In the future, the orchard will grow brambles (a bush or vine that often has thorns), elderberries and apples. Everything on the farm meets the requirements of the National Organic Program. This includes all agricultural activities,

plant treatments, seeds and anything added to the soil. Organic research focuses

\*Ecocert ICO LLC of Greenwood, Indiana, certifies the farm to be organic (as of Dec. 26, 2013). For the remainder of 2013, the farm was certified by Organic National and International Certifiers (ONIC). However, this has changed as ONIC is no longer in business.



on several areas. One is fruit production. Other areas of study are integrated pest management of horticultural crops and the use of cover crops. Some livestock are certified as organic. This provides Lincoln University with many opportunities for innovative research.

## Orchard

In 2011, over 3,000 blueberries were planted on two-and-a-half acres, comprised of the cultivars 'Duke', 'Liberty' and 'Blue Crop.' The data collected will be used to compare yields, winter hardiness and plant vigor in future studies. A number of organic methods are currently being used for pest control, weed control and to maintain plant health. Cover crops are grown prior to planting brambles, elderberries and apples.

## Livestock

Busby Farm is home to a herd of 20-25 head of Angus cattle. It also houses 40 head of Katahdin hair ewes and a flock of meat goats. The livestock are used in forage-

based research projects. These focus on multispecies grazing, forage utilization and silvopasture (a combination of forestry and the grazing of domesticated animals). There is also research on genetic selection. The research focuses on livestock that do well on a forage-based diet and that are also resistant to parasites.

## Integrated Pest Management (IPM)

The LUCE IPM program stresses the use of preventative and cultural (non-chemical) practices that enhance crop health. These include crop rotation, cover cropping, sanitation, trap cropping systems and biological controls. These methods are used to modify pest

behavior. In this way, the number of pests can be reduced or eliminated without using chemicals. Train-the-trainer programs are also provided to field staff; they can then teach small fruit and vegetable growers in Missouri.





## Native Plants

Busby Farm has sites for Missouri native plant and demonstration gardens. The LUCE Native Plants Program (NPP) maintains the gardens and helps to restore prairie and woodland areas near the Youth Development Cabins. There is a FINCA (Families Integrating Nature, Conservation and Agriculture) garden containing native plants that produce edibles. There is also a butterfly garden. Native grasses, wildflowers, shrubs and small trees offer habitat for pollinators and other wildlife.

## Composting

The composting facility features an in-vessel composting machine. It composts local food waste from a hospital, the campus cafeteria and some hotels.



Demonstrations on how to compost with worms and several backyard composters are given. Solar energy from the water pump supplies radiant heat to the worm composting beds. A green wall and green roof (where vegetation grows in soil) provide shade. The area around the facility is maintained to encourage native plants. A rain garden captures runoff from the building's roof.

## Youth Development Cabins

Five bunkhouse-style cabins are available for outreach and educational purposes. They are used for youth camps and retreats. There are also classroom cabins, a kitchen and restrooms. Urban youth groups can experience rural life and observe a working farm while staying at the cabins. The cabins are also used for field days, workshops and retreats. They are air conditioned and have running water.

## Alternative Energy

The water pump runs on solar energy. It provides water for the orchard's drip line irrigation system and livestock waterers. Rainwater and runoff are stored in the two-acre reservoir.

Switchgrass and *Miscanthus giganteus* (a large, perennial grass) are grown for biomass (living or recently living material that is used for energy production) research.



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<http://www.lincolnu.edu/web/cooperative-research/alan-t-busby-research-farm>



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*One of the largest certified organic research farms in the country.*



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