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# Farm Report 2019

@edenhallfarm

[edenhall.chatham.edu/food-farm](http://edenhall.chatham.edu/food-farm)

## From the Farm Director



### ABOUT OUR FARM

Chatham University Eden Hall Campus Farm is a certified organic, diverse farm. We strive to be responsible stewards of the land, and work to improve the soil health and biodiversity in and around our farm.

We actively promote a healthy living farm, and work to provide our students, and our community, with meaningful opportunities to engage with and learn about sustainable farming and local food systems.

Tony Miga, MSUS '14  
*Director, Eden Hall Campus Farm*

### OUR VISION

We envision a future where sustainable farming improves ecosystems and strengthens communities.

# Farm Snapshot 2019

## NOTEWORTHY PRODUCTION



22 gal. maple syrup



693 lbs greens



116 lbs honey



500 lbs squash

618 lbs apples



115 lbs ginger



1,012 lbs tomatoes



46 lbs shiitake



## EDUCATION & STUDENT INVOLVEMENT



22  
student farm crew  
members



3,547  
student farm crew  
hours



5 internships  
2 independent studies  
4 research initiatives  
6 farm workshops

COMMUNITY  
PARTNERS





## Solar High Tunnel

Our Solar High Tunnel (SOL) is a 3,000 sq. ft. year-round production high tunnel.

In 2019, we started thousands of seedlings in the SOL. These plants were eventually planted all over our farm. The SOL also houses our grafted apple trees and baby pawpaws prior to field planting.



In 2019, we grew 26 different crops in the SOL, including:

- 591 lbs of tomatoes
- 45 lbs of peppers
- 41 lbs of ginger
- 21 lbs of basil
- 52 lbs of carrots

*Azziza Robinson, MAFS '19  
seeding flats for transplant*

▼ *Emily Nye, MSUS '20  
sprays organic  
pesticide derived from  
chrysanthemums*



*Angelica Paletta, MAFS-MBA '20 transplants  
greens in the SOL* ▲

We practice Integrated Pest Management (IPM). As part of our IPM plan we released ladybugs, grew flowers to encourage beneficial predators, hatched praying mantises and sprayed organic, naturally derived pesticides only as a last resort.



## Orchard



To encourage new tree growth on already existing trees, the farm crew engaged in restorative pruning in 2019.

In early summer, the farm crew planted nine bittersharp and bittersweet varieties previously grafted on semi-dwarf and dwarfing stock. Newly planted trees will take 3-5 years to mature and fruit.

The new apple varieties and our mature sweet varieties help us reach our goal to cultivate a cidery-friendly orchard.

*Cristina Law, MAFS '21  
harvesting our Orchard apples* ►

**618 lbs of apples  
harvested in 2019**

**Donated** to the Falk School Wine, Cider and Meads course; and Napkin LLC run by cidemaker, Maura Rapkin, MAFS-MBA '19.

**Sold** to Parkhurst for treats and pie-filling.





## Elsama

Elsama (ELS) is a four-acre fenced field that is divided into four quadrants, which are planted on a rotation of cash and cover crops.

### KEYS TO SUCCESS

Basket-weave trellising for tomatoes, laying straw for weed suppression

### CHALLENGES

Pest management, specifically groundhog and raccoon wiping out watermelon and corn

### COVER CROPS

- Sunflowers
- Buckwheat
- Rye
- Clover



### 100 Summer Volunteer Hours



**NEW**  
Outdoor Patio & Classroom

### NOTEABLE ELS 2019 PRODUCE

- 500 lbs squash
- 125 lbs tomatoes
- 20 lbs beans

## Vermicomposting

Vermicomposting is the process of using worms to break down organic material into compost.

### OUR GOAL

To perfect a vermicomposting system for replicable starter systems used by students and faculty

Red Wigglers Earthworms (*Eisenia fetida*) are adapted to feeding on decaying vegetation and can adjust their population size to their environment. This is the most common worm in vermicompost systems.

### WILL EAT

Most fruit and vegetables, coffee grounds, tea, bread, grains, unbleached paper, cardboard, plant trimmings

### WILL NOT EAT

Citrus, onions, garlic, meat, fats, potatoes, acidic foods like pineapple, mango, etc.



### SET UP

Three 5-gallon buckets are stacked, the top two are used by red wigglers to process the plant matter and the bottom catches the liquid produced in the compost process. Leachate can be diluted and used as a mild fertilizer.



## Shiitake

This year, we added 46 fruiting shiitake logs to the 304 total logs available in the laying yard. We harvested 46 pounds of shiitake mushrooms for sale.

### CUT FRESH LOGS

Shiitake logs are made using fresh cut oak limbs, 4-5 inches in diameter. These are cut to 3-foot length logs which are inoculated with shiitake spawn.

### DRILL HOLES & INOCULATE

Small holes are drilled into the logs, and stuffed with shiitake-inoculated sawdust and finally plugged with wax.



### LOGS REST

The logs sit for one year so the mushroom mycelium—the webbed network of fungal cells that composes the shiitake organism—can fully integrate into the log.



### SHOCK LOGS

After the resting period we shock the logs to initiate fruiting by soaking them in water for 24 hours. Our rainwater capture system supplies all of the water used in this process.

### FRUITING

After soaking we lean the logs against a plank at a 45-degree angle to encourage fruiting. Within a week they produce dozens of mushrooms on each log.

### HARVEST

As mushrooms grow, the cap begins to unfurl and eventually separates from the stem. At this point they are ready to harvest. Once harvested, the mushrooms are sold raw or dehydrated.





## Apiary



In 2019, student beekeepers worked closely with Christina Neumann of Apiodea Apiary in Pittsburgh, PA. Throughout the season, Christina provides vital knowledge and mentorship on seasonal management practices. In September, the students travelled with Christina to Montreal, Quebec, Canada to attend Apimondia. Apimondia is four day bi-annual international bee conference. Students networked and learned from scientists, academics, and beekeepers from all over the world.

◀ *Bethany Welch Luttrell, MAFS '19*  
*catching a swarm in May*

- Student beekeepers managed **ten hives** in 2019
- **116 lbs of honey** harvested
- Student made **salves and lip balms** with beeswax
- The Farm **hosted a workshop on bees** at the Eden Hall Fellows Conference



▲ *Bradley Barrow, MAFS-MBA '20*  
*setting a pollen trap for her thesis*

## Ginger



Born out of a product development project, Wigle Whiskey—a local distillery—and Eden Hall Farm have established a successful, symbiotic partnership for four years. This year, beginning in March, we expanded our ginger production and sold 100 pounds of ginger to the distillery.

Our ginger is featured in Wigle Whiskey's annual production of Afterglow, a ginger flavored spirit.



### Three Varieties Grown

- Yellow
- Madonna
- Bubba Blue

► Nick Sirio, MAFS '21, Emily Nye, MSUS '20 and Indira Ortiz, farm assistant, harvest baby ginger



## Maple Syrup Production



▲ Rachel Snyder, MAFS '19  
drilling tap holes

A variety of maple trees are located along Ridge Road and throughout campus. Using two taps on each tree, and flexible tubing, sap is collected via buckets at the base of each tree.

Our sap off the tree starts at 1.5-2% sugar content. With a constant fire, the evaporator boils large quantities of sap, reducing the sap's water content until the correct percentage is achieved.

Our evaporator, built in late 2018, was first used this year! The evaporator is a 2x6 Leader evaporator, wood fired, stainless steel drop flue pan design.

Once pulled from the evaporator, the syrup is bottled and sold to a variety of sources, including to Parkhurst to be used in the University dining hall. Syrup is also sold at farmers' markets and used at the annual Eden Hall Campus Pancake Dinner.



◀ Jill Behrman, BSUS '19  
running the evaporator

Maura Rapkin, MAFS-MBA '19  
laying firebrick ▶



**50 trees tapped  
in 2019**

-42 gallon sap =  
1 gallon syrup at  
66.9% sugar content



## Special Projects

### HYDROPONICS TOWER

We use the hydroponic tower as an educational tool to demonstrate indoor organic production year round. This system houses 24 plants at a time and constantly circulates a nutrient solution over the roots.



Our hydroponic tower produce includes lettuce, kale, basil, and an assortment of Asian greens.

### BIRD BOXES

Avian animals (bluebirds, kestrels, bats, etc.) encourage diverse, healthy ecosystems, and assist in pest control. Installing bird boxes increases avian habitat and can bolster bird populations, which has been dwindling locally.



In early spring 2019, kestrel and several bluebird boxes were installed in Elsalma and the Orchard.

### OCCUPATIONAL THERAPY SENSORY GARDEN

Sensory gardens are therapeutic tools, in which plants and other elements entice all senses. The sensory garden features interactive and aromatic plants like lamb's ear, rosemary, lavender, and perennial flowers. A birdbath and a glass mobile feature add gentle acoustics. All are welcome to visit and enjoy!

Occupational therapy (OT) graduate students helped build two new hugelkultur beds in the Orchard, as part of a sensory garden project, study space, and native pollinator attractor.



### HUGELKULTUR

*A permaculture method that layers logs, branches, and manure under layers of compost. As the larger materials—the logs and branches—decompose, it slowly releases nutrients, keeping the bed fertile for years. Roots freely expand with the creation of air pockets within the layers.*

## Dry Bean Research



▲ Emily Nye, MSUS '20, Indira Ortiz, farm assistant, and Cristina Law, MAFS '21 shell dry beans.

### OUR GOAL

To evaluate specialty dry bean varieties including heirlooms, commercial cultivars and breeding lines for agronomic performance and consumer-end traits.

#### Varieties of beans planted

- Calypso, *heirloom*
- Tiger's Eye, *heirloom*
- Jacob's Cattle, *heirloom*
- Black Coco, *heirloom*
- Orca, *WSU 2003 release*
- Candy, *Lobitz release 1990s*
- Jacob's Cattle Gold, *cross between Jacob's Cattle and Paint, origin unknown*
- Stardust, *Lobitz release 1990s*
- CBB-15, *disease resistant kidney USDA breeding line*
- CBB-20, *disease resistant cranberry USDA breeding line*



The Farm's partnership with Cornell University allowed us to learn more about these varieties of beans and how they grow in western Pennsylvania soils.

## Community Engagement



2019 was the first year of Eden Hall Farm's partnership with the Greater Pittsburgh Community Food Bank. In the one-acre plot of the "Food Bank Farm," student workers and Food Bank volunteers organically grow fruits and vegetables to be sold through the Food Bank's Green Grocer program. The Green Grocer program is a mobile food market which visits 17 neighborhoods weekly across Allegheny County that do not have access to affordable, healthy and fresh foods.

The project provides unique learning opportunities for student workers to strengthen their skill set in sustainable agriculture, data collection, community engagement and business planning.



### 2019 Highlights

- 66 Volunteers
- 312 Summer volunteer hours
- 520 lbs of produce





## Community Engagement

- Educational Farm Tours & Workshops
- Farm-to-Table Veranda Dinners
- In-Kind Gifts & Wedding Favors
- 1000+ Instagram followers



▲ Emily Nye, MSUS '20 giving a tour of the shiitake laying yard to undergraduate students.

▼ Tony Miga, farm director, giving a tour of the Solar High Tunnel in the summer.



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2019 best nine on Instagram #2019bestnine



4,695 Likes to 48 posts in 2019  
edenhallfarm Thank you for your likes!

## Farm Crew 2019





## Farm Crew Alumni Highlights



### **ANNA SEKINE, MAFS '17**

Shady Side Academy, director of SSA Farms

#### **Meaningful Career Accomplishments**

*"I survived my first growing season on my own, and I helped lead a Global Action Day at Shady Side Academy's Middle School last winter. Students learn about complex social and environmental issues and work with local*

*organizations to do hands-on service activities related to clean water, air quality, and food insecurity."*

#### **How did farm work impact your career?**

*"Working at Eden Hall Farm gave me the skills and confidence to manage a farm on my own. Growing is hard and unpredictable, but I felt like Tony always allowed me to experiment and to try different things. Even if they didn't work out, it was a cool learning moment."*



### **CHLOE LAZARUS, MAFS '18**

Project EATS, Farm Site Manager

#### **How did farm work impact your career?**

*"Working at Eden Hall Farm taught me management skills and gave me confidence in my work that I use today."*

#### **What advice would you give students considering farm work?**

*"DO IT! Farming is so empowering and satisfying. I do think that anyone who studies food should have some basic experience with growing it firsthand, and I think that the opportunities at EH Farm give you a crash course in so many different contexts and types of farming that broaden the meaning of the word in the best way possible."*



## Eden Hall Farm



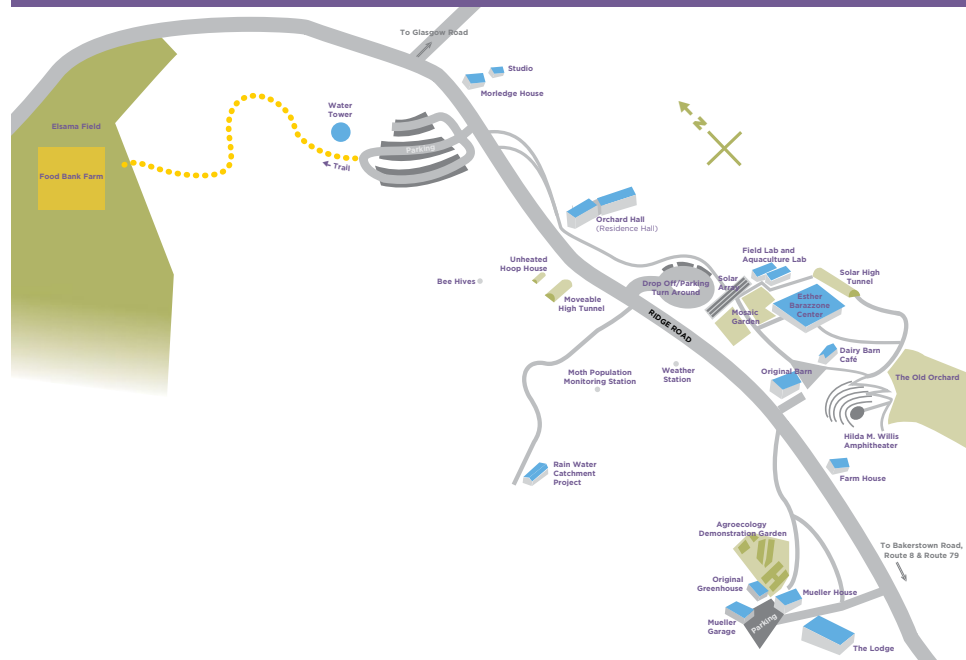
### CERTIFIED ORGANIC

Chatham University's 24-acre certified organic vegetable farm is located in Gibsonia, PA.

### SOIL HEALTH

We prioritize soil health through a crop fertility plan, which outlines the farm's current and future crop rotation, cover cropping plan, interplanting of crops, fertilizer and compost usage. Annually, the Farm sends soil samples to either Penn State University or Cornell University for fertility tests.

## Eden Hall Campus





6035 Ridge Road, Gibsonia, PA 15044

Special thanks to all the Eden Hall Farm Crew and staff that contributed their time and energy into putting this report together:

- Eleanor Bacon, MAFS+MBA '20
- Bradley Barrow, MAFS+MBA '22
- Cristina Law, MAFS '21
- Emily Maneval, MAFS '22
- Josie Martin, MAFS '21
- Jacob Millward, MAFS '21
- Elijah Morrow, MSUS '21
- Emily Nye, MSUS '20
- Angelica Paletta, MAFS+MBA '22
- Nicholas Sirio, MAFS '21
- Erna Spela, MSUS '21
- Chloe Lazarus, MAFS '18
- Anna Sekine, MAFS 17
- Tony Miga, MSUS '14 (staff)
- Indira Ortiz (staff)