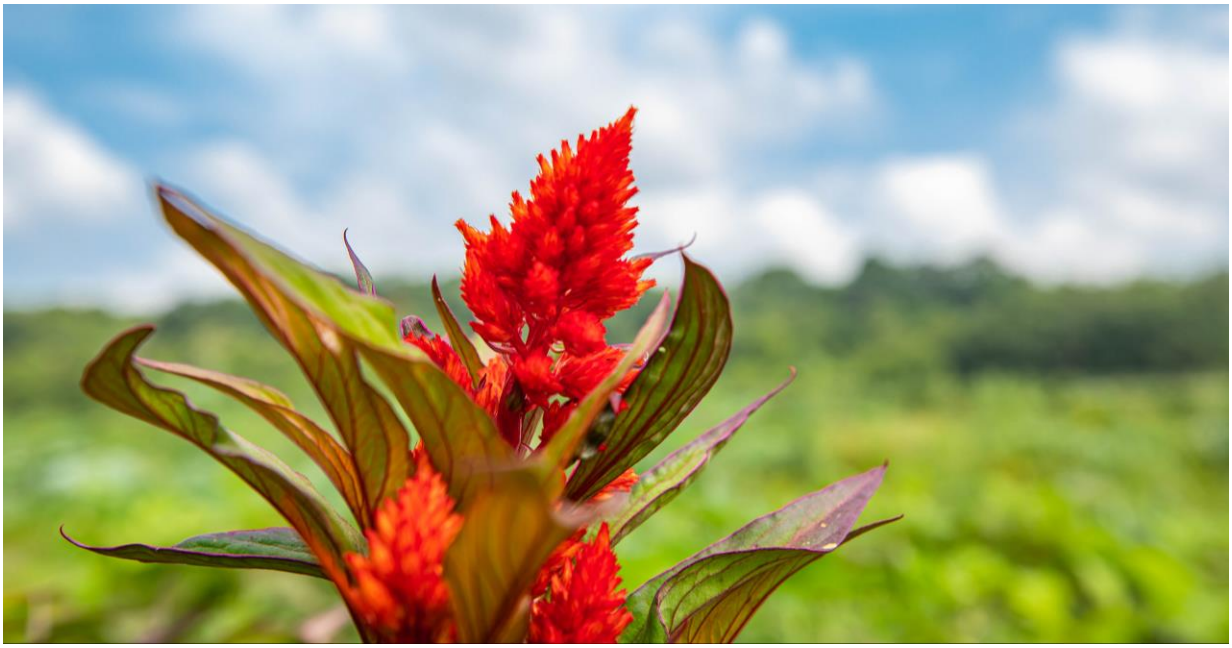
Homefield Farm

at Kentland Farm

2024 Annual Report

Acknowledgements



Mike Evans, Director SPES
Brian Grove, Director of Dining Services
Brandon Hendricks, Senior Associate Director Dining Services
Tom Kuhar, Professor, Entomology
Barbara Leshyn, Advanced Instructor, SPES
Anthony Purcell, Assistant Director, Southgate Dining Services
Steve Rideout, Associate Director of Extension Professor
Brooks Saville, Agricultural Manager, SPES
Ben Tracy, Interim Director SPES
Courtney Walder, Assistant Farm Manager
Kentland Farm Crew, SPES
Homefield Farm Summer Crew, Dining Services
Sustainability Student Interns
Photographs courtesy of Darren Van Dyke, and farm staff.

For more information, please contact:
Emily Williams
Sustainability Manager, Dining Services, Housing & Residential Well being
wemily93@vt.edu

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Executive Summary

A Year in Review

Homefield Farm is a twelve-acre certified organic farm located at Kentland, eight miles from Virginia Tech's main campus. It is a site for experiential learning, sustainable agriculture, and produce production. The farm is collaboratively operated by Dining Services, The College of Agriculture and Life Sciences, and the School of Plant and Environmental Sciences.

Our Assistant Farm Manager, Courtney Walder, joined the Homefield team in February of this year. With our manager position vacant, Courtney has helped establish the 2024 production season in combination with the Kentland Agricultural Manager and Dining Services' Sustainability Manager.

In 2024, Homefield produced **15,729.2** pounds of organic produce, valued at **$47,469.81**. Researchers harvested **5998.3** lbs of conventional produce, provided to Dining Services, valued at **$11,674.01**. Campus Kitchen was able to glean **119** pounds of organic produce, valued at **$212.61,** and **1630** pounds of conventional produce, valued at **$2,538.19**, for our community partners and The Market.

Homefield Farm has hosted eight class courses this year, focused on hands-on learning. The farm also held four farm stands on campus this fall. Farm stands are intended to promote the farm through campus engagement, while offering students fresh campus-grown produce.

In October '24, we onboarded a new Farm Manager, David Lucas. We look forward to seeing Homefield Farm's progress as he joins our Assistant Manager for the next growing season.

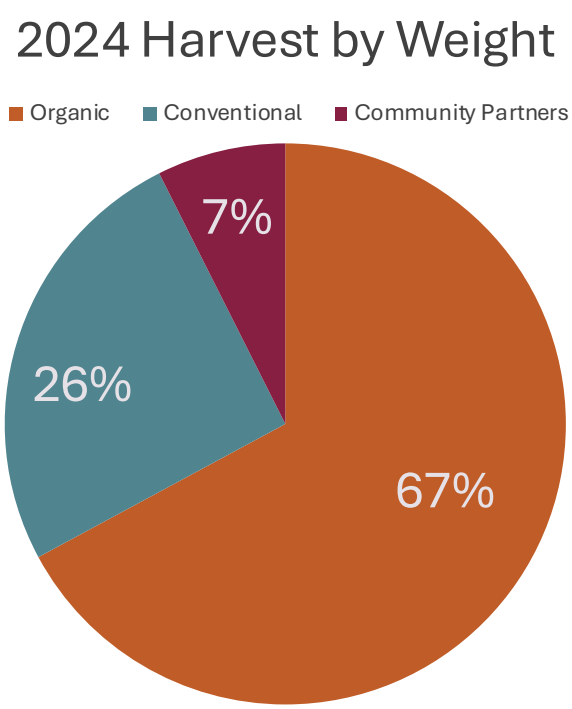
Crop Production and Value

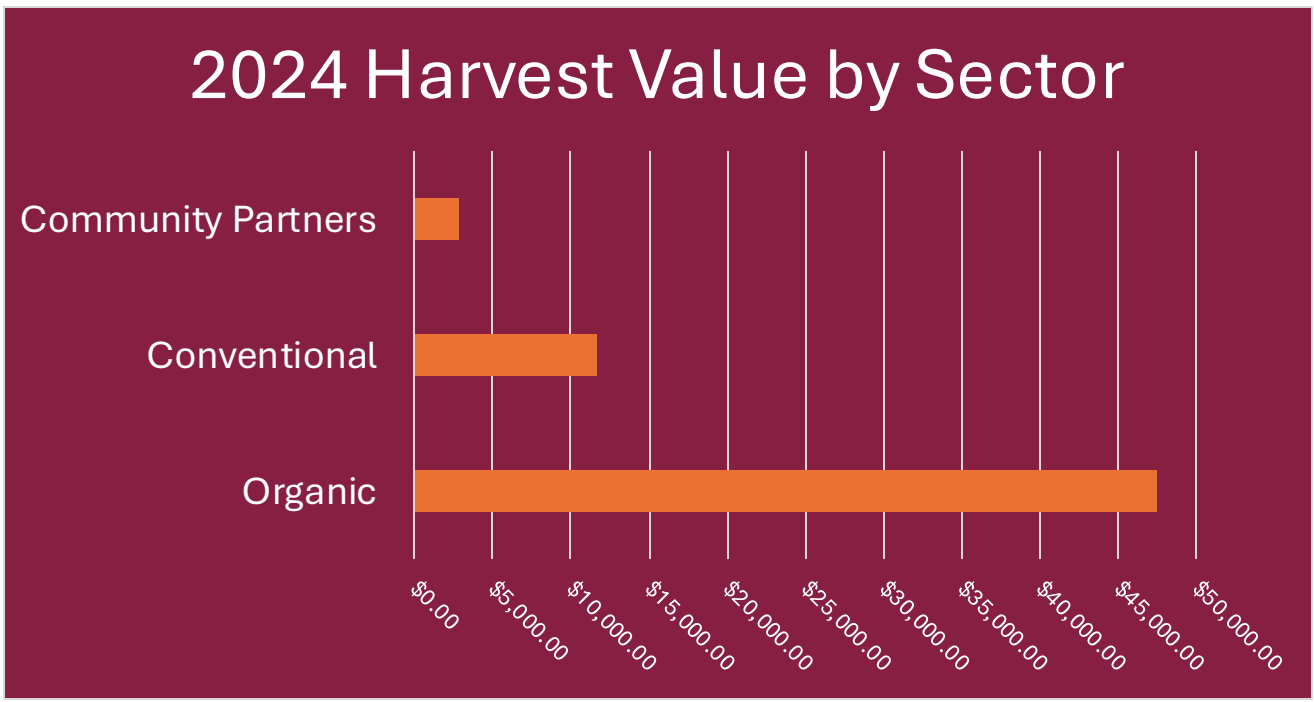
Overview

Total Harvest: 23,567.5 lbs.
Total Market Value: $61,939.62

Roughly **38** different varieties of vegetables, flowers, herbs, and fruits were grown this season at Homefield. **23,567.5 lbs.** of produce was harvested and delivered to campus Dining Centers, diverted to Campus Kitchen, or sold at our Homefield Farm Stands. Our organic produce comprised the greatest portion of production by weight and value.

Pages 7 and 8 outline the contributions of each produce sector.





Crop Production and Value

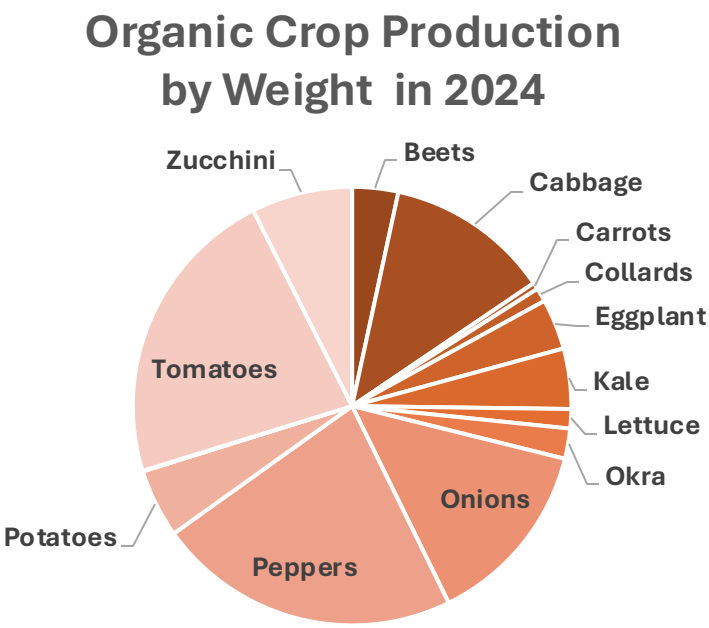
Organic

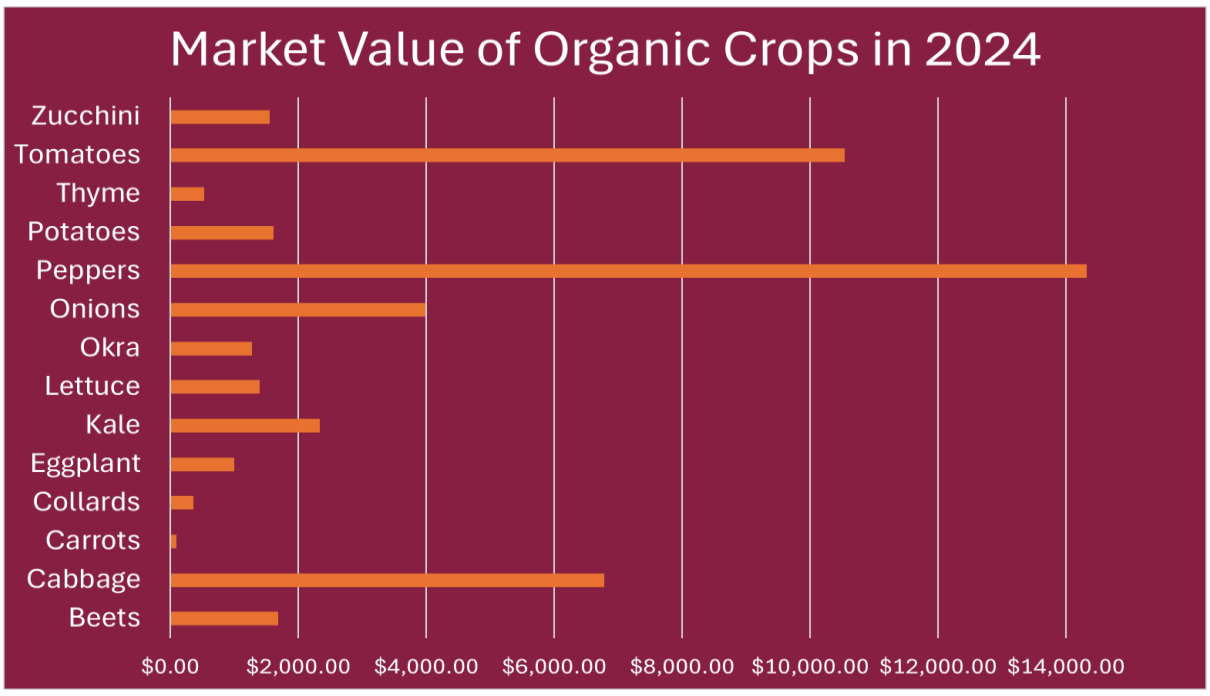
Organic Produce

Total Harvest: 15,720.2 lbs.

Market Value: $47,469.81

Roughly **25** different varieties of organic vegetables, herbs, and fruits were grown this season. **15,820.2 lbs.** of organic produce was harvested and delivered to campus dining centers. While **331.1** lbs. were sold at the on-campus farm stands. **Tomatoes, bell peppers,** and **yellow onions** comprised the greatest portion of production by weight.





Crop Production and Value

Conventional and Community Partners

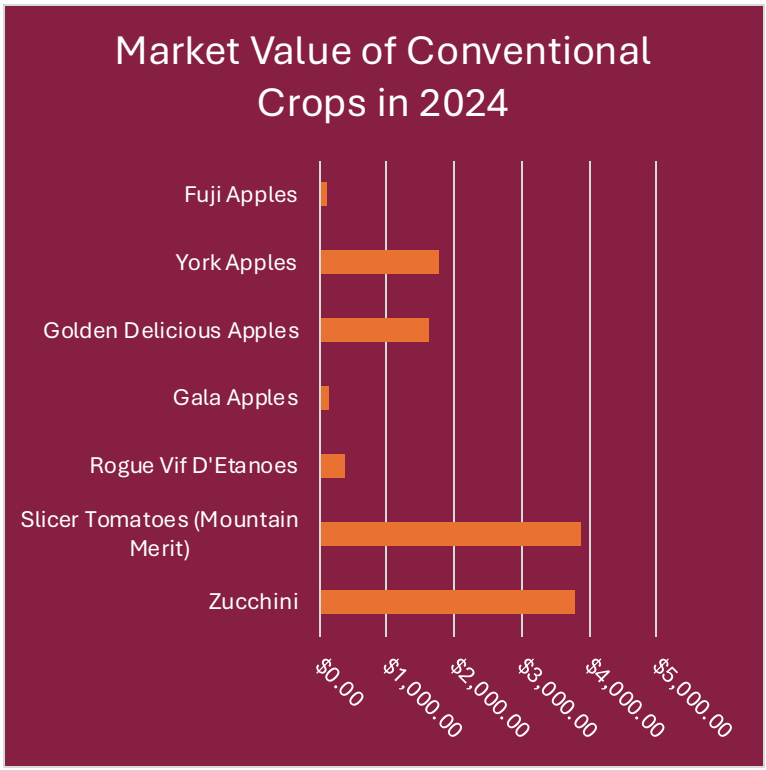
Conventional Produce

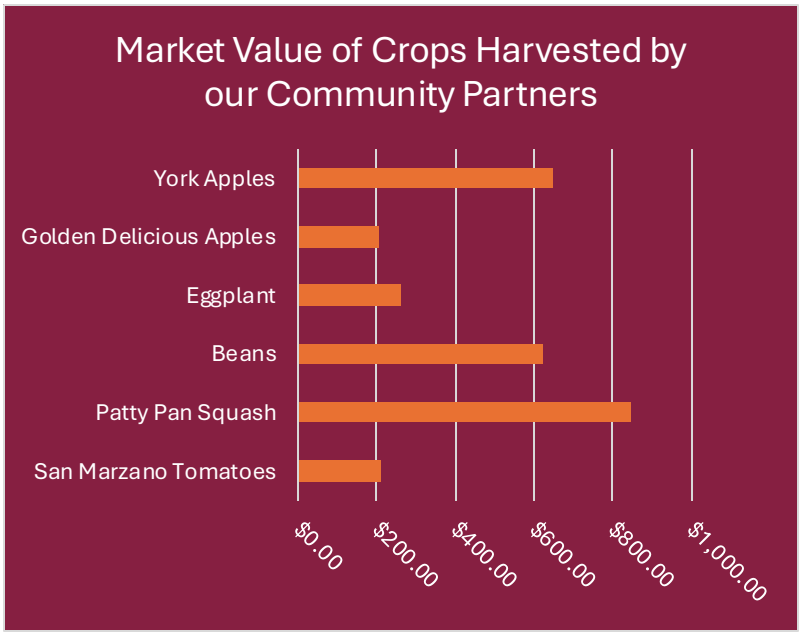
Total Harvest: 5998.03 lbs.

Market Value: $11,674.01

Roughly **seven** different varieties of conventional vegetables and fruits were grown this season. About **5667 lbs.** of conventional produce were harvested and delivered to dining centers and farm stands in 2024.

In addition, we harvested **12,000 lbs.** of conventional decorative pumpkins valued at **$15,000.00.** These pumpkins were distributed at our events and to our Dining Centers.





Community Partners

Total Harvest: 1749 lbs.

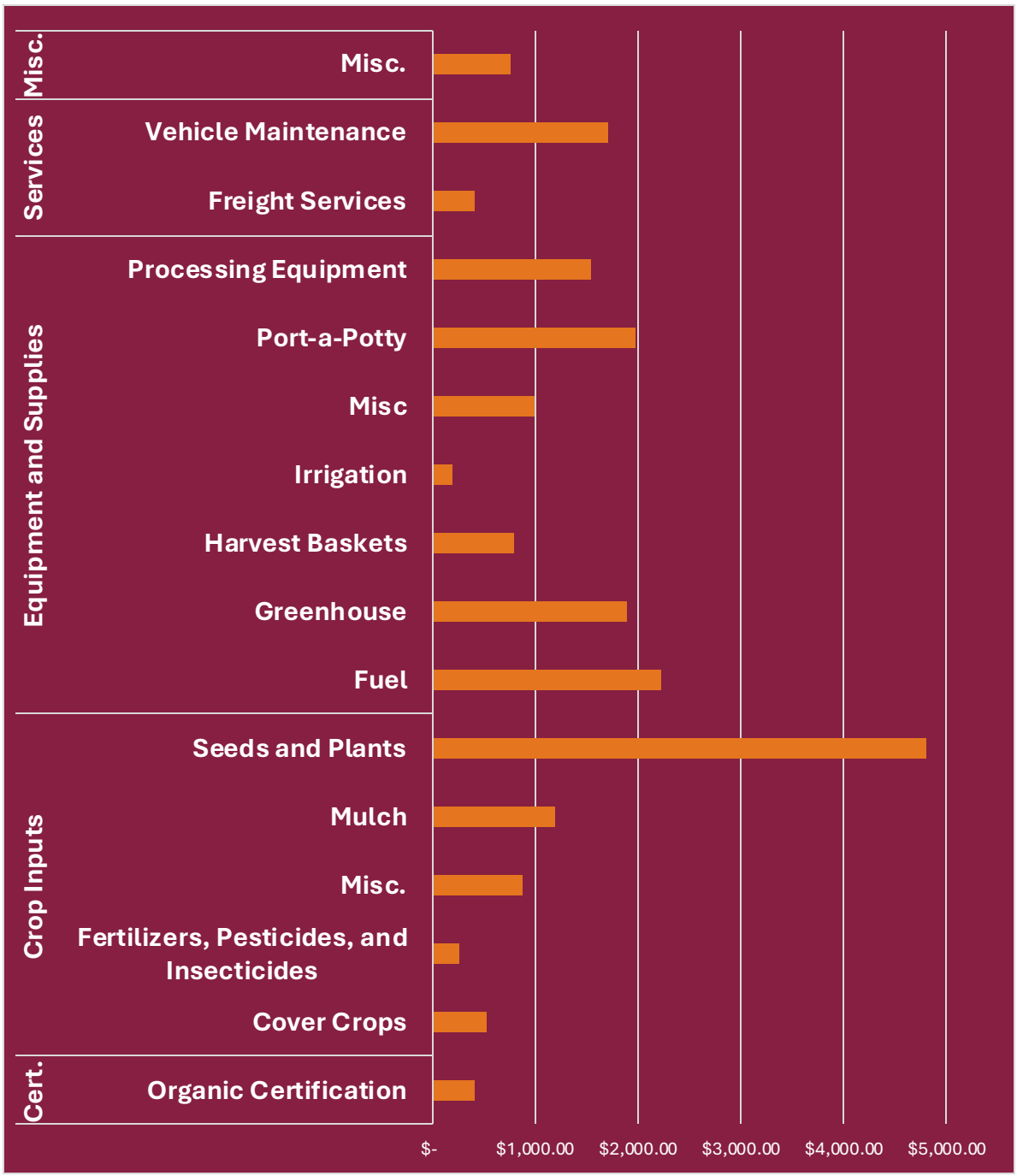
Market Value: $2,795.80

Roughly **six** different varieties of vegetables and fruits were donated to Campus Kitchen and The Market. This produce would have otherwise been placed in the compost.

Operating Expenses

Overview of Operating Expenses

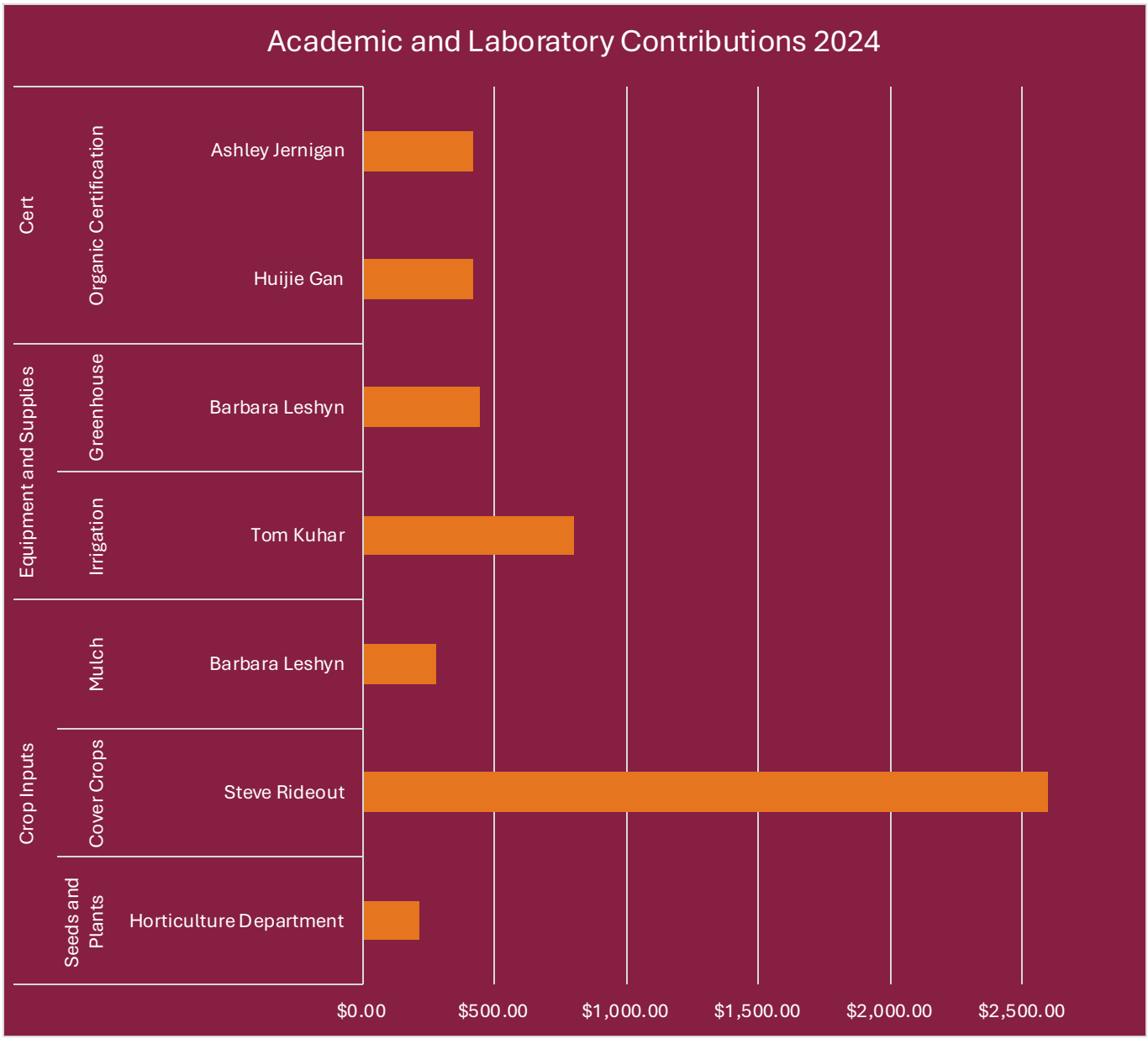
2024 Operating costs for Homefield Farm, from Dining Services, totaled **$20,646.52,** excluding labor. With labor, total operating costs were **$91,395.97.** A more detailed expense report can be found in the Appendix.



Operating Expenses

Research and Departmental Contributions

In addition to Dining operating expenses, the research groups and academic departments contributed **$5,162.56.** Steve Rideout and Barbara Leshyn also shared labor from their laboratories. Labor has not been included in this value. The cost of Organic Certification in 2024 was divided between two SPES researchers and the Dining Services department.



Student Engagement

Classes at the farm

Homefield Farm is host to several classes each semester. This past year we offered class tours and hands-on opportunities to eight classes.

Students in these courses were offered a walking tour of the farm. After completion, each class had a unique hands-on activity to complete. Activities ranged from weeding, to plastic removal, to planting.

Classes:

- Civic Agriculture ALS 2204
- Pest Management AT 0434
- Plant Pathology PPWS 4104
- Honors Service Learning UH 3204
- Food Justice Design UH 4504
- Food for Optimal Health HNFE 5354
- Floral Design HORT 2164
- Agricultural Technology

Fall Harvest Crew

During the heavy fall season, from August to November, a three-person student harvest crew is hired to work at Homefield Farm. These students are responsible for harvesting, processing produce and assisting with grounds upkeep. This is an opportunity that is shared with CALS students and student dining employees.

Student Engagement

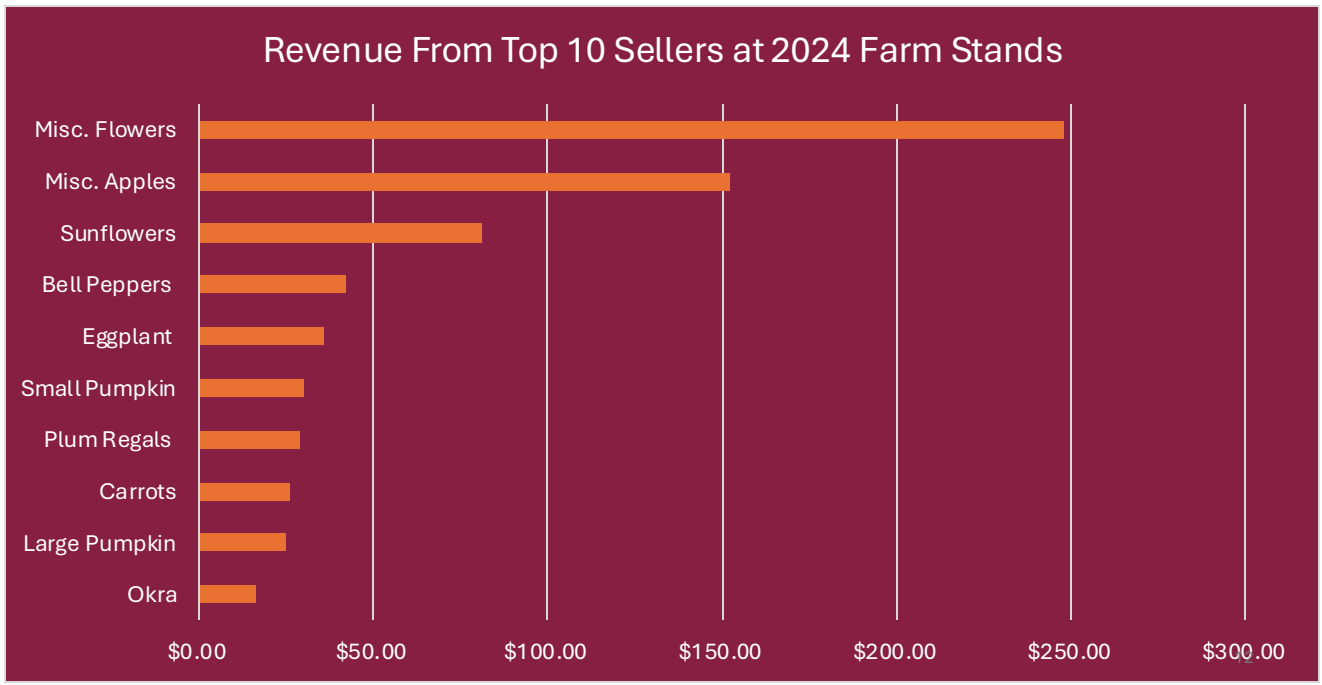
Farm Stands

On-campus farm stands take place monthly during the fall semester, through our harvest season. These stands provide everyone in the Virginia Tech community with the opportunity to enjoy Homefield produce in their own homes. This fall we expanded our farm stand reach to include both the Turner and Dietrick plazas. Times and dates vary to accommodate busy schedules. Patrons can use their meal plans or credit cards for produce purchases. The Sustainability Manager, Assistant Farm Manager, and Student Sustainability Interns operate farm stands.

Total Sales

Value: $743.80

Weight: 331.1



Student Engagement

Farm Stand Engagement

2021

Total Farm Stand Revenue: $551.30

Units Sold: 265

Total number of transactions: 100

Varieties Available: 20

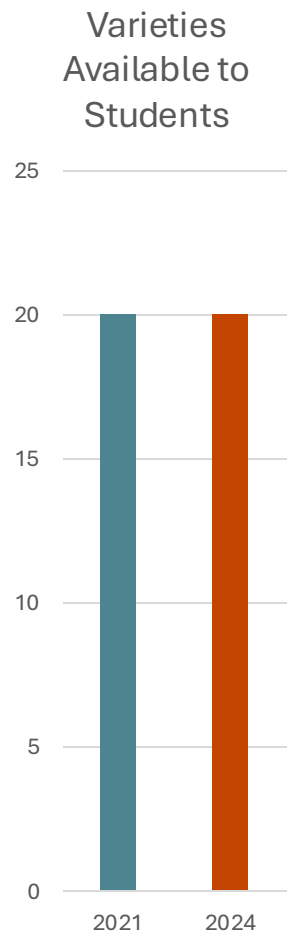
2024

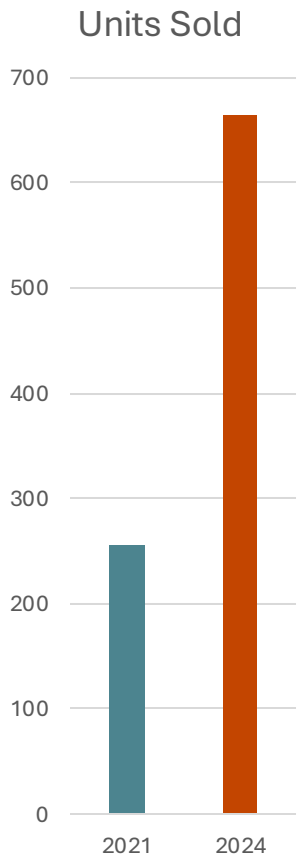
Total Farm Stand Revenue: $743.80

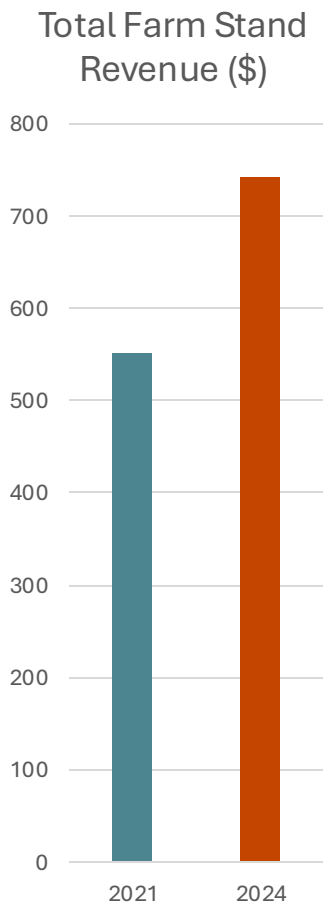
Units Sold: 665

Total number of transactions: 169

Varieties Available: 20







Staff Engagement

Dining Employees

Each summer, Dining Services sends an average of 6-8 employees daily to the farm to assist with general farm duties. The Summer Crew assists farm management with daily activities: weeding, planting, mulching, harvesting, processing, grounds maintenance, pruning, etc. Dining staff assists at the farm from mid-May to early-August.

Farm positions offer dining staff a unique opportunity to step outside of the dining centers during the summer months. These positions are highly sought after and typically result in a waiting list.

Community Engagement

Tours and Events

Tours and Events

- Women in Ag (extension) April ’24
- Southeast Produce Council June ‘24
- Culinary Camp July ’24
- Kentland Field Day Sept. ’24
- Fall Harvest Festival Oct. ’24
- Chili Challenge Oct. ‘24

Community Engagement

Tours and Events

Kentland Field Day:

Scheduled in September, this event features captivating wagon tours of Kentland and Homefield farms, engaging demonstrations on livestock and horticulture, and insightful presentations on the latest research and practices across these farms.

Fall Harvest Festival:

The Fall Harvest Festival is an on-campus event that serves as a platform for students to network with various agriculture related operations and sustainable departments, while enjoying fun activities such as pumpkin painting, music, field games, ice cream and an opportunity to try custom chef recipes using ingredients grown at Homefield Farm.

This is a great way for students to experience every stage of the food system here at Virginia Tech – from farm, to table, to waste bin! Come explore local and campus foods, sustainable majors, games, and more!

Community Engagement

Food Diversion

Today, 1 in 8 Virginians struggle with food insecurity. Campus Kitchen at Virginia Tech is a partnership between Virginia Tech Dining Services and VT Engage. In 2024, Homefield Farm began diverting excess produce, that otherwise would be composted, to Campus Kitchen.

We worked with volunteers and employees to harvest and divert this produce. In 2024, we salvaged **over 1700 lbs**. of produce that would have gone to waste. This produce was available to graduate and undergraduate students, who require food assistance, at The Market of Virginia Tech, as well as community members through Campus Kitchen. We hope to continue this program in 2025 to reduce our waste and help to reduce food insecurity in our community.

THE CAMPUS KITCHEN℠ at VIRGINIA TECH®

Sustainability & Homefield Farm

At Homefield Farm, we utilize sustainable agricultural techniques to produce healthy food while maintaining the integrity of our land. Homefield farm is the only university-owned farm in Virginia to hold a USDA Organic certification. To maintain our certification, we use all organic seeds, inputs, and techniques. We also follow specific protocols for washing and transporting produce.

As part of our management plan, we utilize cover cropping to manage our soil health and naturally deter weeds and pests. The flowers we plant, such as our marigolds and zinnias, are multipurpose - serving as a deterrent for pests, attracting pollinators, and drawing crowds at our farmstands. Other parts of our management plan include sourcing water from Tom's Creek, utilizing rotational production, and using companion planting methods. These efforts aim to reduce our environmental impact and grow quality organic produce.

Photo by Darren Van Dyke for Virginia Tech

On-Farm Research

Traditionally, research at Homefield Farm has been housed strictly in the conventional plots. However, two new professors joined the SPES team this year, Dr. Ashley Jernigan and Dr. Huijie Gan, who primarily focus on organic and sustainable production.

Huijie began two research studies in combination with our organic production. She conducted field studies on cabbage and carrots during the 2024 season. Huijie's lab concentrated their studies on soil health, focused on pest control.

Ashley plans to begin her research in the next growing season. She plans to collaborate with our organic planting plan, as well as our conventional researchers.

Conventional production is still heavily research based. Dr. Tom Kuhar, Dr. Steve Rideout and Dr. Bingyu Zhao are three of our main researchers at the farm. They concentrate on pests and diseases.

On-Farm Research

The plant pathology group conducted multiple trials at Homefield during the 2024 growing season. These trials consisted of measuring how effective certain fungicides were in controlling specific pathogens, studying plants that were resistant to some pathogens, as well as seed treatments for combating pathogens.

Crops used for these studies were:

- Broccoli (conducted by PhD Student Researcher, Carlos Saint-Preux)
  - This study focused on Alternaria Leafspot and head rot
  - The study consisted of 4 trials looking at cultivar resistance, as well as the effectiveness of conventional and organic fungicides on the pathogens.

- Tomatoes
  - 1 trial studying the effectiveness of newer biological fungicides for control of early blight.

- Squash
  - 1 trial studying the effectiveness of newer biological fungicides for control of powdery mildew.

- Pumpkins
  - 7 trials studying cultivar resistance to disease and performance.

- Edamame
  - 1 trial studying different seed treatments for resistance to pathogens.

Image by Steven White

On-Farm Research

The entomology department conducted several vegetable insect-pest management experiments during 2024. Many of these included insecticide evaluations such as lepidopteran pests, cucumber beetles, aphids, and Mexican bean beetles. Additionally, organic insecticides were utilized to calculate their effectiveness of flea beetle control on eggplant and Chinese cabbage.

Crops used for these studies:

- Sweet Corn (graduate student research, Brian Currin and Will Long)
- Cherry Tomatoes (collaboration with Food Science, Dr. Yun YinZ)
- Tomatoes, Eggplant, Chinese Cabbage, Cabbage, Broccoli, Squash, Cucumbers, Watermelon, Galia melon, and Snapbeans

Additionally, an evaluation of NewLeaf symbiotic bacteria for plant defense against insect pests was conducted by postdoctoral researcher, Ben Aigner, using melons, tomatoes, and snapbeans

The entomology team also conducted pollinator research on squash and pumpkins; lead by PhD researcher, Courtney Walls. As well as wheat seed treatments to suppress wireworm populations; led by PhD researcher, Hannah Swarm.

Improvements

Completed Projects

Each year, we have several ongoing projects at the farm. These projects run in combination with our production. To continue to improve upon Homefield Farm, Dining Services, The School of Plant and Environmental Science and our Homefield collaborators, work together to fund and complete farm goals.

Completed improvements this season:

- Water hydrants - Five new water hydrants were installed near the high tunnel and conventional storage. Funded by Tom Kuhar. These hydrants have allowed us to water our Horticulture flower beds without the need of a water truck. The storage hydrant supports biosecurity by limiting contact with conventional equipment and chemicals. This project has saved us countless hours of labor.

- Fertigator construction – Funded by Dining. The farm obtained supplies to build new risers that will allow us to seamlessly connect a fertigator to a plot's water system. The new risers allow us to quickly connect a fertigator to the regular irrigation system; this allows us to fertilize a specific plot without disturbing or contaminating our other fields.

- Fertilizer shed organization– Supported by the minorities club at VT. A team of student volunteers worked with farm staff to overhaul the fertilizer shed. The all-day event allowed us to thoroughly clean out the space and address any improper storage concerns. After the cleanout, farm employees built designated bays for organic fertilizers, to ensure separation from conventional products. Additionally, we installed physical barriers around the organic area.

Improvements

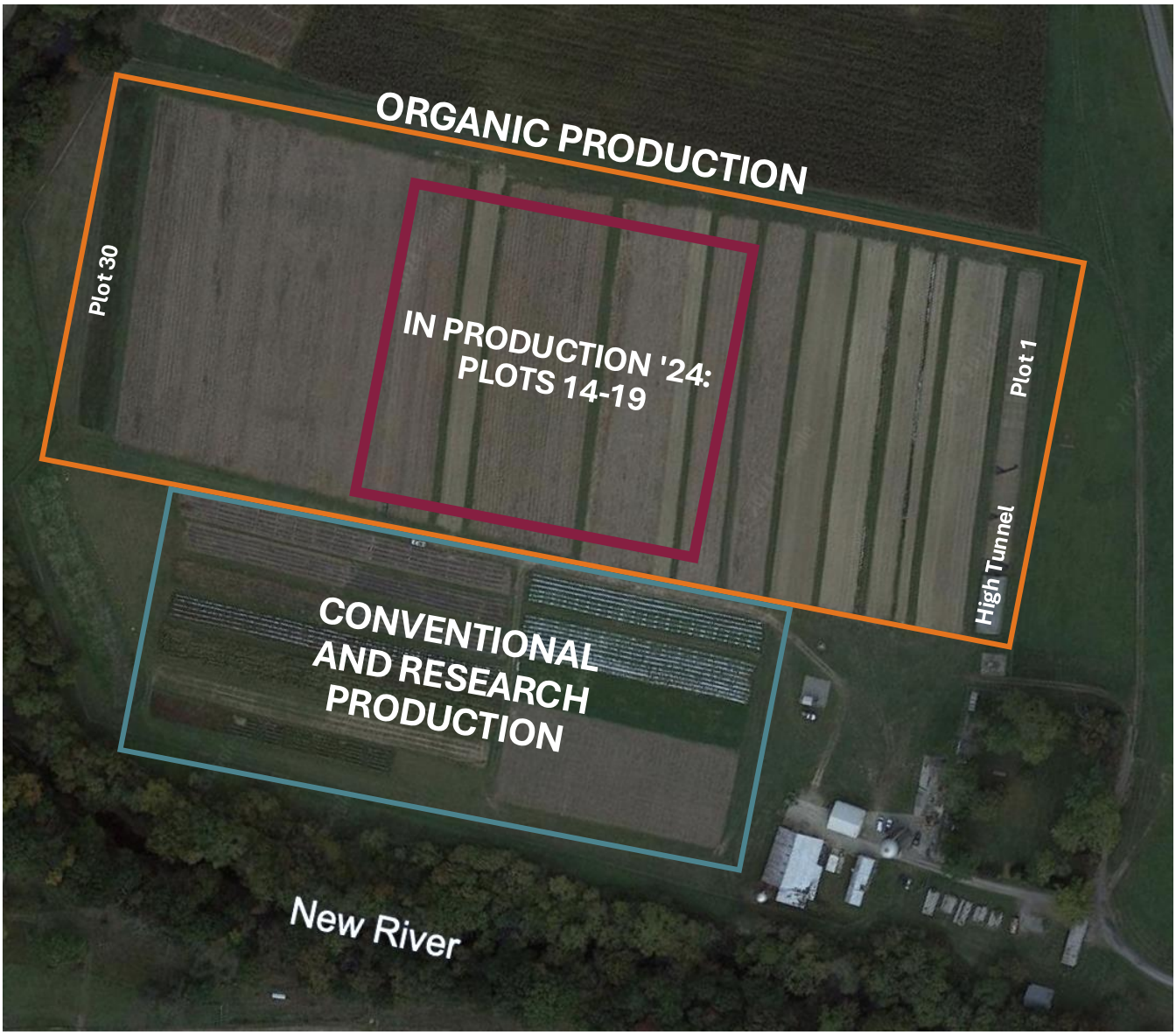
Completed Projects

- Signs – New directional signage, funded by SPES, was designed and installed at the entrance of Homefield and Kentland farms. These signs direct visitors to the two main farm locations and several sublocations of Kentland farm. This project has helped numerous visitors since their installation.

- Homefield Sign – In addition to our directional signs, Dining also added a new sign at the entry gate of Homefield. Part of this project included the construction of a raised flower box that the sign was installed inside of, funded by SPES. The box has been fitted with 2 solar lights to illuminate the sign at night. The new sign and the flower box, filled with flowers during the warm seasons, provide a more eye-catching entrance for all visitors of the farm.

Appendix

Farm Map



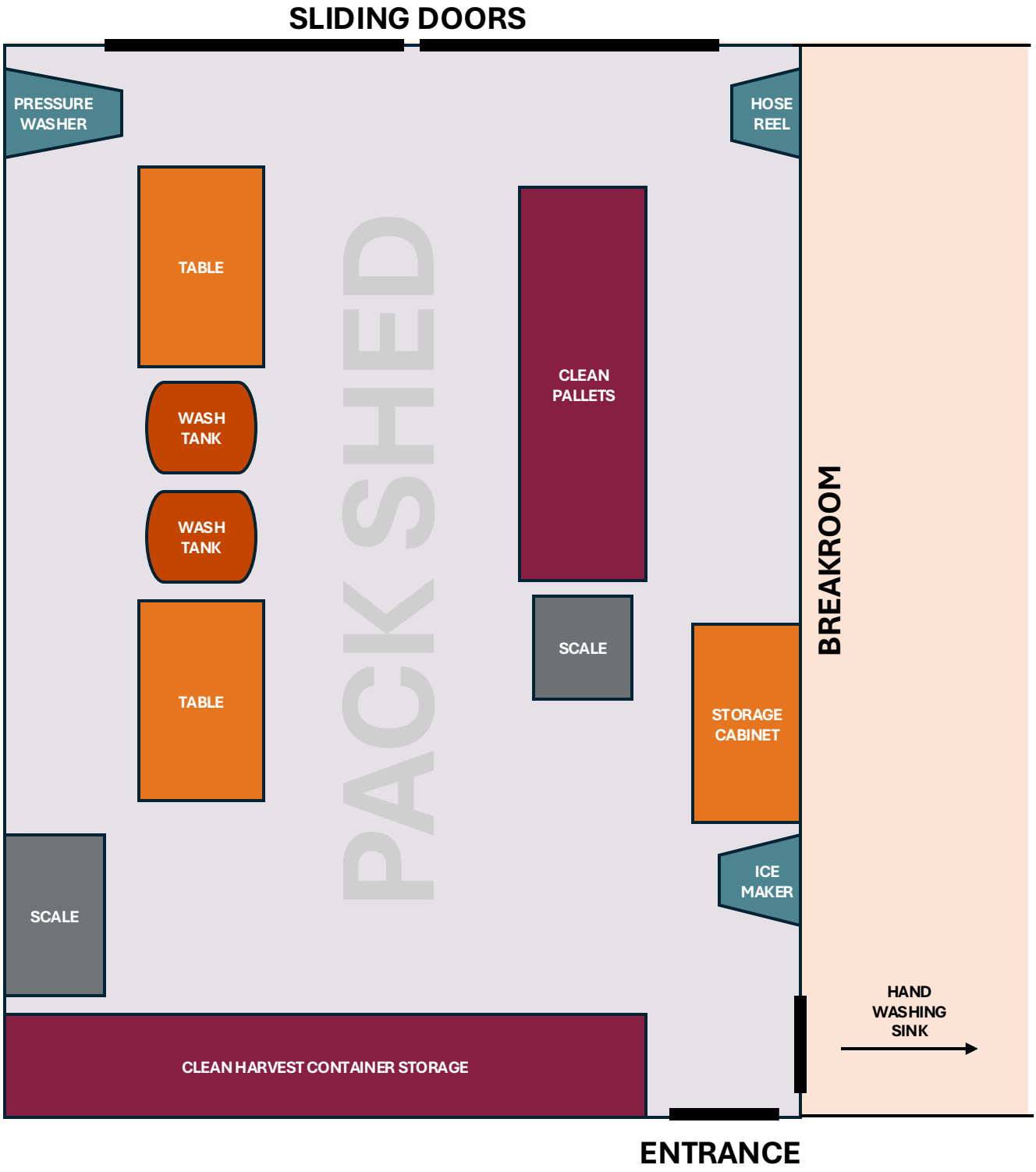
Appendix

Field Layout

Homefield Farm Field Layout 2024 by Plot	
Plot #s	**Crops and Variety**
30	Asparagus
29 & 28	Rye
27	Empty
26	Buckwheat
25	Empty
24	Buckwheat
23	Empty
22	Blueberries - Elizabeth, Duke, & Elliot
21	Sunflowers
20	Rye
19	Carrots (Caravel), Research Cabbage (Capture), Cover (Summer Max), Eggplant (Traviata), Red Bell Peppers (Olympus), Granadero Tomatoes, Kale (Black Magic)
18	Red Onions (Cabernet), Yellow Onions (Calibra), Cover (Summer Max), Cabbage (Farao), Cabbage (Wakefield)
17	Okra (Clemson Spineless), Lettuce (Chalupa), Cover (Summer Max), Russet Potatoes (extra), Russet Potatoes (Gold Rush)
16	Russet Potatoes (Gold Rush), Cover
15	Poblano peppers (Bastan), Jalapenos (Black Magic), Habanero Peppers, Thai peppers, Carolina Reapers, Eggplant (Traviata), Zinnias (Jim Baggett's Choice Mix), Red Bell Peppers (Olympus), Zucchini (Dunja)
14	Naval Carrots, Thyme (Summer), Marigolds (Pinwheel Marigold), Beef Steak (Carbon), San Marzano, Ganadero
13	Buckwheat
12 & 11	Rye
10 & 9	Buckwheat
8, 7, & 6	Cover (Summer Max)
5 & 4	Buckwheat, Sunn Hemp Mix
3	Cover (Summer Max)
2	Rye
1 (High Tunnel)	Radish (Pink Beauty), Turnips (Purple Top White Globe), Chives (Staro), Spinach (Equinox), Babyleaf Lettuce (Marilisa), Kohlrabi (Azur Star), Kohlrabi (Konan), Snow Peas (Oregon Sugar Pod II)

Appendix

Pack Shed Layout



Appendix

2024 Total Operating Costs Excluding Labor

Category	Subcategory	Contributor	Value in Dollars	Subcategory total	Category Total
Certifications	Organic Certification	Dining Services	$416.66		
		Ashley Jernigan	$416.66		
		Huijie Gan	$416.66	$1,249.98	**$1,249.98**
Crop Inputs	Cover Crops	Dining Services	$527.30		
		Steve Rideout	$2,598.00	$3,125.30	
	Fertilizers, Pesticides, and Insecticides	Dining Services	$263.75	$263.75	
	Misc.	Dining Services	$883.90	$883.90	
	Mulch	Dining Services	$1,190.00		
		Barbara Leshyn	$275.00	$1,465.00	
	Seeds and Plants	Dining Services	$4,812.00		
		Horticulture Department	$211.58	$5,023.58	**$10,761.53**
Equipment and Supplies	Fuel	Dining Services	$2,227.64	$2,227.64	
	Greenhouse	Dining Services	$1,897.38		
		Barbara Leshyn	$444.66	$2,342.04	
	Harvest Baskets	Dining Services	$791.50	$791.50	
	Irrigation	Tom Kuhar	$800.00		
		Dining Services	$199.62	$999.62	
	Misc	Dining Services	$1,003.36	$1,003.36	
	Port-a-Potty	Dining Services	$1,982.60	$1,982.60	
	Processing Equipment	Dining Services	$1,547.85	$1,547.85	**$10,894.61**
Services	Freight Services	Dining Services	$414.30	$414.30	
	Vehicle Maintenance	Dining Services	$1,719.06	$1,719.06	**$2,133.36**
Misc.	Misc.	Dining Services	$769.60	$769.60	**$769.60**

2024 Total Operating Costs Excluding Labor: $25,809.08

Appendix

2024 Harvest Log – Organic Produce

Homefield Farm Organic Produce Harvest Log 2024			
Date	**Crop**	**Group**	**Weight (in lbs.)**
5/31 to 7/11	Kale (Dino)	Kale	704.2
6/4 to 6/18	Beets	Beets	537.4
6/11 to 6/26	Collards	Collards	160.8
6/28	Cabbage (Farao)	Cabbage	240.8
7/1	Romaine Lettuce	Lettuce	225.8
7/2 to 8/27	Okra	Okra	352
7/3	Cabbage (Wakefield)	Cabbage	400.2
7/10	Research Cabbage	Cabbage	1278
7/12 to 8/26	Zucchini (Dunja)	Zucchini	1178.4
7/22 to 9/20	Tomatoes (Granaderos)	Tomatoes	3265.6
7/22 to 10/9	Eggplant	Eggplant	589.8
7/24 to 10/9	Jalapeno Peppers	Peppers	788.6
7/25	Red Onions	Onions	900
7/30 to 8/27	Thyme	Thyme	7.4
8/1	Yellow Onions	Onions	1294
8/2	Carrots (Naval)	Carrots	62.2
8/6 to 8/7	Russet Potatoes	Potatoes	800
8/7 to 8/16	Tomatoes (San Marzano)	Tomatoes	266.2
8/14 to 10/7	Poblano Peppers	Peppers	1147.8
8/21 to 10/9	Bell Peppers	Peppers	1604.8
8/28	Carrots (Caravel)	Carrots	15.6
10/9	Habanero Peppers	Peppers	0.4
10/9	Thai Peppers	Peppers	0.2

Organic Produce Total Harvest Weight: 15,820.2 lbs.

Appendix

2024 Harvest Log – Conventional and Community Partners

Homefield Farm Conventional Produce Harvest Log 2024		
Date	**Crop**	**Weight (in lbs.)**
7/8 to 8/7	Zucchini	2600.2
8/28 to 9/24	Slicer Tomatoes (Mountain Merit)	1094.3
9/19	Rogue Vif D'Etanoes	193.8
9/16	Gala Apples	100
9/16	Golden Delicious Apples	1000
10/22	York Apples	950
10/22	Fuji Apples	60

Conventional Produce Total Harvest Weight: 5998.3 lbs.

Homefield Farm Community Partners Produce Harvest Log 2024			
Date	**Crop**	**Conventional or Organic**	**Weight (in lbs.)**
8/27	San Marzano Tomatoes	Organic	119
8/27	Patty Pan Squash	Conventional	674
8/21	Beans	Conventional	325
9/18	Eggplant	Conventional	154
9/16	Golden Delicious Apples	Conventional	128
10/22	York Apples	Conventional	349

Community Partners Total Harvest Weight: 1749 lbs.

Appendix

Crop Production and Value - Organic

2024 Homefield Farm Organic Crop Production and Value			
Crop	**Weight (in lbs.)**	**Price in $/lb**	**Total Value in $**
Kale (Dino)	704.2	$3.33	$2,341.47
Beets	537.4	$3.13	$1,679.38
Collards	160.8	$2.24	$359.39
Cabbage (Farao)	240.8	$3.54	$851.63
Romaine Lettuce	225.8	$6.17	$1,393.19
Okra	352	$3.61	$1,270.72
Cabbage (Wakefield)	400.2	$3.54	$1,415.37
Research Cabbage	1278	$3.54	$4,519.86
Zucchini (Dunja)	1178.4	$1.32	$1,555.49
Tomatoes (Granaderos)	3265.6	$2.99	$9,747.82
Eggplant	589.8	$1.69	$994.80
Jalapeno Peppers	788.6	$1.70	$1,340.62
Red Onions	900	$1.99	$1,791.00
Thyme	7.4	$71.04	$525.70
Yellow Onions	1294	$1.70	$2,199.80
Carrots (Naval)	62.2	$1.29	$80.24
Russet Potatoes	800	$2.01	$1,610.67
Tomatoes (San Marzano)	266.2	$2.99	$794.61
Poblano Peppers	1147.8	$2.97	$3,412.79
Bell Peppers	1604.8	$5.96	$9,559.26
Carrots (Caravel)	15.6	$1.29	$20.12
Habanero Peppers	0.4	$11.54	$4.62
Thai Peppers	0.2	$6.48	$1.30

Organic Produce Total Harvest Value: $ 47,469.81

Appendix

Crop Production and Value - Conventional and Community Partners

2024 Homefield Farm Conventional Crop Production and Value			
Crop	**Weight (in lbs.)**	**Price in $/lb**	**Total Value**
Zucchini	2600.2	$1.45	$3,778.96
Slicer Tomatoes (Mountain Merit)	1094.3	$3.54	$3,873.82
Rogue Vif D'Etanoes	193.8	$2.00	$387.60
Gala Apples	100	$1.34	$134.00
Golden Delicious Apples	1000	$1.62	$1,615.00
York Apples	950	$1.86	$1,763.83
Fuji Apples	60	$2.01	$120.80

Conventional Produce Total Harvest Value: $11,674.01

2024 Homefield Farm Community Partner Crop Production and Value				
Crop	**Conventional or Organic**	**Weight (in lbs.)**	**Price in $/lb**	**Total Value**
San Marzano Tomatoes	Organic	119	$1.79	$212.61
Patty Pan Squash	Conventional	674	$1.25	$844.75
Beans	Conventional	325	$1.92	$624.00
Eggplant	Conventional	154	$1.69	$259.75
Golden Delicious Apples	Conventional	128	$1.62	$206.72
York Apples	Conventional	349	$1.86	$647.98

Community Partners Total Harvest Value: $2,795.80

Appendix

Farm Stand Sales

Homefield Farm Stand Sales Data Fall 2024				
Product	**Price per Unit**	**Unit**	**Total Quantity Sold**	**Total Revenue**
Mini Pumpkin	$1.00	Each	1	$1.00
Thyme	$2.00	Bundle	3	$6.00
Red/Yellow Onion	$1.00	Each	8	$8.00
Patty Pan Squash	$3.00	Each	3	$9.00
Jalapenos	$0.40	Each	28	$11.20
Poblanos	$0.60	Each	19	$11.40
Medium Pumpkin	$4.00	Each	3	$12.00
Okra	$1.80	Dozen	9	$16.20
Large Pumpkin	$5.00	Each	5	$25.00
Carrots	$1.00	4 Pieces	26	$26.00
Plum Regals	$0.50	Each	58	$29.00
Small Pumpkin	$3.00	Each	10	$30.00
Eggplant	$1.50	Each	24	$36.00
Bell Peppers	$1.00	Each	42	$42.00
Sunflowers	$3.00	Stem	27	$81.00
Misc. Apples	$1.00	Each	152	$152.00
Misc. Flowers	$1.00	Stem	248	$248.00
TOTALS			665	$743.80

Total Units Sold: 665

Total Revenue: $743.80