



VIRGINIA TECH DINING SERVICES FARM

2015 ANNUAL REPORT



Acknowledgments

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Photographs courtesy of Victoria Betzel, Rial Tombes Carver, and Alex Hessler.

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EXECUTIVE SUMMARY

The Dining Services Farm (DSF) is a collaboration between Virginia Tech Dining Services, The Department of Horticulture, and the College of Agriculture and Life Sciences (CALs). The DSF began in 2009 as a small garden at Kentland Research Farm to provide experiential learning opportunities for students in the Civic Agriculture and Food Systems Minor and grow fresh produce for Dining Services. The mission of the DSF is to promote sustainable agriculture and community food systems by serving as a resource for education, research, and outreach for Virginia Tech and the Blacksburg community. 2015 marked the DSF's 7th year as an educational farm-to-campus program providing hands-on exposure to sustainable food and agriculture in the field, the classroom, and the dining hall.

The Sustainable Agriculture Practicum (HORT 2984) was taught in spring and fall semesters, engaging students in a unique field-based learning experience growing and harvesting fresh vegetables, fruit, and herbs at the DSF and Urban Horticulture Center. Additionally, students from multiple departments across campus participated in tours, hands-on activities, and independent projects at the DSF. The DSF hosted six tours for community and agricultural groups, and was featured in six popular print and Internet publications and three professional presentations.

Several improvements to facilities and infrastructure at the DSF in 2015 made farm operations and educational activities more efficient and effective. Expansions to the washing and packing shed and the purchase of a mechanical brusher washer improved post-harvest handling of many vegetable crops. Future improvements set in motion in 2015 will allow for the installation of a walk-in cooler, ice machine, salad greens spinner, and refrigerator. A collaborative project with students and faculty in the Department of Building Construction provided the impetus for plans to replace a dilapidated barn used as community and storage space with a new three-sided pole barn.

2015 was the most productive growing season at the DSF yet, with **48,316 pounds** of produce valued at **\$40,152.14** harvested and served on campus in Virginia Tech's award-winning dining halls. Total operating costs, excluding salaries, were **\$39,581.12**.

ABOUT THE DINING SERVICES FARM

History of the Dining Services Farm

The DSF began in 2009 as a educational farm-to-campus program complimenting an interdisciplinary, experiential-based sustainable agriculture and food systems minor being planned in the College of Agriculture and Life Sciences (CALs). A partnership between CALs, Dining Services, Kentland Research Farm, and the Department of Horticulture was formed to implement a student educational farm at Kentland. A USDA Higher Education Challenge grant, “Restoring Community Foodsheds: A Multidisciplinary Curriculum Translating Science into Practical, Innovate and Sustainable Solutions for Economic Viability, Food Security and Health” was awarded in 2009 – 2013 (Award No. 2009-38411-19770) to develop the Civic Agriculture and Food Systems Minor in CALs. Grant funds supplied seeds and equipment and supported a Farm Manager-Educator, a part-time Foodshed Liason between the farm and Dining Services, and three hourly student wage farm assistants. In 2009, a quarter-acre garden at Kentland Farm was designated as a site for experiential learning for students in the minor and the production of fresh produce for Dining Services.

By 2011, the program had grown from its original site to encompass more than two acres. Procurement of produce from the farm to campus was facilitated by a student manager hired by Dining Services, along with the Dining Services Sustainability Coordinator. The Farm Manager-Educator and the Dining Services Sustainability Coordinator participated in curriculum development for the minor and facilitated student volunteering at the farm. Dining Services furnished a farm crew of salaried staff from May to August. By 2014, the farm had increased to six acres, and the Farm Manager-Educator position was transitioned to a joint academic-auxiliary instructor-level faculty position financially supported by Dining Services, CALs, and the Department of Horticulture. In May 2014, with funding from CALs and Dining Services, a high tunnel was constructed at the Urban Horticulture Center (UHC) and utilized for summer tomato and winter salad production.



Governors School for Agriculture students at the DSF.

Student Engagement

The Sustainable Agriculture Practicum was developed in Fall 2014 as a hands-on field course in organic and sustainable vegetable production that takes place at the DSF and Urban Horticulture Center. The course has been offered every semester since Fall 2014. The DSF continues to support field-based learning activities and independent projects for students in the CAFS Minor, and provides regular farm tours to many classes throughout CALS. Weekend volunteer workdays expose students from across campus to the excitement of working with their hands and contributing to the Virginia Tech food system.



Rose Martin, Dining Services pastry chef, admiring apples at Kentland Farm orchards.

Sustainable Dining

Students participate in the DSF every day when they eat farm-to-campus produce in Virginia Tech's dining halls. Since 2009, the DSF has provided approximately 180,000 pounds of sustainably grown vegetables, fruit, and herbs to all five dining halls and Personal Touch Catering. Signs, photographs, featured dishes, and special events highlighting the DSF help students recognize the interconnectedness of sustainable food and farming with the wellbeing of the Virginia Tech community.

Interdisciplinary Research

The DSF is a unique field laboratory for interdisciplinary research on sustainable agricultural production practices and agroecology. As a working, diversified horticulture farm, the DSF is a model agricultural system for conducting applied research in a real-world setting. Students and faculty in multiple departments in CALS are encouraged to integrate experiments into production fields, and may receive technical support from DSF personnel.

Community Outreach and Extension

As a highly visible collaborative project on campus and in the community, the DSF is medium for promoting public awareness and understanding of sustainable agriculture and community food systems. The DSF strives to demonstrate agricultural practices that are environmentally sound, socially just, and economically viable. The DSF actively builds relationships with state and local farmers, master gardeners, extension agents, and professionals through tours and presentations. The dissemination of knowledge generated by the DSF supports the advancement the sustainability and profitability of small-scale agriculture in Virginia. The farm-to-campus partnership that brings thousands of pounds of fresh produce into Virginia Tech dining halls is a model for institutional sourcing of campus-grown food nationwide.

DINING SERVICES FARM MISSION

- Provide experiential learning opportunities in sustainable agricultural production for Virginia Tech students through hands-on participation at the Dining Services Farm.
- Educate Virginia Tech students about sustainable agriculture and food systems by serving produce grown on the Dining Services Farm in Virginia Tech dining halls.
- Foster collaborative, interdisciplinary research and education around food and agriculture among Virginia Tech students, staff, and faculty.
- Promote awareness of sustainable agriculture and community food systems through community outreach and public education.



Virginia Tech Summer Academy: Animal and Poultry Sciences Track taste-testing sweet corn.

2015 OPERATIONS AND ORGANIZATIONAL STRUCTURE

Operations

The DSF manages six acres of land at Virginia Tech's Kentland Research Farm for the production of fresh vegetables, fruit, and herbs using organic practices. Approximately four of the six acres are cultivated, with 2.6 acres in production in 2015. An additional half-acre of land under conventional management at Kentland Farm was used to produce tomatoes, winter squash, and pumpkins. Facilities used by the DSF include a 27,000 ft² open-sided barn, a 700 ft² washing and packing shed, and a repurposed milking parlor used for storing tools. Tractors used on the DSF to conduct tillage and other field operations are owned and maintained by CALS, and operated by Kentland Farm staff and the DSF farm manager. Tractor-drawn implements used on the DSF are owned by CALS and the Department of Horticulture. A 2,888 ft.² high tunnel located at the UHC is used for season-extended vegetable production and transplant propagation. Department of Horticulture greenhouses located on Virginia Tech's main campus are also used for transplant propagation. An additional high tunnel was purchased in Summer 2015 to be located at Kentland Farms, but will not be constructed until Summer 2016.

During the spring and fall semesters, students in the Sustainable Agriculture Practicum provide labor for vegetable production and harvest. A twelve-person crew consisting of Dining Services staff works at the farm from late May to early August. In return for financial support to the DSF, all produce is provided to Dining Services at no cost and is distributed to dining halls across the Virginia Tech campus.

Organizational Structure

A diverse group of faculty, staff, and students from Virginia Tech Dining Services, The Department of Horticulture, and the CALS collaborate to achieve the multi-faceted objectives of the DSF. Personnel in CALS and the Department of Horticulture oversee crop production, manage facilities and equipment use and maintenance, and facilitate student involvement in educational opportunities at the farm through courses, tours, and volunteer events. Personnel in Dining Services coordinate crop production planning with chefs and procurement administrators, conduct farm produce pick-up, processing and storage, and delivery to dining halls, oversee Dining Services staff labor at the farm, and facilitate media outreach to the Virginia Tech student body about the DSF. The DSF is overseen by the **Horticulture-Dining Services Collaboration Steering Committee**, which is comprised of representatives from Horticulture, Dining Services, and CALS, and convenes twice annually. Horticulture and Dining Services split-fund an instructor-level faculty position (Alex Hessler) to manage crop production at the DSF and teach courses in the Department of Horticulture.

Name	Title	Role with DSF
Rial Carver	Sustainability Coordinator, Dining Services	Coordinates produce distribution in Dining Services; outreach; coordinates DSF farm crew.
Susan Clark	Associate Professor, Horticulture Director, CAFS Minor	Coordinates partnership with CAFS minor.
Ted Faulkner	Director, Dining Services	Director of Dining Services.
Roger Harris	Department Head, Horticulture	Oversees Horticulture resource allocation.
Bill Hess	Associate Director, Dining Services	Oversees Dining Services resource allocation.
Alex Hessler	Instructor, Director of DSF, Horticulture	Directs DSF crop production; supervises DSF farm crew; teaches Sustainable Ag. Practicum
John James	Urban Horticulture Center Facilities Manager, Horticulture	Manages Urban Horticulture Center Facilities; assists with high tunnel infrastructure.
Dwight Paulette	College Farm Coordinator, CALS	Coordinates Kentland Farm operations and resources.
Anthony Purcell	Assistant Director for Southgate, Dining Services	Oversees DSF produce distribution; coordinates Dining Services resource allocation
Jon Wooge	Kentland Farm Manager, CALS	Manages Kentland Farm staff and operations.
Dining Services Farm Crew	N/A	Assist with vegetable production and harvest, May – Aug.
Sustainable Ag. Practicum	N/A	Assist with vegetable production and harvest, Sept–Nov, March – May.



The 2015 summer Dining Services staff farm crew with the year’s garlic harvest.

2015 HARVEST AMOUNTS AND MARKET VALUE

Market value is determined as the price typically paid by Dining Services to the produce vendor Produce Source Partners (PSP). See Appendix for detailed report of harvest and value by individual crop.

	Pounds Harvested	Market Value
Vegetables	42,312.25	\$30,342.29
Fruit	5,011.50	\$3,014.80
Herbs	992.40	\$6,795.06
<u>Total</u>	48,316.15	\$40,152.14

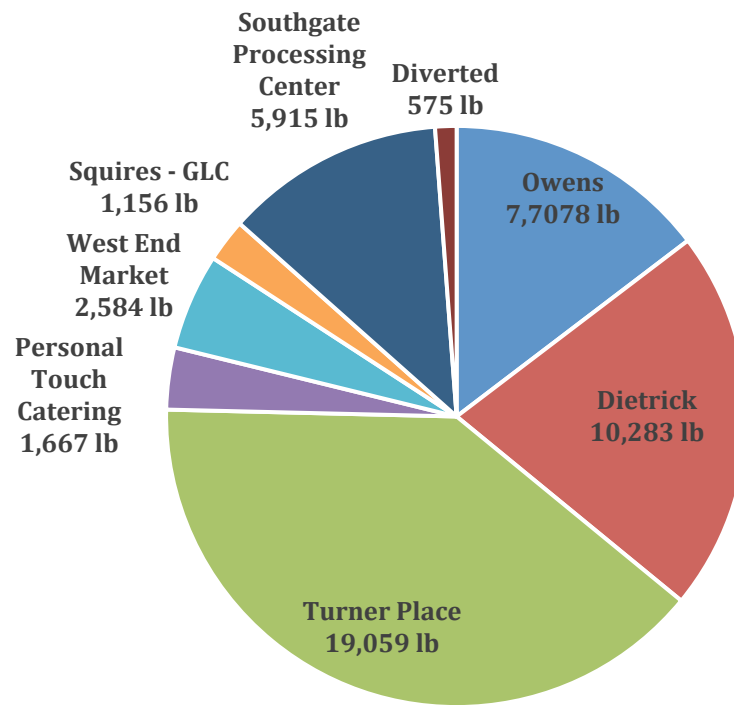
2015 EXPENDITURES

Total operating expenses for 2015 are listed below by category. See Appendix for separate expense reports for Dining Services and Horticulture.

Seeds	\$4,850.76
Supplies	\$7,262.40
Tools and Equipment	\$11,761.80
Furniture	\$300.79
Fuel	\$538.17
Moveable High Tunnel	\$14,867.20
<u>Total Operating Expenses</u>	\$39,581.12



2015 PRODUCE DISTRIBUTION SUMMARY



From left to right: Chef de Cuisine Mark Badger, and Executive Chefs Mark Bratton, Mark Moritz, John Scherer, and Randy Van Dyke

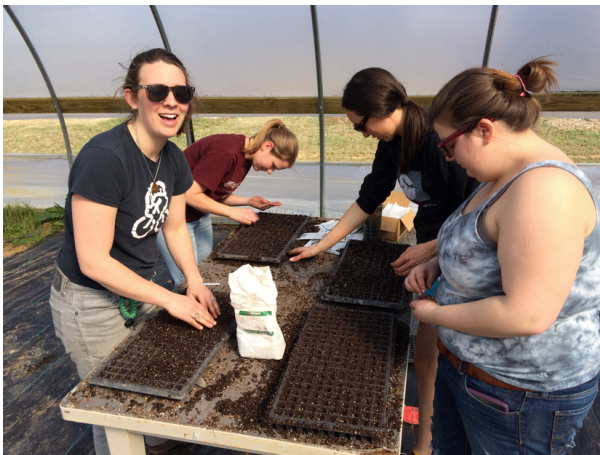
STUDENT ACADEMIC PARTICIPATION

The Sustainable Agriculture Practicum: HORT 2984; 2 credits.

The Sustainable Agriculture Practicum was offered as a special studies course in the Department of Horticulture in spring and fall of 2015, and was approved as an official course, **HORT 2834; 3 credits**, for Spring 2016. In 2015, 17 students representing 11 different majors enrolled in this field-based experiential course located at the DSF. The course meets from March to May in the spring semester and August to November in the fall semester. Students participate in all aspects of operating the farm, including plant propagation, seeding and planting, cultivation, harvest, and post-harvest handling. Daily activities are accompanied by lectures, discussions, and field walks to explore the principles of organic and sustainable crop production in greater detail. As the DSF continues to evolve and grow, students are active agents in shaping and improving the DSF production site and community space. In 2015, Practicum students installed lockers and sinks, built tool racks, and configured new equipment in the packing shed for more efficient produce washing and handling.

The Sustainable Agriculture Practicum is a unique experience at Virginia Tech, valuable to students of diverse backgrounds and aspirations. Students pursuing a professional career in a related agricultural field gain an appreciation for the practical challenges and opportunities of sustainable agriculture and food systems. A few students have gone on to work for local horticultural farms. For many, the Practicum builds confidence in their ability to apply newly learned skills to solve real-world challenges. All of the students have grown in their sense of ownership and agency as member of the Virginia Tech community.

The DSF engages students in other academic programs and courses in CALS through tours, activities, and projects. The DSF is a principle community partner to the **Civic Agriculture and Food Systems (CAFS) Minor**, serving as a field-site for experiential learning and independent research projects. In 2015, Chris Youngs, Agricultural Sciences '15, partnered with the DSF to conduct his CAFS Minor capstone project by restoring two antique Allis Chalmers G cultivating tractors.



Students in Organic Vegetable Production and the Sustainable Agriculture Practicum helping with planting and harvesting.

In Spring 2015, the DSF farm manager partnered with faculty in the Department of Building Construction (DBC) in CAUS to engage students in that department in a structural analysis of a barn at the DSF as a senior capstone project. The findings of that analysis, along with recommendations made by DBC faculty and students, provided the impetus for the pursuit of renovations of DSF-Kentland Farm facilities in 2016.

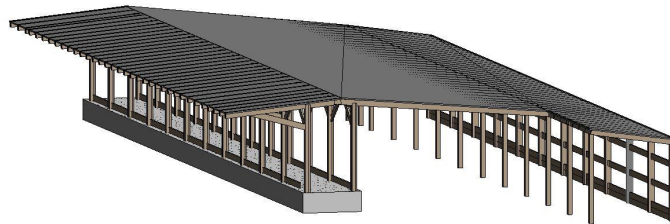


Figure 1: Design 1 Overview

Graphic model created by DBC students of the barn at the DSF.

Tours of the DSF were given to students in the following courses:

Organic Vegetable Production (HORT 4834)

Home Gardening (HORT 2984)

Introduction to Civic Agriculture (ALS 2204)

Ecological Agriculture: Theory and Practice (ALS 3404)

Virginia Tech Summer Academy: Animal and Poultry Sciences Track.

Governors School for Agriculture at Virginia Tech



Student volunteers from Engineers Without Borders with a harvest of decorative gourds.

STUDENT VOLUNTEERING

- Number of student volunteers: 46
- Volunteer hours logged: 92

Thank you to all the volunteer groups that participated at the Dining Services Farm in 2015.

- Nu Kappa Epsilon.
- Theta Tau.
- Engineers Without Borders.
- Sustainable Food Corps.

RESEARCH PARTNERSHIPS AND SUPPORT

The DSF engages in partnerships with CALS faculty and graduate students by facilitating the integration of research projects into production sites managed by the DSF and by providing technical assistance when possible. In 2015, DSF personnel provided support to seven research projects conducted by entomology graduate students in Dr. Tom Kuhar's vegetable entomology lab at Kentland Farm.

Projects conducted in Dining Services Farm plots:

- Evaluation of the Botanical Pesticide *Sabadilla* for the Control of Harlequin Bug on Collards.

Provided assistance with nutrient and weed management for the following projects:

- Control of Brown Marmorated Stink Bugs in Bell Peppers.
- Control of Lepidopteran larvae in Sweet Corn.
- Control of Black Cutworm in Field Corn.
- Control of Slugs in Field Corn.
- Evaluation of Kaolinite (Surround) and Essential Oils to Protect Vegetables from Brown Marmorated Stink Bugs.

Provided assistance with transplant production, weed management, and harvest for the following project:

- Managing Mexican Bean Beetle, *Epilachna Varivestis* Mulstant, in Snap Beans Using Reflective Mulches.



The Kuhar entomology lab and one of their research projects evaluating control of black cutworm in field corn.

OUTREACH

June 2 and June 9, 2015. Virginia Tech Dining Services Culinary Camp. Twenty children participated in gardening activities at DSF.

June 8, 2015. Cloverbud Agriculture Day Camp. Virginia Cooperative Extension. Twelve children participated in gardening activities at the DSF.

June 24, 2015. Twilight Tour: Dining Services Farm. Virginia Cooperative Extension.

August 23, 2015. Kentland Farm Field Day. A tour of the Dining Services Farm, entomology projects, weed management plots, the manor house, and Dairy Science complex.

August 27, 2015. Virginia Tech Horticulture-Dining Services partnerships, and description of vegetable pest management research at Kentland Farm. Virginia Agricultural Council meeting and tour.

September 25, 2015. Dining Services Farm and Dairy Center Tour. Virginia Tech Family Weekend.



Cloverbud Agriculture Day Camp exploring the rhubarb patch in the herb garden.

PUBLICITY AND PROJECT DISSEMINATION

Popular print and Internet publications:

January 1, 2015. *Virginia Tech Dining Services earns another top ranking.*

<https://www.vtnews.vt.edu/articles/2015/01/012115-dsa-nichediningranking.html>

March 4, 2015. *Dining Services brings farm-to-table to campus.*

http://www.collegiatetimes.com/news/virginia_tech/article_05900468-c2d2-11e4-8888-f32b0e1ad709.html

June 8, 2015. *Dining Services garners sustainability recognition for outreach and education.*

<http://www.vtnews.vt.edu/articles/2015/06/060815-dsa-nacufs.html>

July 30, 2015. *Kentland Farm feeds hungry students and intellectual curiosity.*

<http://news.cals.vt.edu/innovations/2015/07/kentland-farm-feeds-hungry-students-and-intellectual-curiosity/>

August 21, 2015. *Small Farm Generates Big Results in Virginia.*

http://www.lancasterfarming.com/news/southern_editon/small-farm-generates-big-results-in-virginia/article_da513b97-5ba8-5536-b1cf-1617df01d8c8.html#.Vd8afpffDVJ

November 24, 2015. *Va. Tech food services farm teaches students more than crop production.*

http://americanfarm.com/index.php?option=com_content&view=article&id=2653:va-tech-food-services-farm-teaches-students-more-than-crop-production&catid=2



DSF pumpkin displayed on announcers table during VT vs. Ohio State football Game.

Professional Presentations:

February 28, 2015. *Diversified Vegetable Production: Foundations for Success.* Virginia Farm Bureau: Young Farmers Winter Expo. Bristol, VA.

May 15, 2015. *Presentation to the 4VA Sustainable Food Systems Symposium.* Front Royal, VA.

October 23, 2015. *The Dining Services Farm: a Collaborative Farm-to-Institution Program at Virginia Tech.* Second Annual Virginia Urban Agriculture Summit. Richmond, VA.

Ongoing Goals and Progress

Organizational Structure:

- As the DSF continues to expand its educational programming as well as production acreage, the creation of an assistant farm manager position to support farm operations becomes more critical. This position would enable the current farm manager to invest more in curriculum development, outreach, and fundraising.
- The weekly work schedule of the Dining Services summer farm crew changed from four days a week all summer long to four days a week early in early summer, transitioning to three days a week until the start of the semester. This change reflected a decrease in labor demand at the farm due to improvements in efficiency, and a greater need for staff assistance on campus for processing and freezing farm produce.

Student Involvement:

- In 2014 and 2015, the majority of students enrolled in the Sustainable Agriculture Practicum have been upperclassmen. A lack of awareness of the course among new Virginia Tech students and the challenges of integrating course times into busy schedules may be limiting the participation of freshman and sophomores. To address this gap, efforts need to be made to reach out to underclassmen through targeted marketing during orientation, and in lower-level and first year experience courses.
- Due to redundancies in course material and learning objectives between Organic Vegetable Production (HORT 4835) and the Sustainable Agriculture Practicum (HORT 2984), the Horticulture Department curriculum committee agreed to discontinue Organic Vegetable Production beginning Spring 2016. A 1-hour, 1-credit lecture was added to the Sustainable Agriculture Practicum (2834) to provide more in-depth discussion of organic vegetable production principles and practices.
- Faculty and staff from Virginia Tech representing the Department of Horticulture, Dining Services and the CAFS Minor attended the 4VA Sustainable Food Systems Symposium in May 2015 to explore opportunities for collaboration with partnering 4VA Institutions (UVA, JMU, GMU) on sustainable food systems curriculum development and sustainable dining. Representatives from partnering institutions expressed interest in developing opportunities for students from all institutions to participate in summer educational experiences at the DSF. Pursuing this and similar programmatic expansions will require renovations of DSF facilities and resources for curriculum development in order to be successful.

Infrastructure:

- A structural analysis performed by Virginia Tech Department of Building Construction students and faculty of an open-sided barn at the DSF determined the barn to be structurally unsound and unfit for continued use. The Horticulture-Dining Services Collaboration Steering Committee decided to cease use of the barn until it could be renovated or replaced. The process has been set in motion

to evaluate options for replacing the open-sided barn with a new structure, with construction anticipated to begin in Fall 2016.

- The DSF washing and packing shed occupies one of two rooms in an enclosed shop at Kentland Farm. The adjacent room, previously used for painting farm equipment and vehicles, has been graciously committed by Kentland Farm for additional packing shed space. This new space will be renovated and painted in Spring 2016. This expansion will allow for the installation of needed vegetable handling equipment, including a cooler, ice maker, and salad spinner.
- Rainwater draining off of the UHC high tunnel has been infiltrating the inside of the structure and causing problematic soil saturation. French drains around the perimeter of the tunnel will need to be installed in the near future to address the issue.
- The UHC high tunnel is equipped with thermostat-regulated ventilation fans and a propane heater for precision environmental control. However, the cost of connecting utilities to the tunnel for these amenities has been prohibitively expensive, thus they remain inoperable. Efforts to secure funding or reduce the cost of installation are ongoing.

Production and Harvesting

- Two Allis Chalmers G cultivating tractors owned by Kentland Farm were restored to operating condition by a CALS undergraduate as a part of his CAFS Minor capstone project. The tractors were configured to perform mechanical weed cultivation for vegetable crops grown by the DSF and CALS faculty researchers. To address the need for additional mechanical weed cultivation implements that function on the variety of cropping systems used at the DSF-Kentland Farm, funding was requested and secured to purchase a three-row finger weeder made by KULT-Kress & Co. in 2016.



Allis Chalmers G restored by CAFS Minor student.

- A mechanical brusher washer (Produce Packing Machinery LLC) was purchased in Fall 2015 for washing root crops grown at the DSF. More than 12,000 pounds of root crops were washed in this machine. Another 20,000 pounds of produce are amenable to being washed in the brusher washer (tomatoes, peppers, pumpkins, etc.). The brusher washer provides immense time savings in post-

harvest handling and is actually quite enjoyable to use. Experiences relayed by other farmers suggest that the brusher washer is more effective than a traditional barrel washer for cleaning most root crops except carrots.

- Adopting Good Agricultural Practices (GAP) is critical for farms supplying produce to large institutional dining centers. Major steps were taken to improve food safety practices at the DSF in 2015, including irrigation water chlorination, the installation of hand-washing sinks, and the purchase of new plastic harvest bins and stainless steel tables. In 2016, following the installation of a walk-in cooler and ice maker, the DSF plans to formalize a Food Safety Plan and undergo a USDA GAP audit.

Produce Utilization

- The selection of crops grown at the DSF has evolved to address the specific opportunities and challenges of producing fresh produce for a large institutional dining center on a small educational student farm. Focus has and continues to shift towards crops with high value relative to production labor, and those that have high interest among chefs and uniqueness to student diners. Examples include salad greens, herbs, fingerling potatoes, hot peppers, and roma tomatoes.
- Produce deliveries from the DSF to campus were reduced from twice weekly to once a week. Though this made coordinating deliveries simpler, the lack of easily accessible cooler space at the DSF complicated efforts to properly store produce ahead of time. A cooler on site is a critical addition in the near future.
- All produce grown at the DSF in 2015 was destined for particular dining halls in predetermined amounts according to extensive communication with individual chefs and procurement directors before the start of the growing season. This “standing order” system greatly reduced produce waste and diversion, increased interest among chefs in utilizing DSF produce, and made the availability of particular products being served more consistent and visible. See Appendix for the 2015 Standing Order Invoice Sheet.
- Nearly 1000 pounds of herbs were produced in 2015, with the possibility of significantly increasing herb production in the future. Dining Services froze much of these herbs during the summer for later use. Increased herb processing and freezing will require proactive communication among personnel at multiple levels at different dining facilities to coordinate sharing of staff and equipment for summer processing and freezing.

APPENDIX

2015 Harvest Totals and Market Value

Vegetables:	LBS Received	Per LB Cost:	Total	Price Reference*
Asparagus	221.75	\$2.38	\$527.77	PSP Local
Beans, Green	1,203.00	\$0.79	\$950.37	PSP Local
Beets	713.00	\$1.73	\$1,233.49	PSP Local
Braising Mix	20.00	\$2.96	\$59.20	PSP National
Broccoli	210.50	\$1.41	\$296.81	PSP National
Carrots	549.00	\$0.50	\$274.50	PSP National
Cauliflower	82.00	\$2.10	\$172.20	PSP National
Collards	1,310.00	\$0.72	\$943.20	PSP Local
Corn, Sweet	2,357.00	\$0.38	\$895.66	PSP Local
Garlic	228.00	\$2.21	\$503.88	PSP National
Garlic Scapes	48.00	\$15.00	\$720.00	Estimate
Gourds	625.00	\$0.18	\$112.50	PSP Local
Kale, Lacinato	451.00	\$0.85	\$383.35	PSP National
Kale, Red Russian	171.00	\$0.85	\$145.35	PSP National
Lettuce, Green Leaf	1,144.00	\$2.13	\$2,436.72	PSP Local
Lettuce, Romaine	35.00	\$2.13	\$74.55	PSP Local
Mix Salad Greens	67.00	\$2.96	\$198.32	PSP National
Peppers, Bell Green	1,270.00	\$0.67	\$850.90	PSP Local
Peppers, Bell Red	960.00	\$1.32	\$1,267.20	PSP National
Peppers, Carmen Red	400.00	\$1.70	\$680.00	PSP National
Peppers, Poblano	862.00	\$1.28	\$1,103.36	PSP Local
Potatoes, Fingerling	825.00	\$1.56	\$1,287.00	PSP National
Potatoes, Kennebec	1,380.00	\$0.57	\$786.60	PSP National
Potatoes, Red	1,375.00	\$0.39	\$536.25	PSP National
Pumpkins	4,211.00	\$0.18	\$757.98	PSP Local
Spinach	18.00	\$1.75	\$31.50	PSP National
Squash, Zucchini	99.00	\$1.76	\$174.24	PSP Local
Sweet Potatoes 45-50 ct	2,516.00	\$0.56	\$1,408.96	PSP Local
Sweet Potatoes	4,674.00	\$0.18	\$841.32	PSP Local
Swiss Chard	1,485.00	\$1.25	\$1,856.25	PSP National
Tomato, Cherry	139.00	\$1.90	\$264.10	PSP National
Tomato, Roma	4,836.00	\$0.76	\$3,675.36	PSP Local
Tomato, Roma (Field)	1,924.00	\$0.76	\$1,462.24	PSP Local
Winter Squash, Acorn	160.00	\$0.48	\$76.80	PSP Local
Winter Squash, Buttercup	375.00	\$0.91	\$341.25	PSP Local
Winter Squash, Butternut	4,254.00	\$0.47	\$1,999.38	PSP Local
Winter Squash, Red Kuri	384.00	\$0.91	\$349.44	PSP Local
Winter Squash, Cushaw	730.00	\$0.91	\$664.30	PSP Local
Total: Vegetables	42,312.25		\$30,342.29	
Fruit:	LBS Received	Per LB Cost	Total	Price Reference
Apples	560.00	\$0.69	\$386.40	PSP Local

Blackberries	44.50	\$3.79	\$168.66	PSP Local
Peaches	1,967.00	\$0.80	\$1,573.60	PSP Local
Raspberries	7.00	\$5.34	\$37.38	PSP National
Rhubarb	33.00	\$1.72	\$56.76	PSP National
Watermelon	2,400.00	\$0.33	\$792.00	PSP National
Total: Fruit	5,011.50		\$3,014.80	
Herbs:	LBS Received	Per LB Cost	Total	Price Reference
Basil	603.00	\$7.30	\$4,401.90	PSP Local
Chives	20.50	\$13.35	\$273.68	PSP National
Cilantro	148.00	\$5.90	\$873.20	PSP National
Dill	9.00	\$9.00	\$81.00	PSP National
Lemon Balm	7.20	\$10.00	\$72.00	PSP National
Mint	3.00	\$10.57	\$31.71	PSP National
Oregano	9.70	\$11.07	\$107.38	PSP National
Parsley	166.20	\$3.90	\$648.18	PSP National
Sage	14.00	\$12.42	\$173.85	PSP National
Thyme	11.80	\$11.20	\$132.16	PSP National
Total: Herbs	992.40		\$6,795.06	
Grand Total	48,316.15		\$40,152.14	

*Price references taken from the Produce Source Partner (PSP) Local List, when available. Otherwise, the price reference is taken from the PSP National price or estimated from a secondary vendor.

2015 Expenses: Paid by Dining Services

Category	Amount
Seeds	\$4,084.57
Supplies	\$5,127.29
Tools and Equipment	\$8,444.20
High Tunnel	\$14,867.20
Fuel	\$517.31
Grand Total	\$33,040.57

Purchase Date	Vendor	Item	Category	Amount
2/4/15	Johnny's Selected Seeds	Seed Order #1	Seeds	\$147.40
2/18/15	Johnny's Selected Seeds	Seed Order #2	Seeds	\$710.45
2/18/15	Johnny's Selected Seeds	Seed Rollers	Tools and Equipment	\$105.00
2/19/15	Harris Seeds	Seed Order	Seeds	\$135.55
3/17/15	Johnny's Selected Seeds	Supplies #1	Tools and Equipment	\$270.00
3/16/15	Gempler's	Safety Equipment	Supplies	\$449.25
3/24/15	PME Compost	Compost	Supplies	\$577.94
3/18/15	Berry Hill Irrigation, Inc	Irrigation Equipment	Supplies	\$1,090.35
4/1/15	Seven Springs Farm	Fertilizer, Cover Crops	Supplies	\$2,829.75
3/30/15	SeedWay	Seeds	Seeds	\$109.79
	Organic Growers			
4/9/15	Supply/Fedco	Seed Potatoes	Seeds	\$1,304.20
6/2/15	New Sprout Organic Farms	Sweet Potato Slips	Seeds	\$498.24
4/21/15	High Mowing Organic Seeds	Squash Seeds	Seeds	\$64.50
6/16/15	Steel Tables	Stainless steel tables	Tools and Equipment	\$1,578.80
6/16/15	Flexcon Containers	Harvest Crates	Tools and Equipment	\$2,166.40
7/27/15	Johnny's Selected Seeds	Salanova Mix	Seeds	\$87.75
	Southwest VA Farmers			
9/12/15	Market	Pallet Bins	Supplies	\$180.00
9/19/15	Peaceful Valley	Garlic	Seeds	\$411.69
8/3/15	Cottle Strawberry Nursery	Strawberry Plugs	Seeds	\$615.00
6/11/15	Lar Lyn Farms	Brusher Washer	Tools and Equipment	\$4,324.00
6/30/15	Rimol Greenhouse Systems	Movable High Tunnel	High Tunnel	\$14,867.20
			Total	\$32,523.26

2015 Fuel Use

Use Period	Vendor	Item	Description	Amount
3/20-3/25	Foster Fuel	Diesel	Loading compost, unloading supplies	\$14.82
4/21	Foster Fuel	Gas	Gas Cans	\$13.90
4/11-5/26	Foster Fuel	Gas	Allis Chalmers G, gas cans	\$165.31
			Tilling, cultivation, potato planting, fertilizer application, plastic laying	
4/28-5/20	Foster Fuel	Diesel		\$90.79
6/2	Foster Fuel	Gas	Chevy 1500	\$66.03

6/3-6/30	Foster Fuel	Diesel	Mow cover crops, discing plots, miscellaneous usage	\$63.96
8/29-9/28	J. R. Fuel	Gas	Gas cans, Chevy 1500	\$55.09
9/1-9/27	J. R. Fuel	Diesel	Tilling, cover crop planting, bucket tractor	\$47.41
			<u>Total</u>	\$517.31

2015 Expenses: Paid by the Department of Horticulture

Category	Amount
Fuel	\$20.86
Furniture	\$300.79
Seeds	\$766.19
Supplies	\$2,135.11
Tools and Equipment	\$3,317.60
Grand Total	\$6,540.55

Purchase Date	Vendor	Item	Category	Amount
2/4/15	AgSquared	AgSquared Basic	Supplies	\$99.00
3/18/15	A.M. Leonard	Hand weeders	Tools and Equipment	\$213.91
3/21/15	ULINE	Mesh salad bags	Supplies	\$95.99
3/21/15	Heaveners	Brush, paint, screws, sandpaper	Supplies	\$74.31
3/21/15	Berry Hill	Row cover hold-down bags	Supplies	\$85.53
3/25/15	Heaveners	Nuts, bolts, lumber	Supplies	\$10.00
3/25/15	Heaveners	Rust remover	Supplies	\$5.22
3/25/15	Heaveners	Fuel additive	Supplies	\$35.25
3/24/15	Advanced Auto Parts	Oils and fluids	Supplies	\$80.00
3/21/15	Advanced Auto Parts	Funnel	Supplies	\$3.15
3/20/15	Blacksburg Auto Parts	Filters	Supplies	\$71.10
3/21/15	Advanced Auto Parts	Battery charger	Supplies	\$29.47
4/1/15	Johnnys Selected Seed	Parsley, cilantro, cauliflower	Seeds	\$73.25
4/15/15	Tractor Supply	Gear lube for spader	Supplies	\$9.18
4/15/15	Lowe's	Tape, glue, hand tools, cleaning supplies	Supplies	\$71.08
4/26/15	Best Sharpening Stones	Knife Sharpeners	Supplies	\$72.85
4/27/15	Micro-Mark	Magnetic knife holder	Supplies	\$35.65
4/27/16	Willsies Equipment Sales	Potato hilling discs	Tools and Equipment	\$693.00
5/2/15	Heaveners	Screws, bolts, wire, hose connector, funnel	Supplies	\$26.69
5/4/15	Rakers	Rosemary (Arp)	Seeds	\$36.94
5/6/15	Heaveners	Wood	Supplies	\$70.39
5/6/15	Heaveners	Wood-exchanged	Supplies	\$8.00
5/6/15	West Marine	Grundens aprons	Tools and Equipment	\$321.90
5/8/15	A.M. Leonard	Digging forks	Tools and Equipment	\$109.97
5/27/15	VT Surplus	Miscellaneous furniture	Furniture	\$210.00
5/28/15	Office Depot	Markers, white board, eraser	Supplies	\$64.30
6/4/15	Heaveners	Tools, shop vac	Tools and Equipment	\$207.79
6/4/15	Heaveners	Laundry sink	Furniture	\$90.79

6/4/15	Seven Springs	Cover crop seed, bood meal, fish emulsion	Supplies	\$268.00
6/5/15	PVCFittings.com	Blue-white flow meter	Tools and Equipment	\$95.84
6/5/15	Farmers Friend	Quick-cut greens harvester, repair kit	Tools and Equipment	\$658.45
6/5/15	Welter Seed & Honey	Teff seed	Seeds	\$193.00
6/5/15	Heaveners	Crescent wrench	Tools and Equipment	\$22.99
6/15/15	Heaveners	PVC couplings	Supplies	\$13.85
6/16/15	Heaveners	Float ball rod for accu-tab	Supplies	\$15.77
6/17/15	Edgewater Pool and Spa	Chlorine test kits	Supplies	\$21.98
6/30/16	Salem Stone	Gravel for high tunnel at UHC	Supplies	\$253.69
7/2/15	The Home Depot	Hose, wrench, screwdrivers, hammer, etc.	Tools and Equipment	\$159.32
7/2/15	Lowe's	Misc. tools	Tools and Equipment	\$219.73
7/2/15	Lowe's	Return, drill set, wrench	Tools and Equipment	-\$44.96
7/2/15	VT Surplus	Wood, volley ball net	Supplies	\$60.00
7/6/15	Heaveners	Wrenches, nuts, bolts, screws, pre-mix concrete	Tools and Equipment	\$43.15
7/7/15	Heaveners	Screws, cement	Supplies	\$38.23
7/7/15	Heaveners	Return, pre-mix concrete	Supplies	-\$16.17
7/8/15	Heaveners	Misc. nuts, bolts, screws	Supplies	\$7.15
8/10/15	Growers Supply	Irrigation timer, thermometer	Tools and Equipment	\$113.04
8/4/15	Pestproducts.com	Intice 10 Perimeter Bait	Supplies	\$42.19
8/5/15	Heaveners	Diatomaceous earth, pliers, hose valve,	Supplies	\$38.55
8/12/15	Heaveners	Propane tank and fill	Supplies	\$47.68
8/19/15	Heaveners	Ground fault receptacle for packing shed	Supplies	\$15.99
8/19/15	Blacksburg Feed and Seed	Fescue, ryegrass, clover	Seeds	\$463.00
9/17/15	Kencove Farm Fence Supplies	Electric fence supplies	Supplies	\$203.25
9/21/15	Heaveners	Extension cord, clamps for brusher washer	Supplies	\$28.48
9/22/15	Heaveners	PVC fittings for brusher washer	Supplies	\$37.94
10/10/15	Tractor Supply	Rubber boots	Tools and Equipment	\$165.66
10/10/15	Home Depot	Soap, alan wrenches	Tools and Equipment	\$34.16
10/28/15	ULINE	Mesh potato sacks	Supplies	\$111.37
12/4/15	Fleet Services	Fuel-Hahn garden dump truck use	Fuel	\$20.86
12/5/15	Home Depot	Air compressor, tow bar	Tools and Equipment	\$166.85
12/5/15	Lowe's	Air tools, ratchet straps	Tools and Equipment	\$136.80
			Total	\$6,540.55

2015 Dining Services Summer Farm Staff Salaries

Employee (names withheld)	# Days worked	# Hours Worked	Hourly Rate (Salary/2080)	Summer Salary
NW	21	168	\$10.00	\$1,680.00
NW	27	216	\$10.00	\$2,160.00
NW	33	264	\$10.03	\$2,647.92
NW	43	344	\$10.20	\$3,508.80
NW	34	272	\$10.22	\$2,779.84
NW	36	288	\$10.75	\$3,096.00
NW	36	288	\$10.92	\$3,144.96
NW	34	272	\$11.25	\$3,060.00
NW	37	296	\$11.53	\$3,412.88
NW	27	216	\$11.53	\$2,490.48
NW	34	272	\$11.73	\$3,190.56
NW	36	288	\$12.90	\$3,715.20
Total	398	3184	--	\$34,886.64

2015 Standing Order Invoice Sheet

DATE: _____

Crop	First Week Available	Unit needs per week (in lbs)						This Week	Next Week	In Two Weeks	Notes	Available Per Week
		Owens	Week End	Dietrick	Turner	Squires	Total					
Beets	9/3	30	0	0	20	0	50				Owens would like 30 lbs every other week.	50 lbs
Broccoli	10/1	0	70	0	0	0	70					100 lbs
Carrots	25-Sep	40	45	0	0	0	85				Owens Carrots on as needed basis	100 lbs
Cauliflower	15-Oct	0	100	0	0	0	100					100 lbs
Garlic	7/15	10	120	10	10	0	150				Should last 6 weeks or so	120 total
Greens, Collards	15-Aug											200 lbs
Greens, Kale	15-Aug	50	0	100	100	0	250				Dietrick 100 lbs every four weeks	
Greens, Swiss Chard	15-Aug											
Head Lettuce	15-Aug	0	0	0	50	140	190					210 lbs
Lettuce Mix	1-Oct	15	0	0	30	0	45					50 lbs
Pepper, Carmen	3-Sep	0	0	0	0	0	0					75 lbs
Pepper, Green Bell	15-Aug	20	0	0	0	0	20					150 lbs
Pepper, Poblano	15-Aug	35	0	0	40	0	75					75 lbs
Pepper, Red Bell	15-Aug	0	0	0	0	0	0					75 lbs
Potatoes, Fingerling	15-Aug	75	0	200	50	0	325					100 lbs+
Potatoes, Kennebec	15-Aug	75	0	0	300	0	375				Note: Owens would like a 3 week rotation of 75 lbs of 1 variety	100 lbs+
Potatoes, Red	15-Aug	75	0	0	0	0	75					100 lbs+
Power Greens Mix		0	40	0	0	0	40					
Spinach		15	0	0	0	0	15					15 lbs
Summer Squash, Zucchini	3-Sep	0	65	0	0	0	65					
Sweet Corn	15-Jul	0	0	0	0	0	0					
Sweet Potatoes	25-Sep	75	0	250	400	0	725					100 lbs+
Tomatoes, Cherry	15-Aug	15	0	0	0	0	15					10 lbs
Tomatoes, Roma	15-Jul	15	0	0	200	0	215					200 lbs
Pumpkins & Gourds	15-Sep	0	0	0	0	0	0					
Winter Squash, Acorn	3-Sep	0	0	100	0	0	100				Dietrick Acorn 1 per 4 weeks	
Winter Squash, Buttercup	10-Sep	15	25	50	0	0	90				Dietrick Buttercup 1 per 4 weeks	
Winter Squash, Butternut	3-Sep	20	0	250	50	0	320					
Winter Squash, Red Kuri	10-Sep	15	25	50	15	0	105					
Fruits:												
Peaches	1-Jul	100	0	0	200	20	320					300 lbs+
Apples, Gala	15-Aug	200	0	0	0	20	220					150 lbs +
Apples, Jonah Gold	30-Sep	0	0	0	0	0	0					150 lbs+
Herbs:												
Cilantro	15-Aug	5	5	5	3	0	18					30 lbs
Chives	15-Aug	0	0.5	0	0	0	0.5					1 lbs
Dill	15-Aug	0	0	0	0	0	0					
Lemon Balm	15-Aug	0	0	0	0	0	0					3 lbs
Oregano	15-Aug	0.5	0	0	0	0	0.5					2 lbs
Parsley	15-Aug	5	5	4	1	0	15					15 lbs
Sage	15-Aug	0	0.5	0	0	0	0.5					2 lbs
Thyme	15-Aug	0.5	0.5	0	0	0	1					2 lbs

Shaded means - look at notes, because it may not be expected every week!