

High School Harvest: Combining Food Service Training and Institutional Procurement

Abstract

This article discusses High School Harvest (HSH), an Extension educator-led project in five Vermont schools to provide students with job training and food system education and to provide lightly processed produce to school lunch programs. One hundred and twenty-one students participated, logging 8,752 hours growing, harvesting, and processing nearly 33,000 pounds of local produce, helping food service increase healthy local produce on their cafeteria plates. The main lesson is that while this project can achieve educational and food service procurement goals, educators must be flexible and adapt to individual schools' assets and requirements. Key ingredients to success are discussed.

David Conner
Assistant Professor
Department of
Community
Development and
Applied Economics
University of Vermont
Burlington, Vermont
97dconne@uvm.edu

Hans Estrin
Local Food Network
Coordinator
University of Vermont
Extension
Brattleboro, Vermont
Hans.Estrin@uvm.edu

Florence Becot
Research Specialist
Center for Rural
Studies
University of Vermont
Burlington, Vermont
fbecot@uvm.edu

Introduction

Interest in connecting consumers with farmers is growing nationwide, much of it as part of USDA's Know Your Farmer Know Your Food program (USDA, 2013). One prominent example, Farm to School (FTS) programs, connect schools and local farms with the objectives of improving food quality and student nutrition, providing education opportunities, and supporting local farmers (National Farm to School Network, 2013). These programs can have significant educational value, yet the seasonality and price of local food and processing needs of raw, whole produce have often been cited as barriers to increase procurement of local food (Conner et al., 2011; Strohbehn & Gregoire, 2003; Vogt & Kaiser, 2008).

School gardens provide numerous educational benefits (Cater, 2011). School gardens focus on growing food on school property, so quantity of food provided tends to be limited. The High School Harvest (HSH) project attempted to combine the educational value of school gardens and FTS programs while addressing local procurement barriers.

Overview

Supervised by a local Extension educator and working with coordinators in each school, HSH trained teams of students to work with their school food service operations to process fresh local produce for the cafeteria. HSH provided each participant approximately with service hours and an opportunity to become servsafe certified. In turn, food service operations were able to afford more locally grown foods by purchasing fresh product at wholesale prices from local farms or by using produce grown by the students.

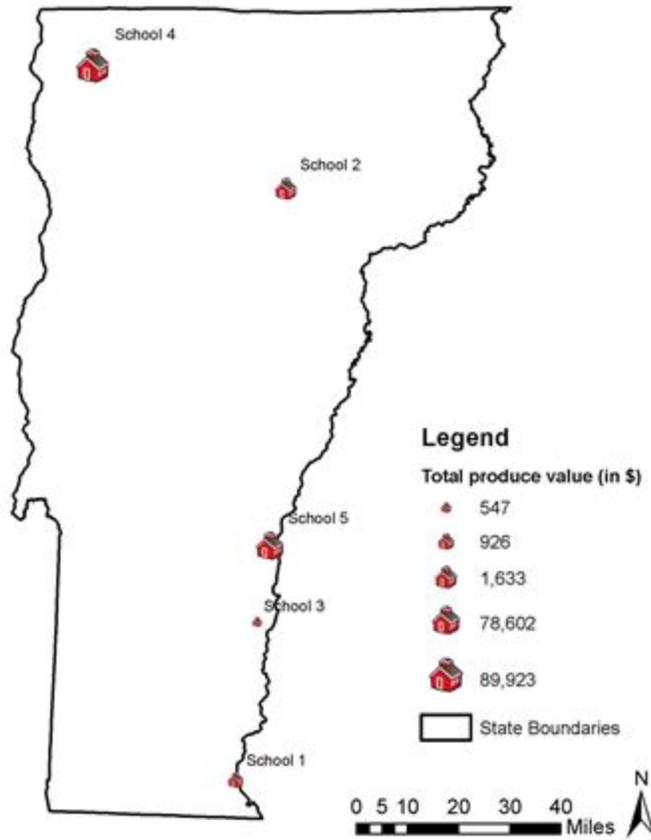
Sites

The project took place at five sites in Vermont (Figure 1) in 2011 and 2012. Each HSH project functioned slightly differently allowing each school to take advantage of different conditions:

- School 1: HSH was part of the food fundamentals course. Students harvested, washed, and processed sweet potatoes grown for the school by an Extension agricultural training program.
- School 2: HSH was part of a science course around the construction and running of a hoop house. This school partnered with a commercial kitchen where students processed carrots, butternut squash, and potatoes.
- School 3: HSH was part of a required community service. Students processed green beans purchased from local farms.
- Schools 4 and 5: HSH took place in a school system that has campuses in correctional facilities across the state.

Figure 1.

Location of High School Harvest Schools



Outcomes

Over 2 years, 121 students participated in the HSH project. Participants in HSH and its umbrella garden programs logged 8,752 hours growing, harvesting and processing nearly 33,000 pounds of local produce. With student labor valued at \$12 per hour, the savings are valued at \$104,908. Most of this savings benefited food service, helping increase healthy local produce on the cafeteria plate. Table 1 shows a production summary.

Table 1.
 Quantity of Processed Produce, Labor, and Product Value for the 2011 and 2012 Seasons

Site	Number of students/ per school	Produce processed (lbs/school)	Average quantity processed by student (lbs/student)	Labor cost savings ¹ (\$)	Produce total cost (\$)	Total produce value (\$)
School 1	56	447	8	256	670	926
School 2	14	331	24	1,272	361	1,633
School 3	15	212	14	360	187	547
School 4	15	11,685	779	64,800	25,123	89,923
School 5	21	20,328	968	38,220	40,382	78,602

Total	121	33,003	273	104,908	66,723	171,631
-------	-----	--------	-----	---------	--------	---------

Note. ¹ Labor cost was valued at \$12 per hour, which is a common wage in the school food service industry in Vermont. Since the work was done by volunteer students it represents the savings for the food services.

Key Lessons Learned

The overarching lesson learned is that each school has unique abilities and requirements; coordinators need to maintain flexibility to match activities with schools. For example:

- **Schools differed in student numbers and time devoted to the project** . The correctional school had the largest number of both students and hours per students devoted to the garden work/service program that ran HSH. As a result, it processed 90% of all volume in the project. Their capacity to grow food on site resulted in the most complete (field to fork) educational experience.
- **Schools' equipment differed across sites** . Some had commercial kitchens, while another had to bus students off-site. Although the commercial kitchen provided a rich experience in its state-of-the-art facility, students were rushed to return to school after only 1 hour. Furthermore, over the long haul, the commercial kitchen would have to charge for kitchen use and staff. Some schools had vacuum sealing capacity, others did not. Freezer capacity also differed.
- **Different processing techniques are required depending on final use of products** . Some product should be prepared to be served in the immediate future so as not to be degraded by freezing/thawing and to retain freezer space. Individual Quick Freeze (IQF) is better for feature produce. IQF allows the product to retain integrity and to be used some at a time, such as berries to be used for baking or yogurt parfaits, or carrot coins and broccoli to be served as a side. IQF produce that will be used over 3 months should be packed loose, primarily so bags can be partially used and returned to the freezer. Other produce that will be later cooked, fried, or stewed can be bulk-frozen and vacuum packed. Food grade bags are filled with blanched and cold shocked produce and bulk frozen slowly as a solid mass. Vacuum-sealing removes air and prevents freezer burn, and browning or bleaching of fresh cut root crops.

Key Ingredients Needed for Successful HSH Programs

- **A reliable source of healthy local food** . Possible ways to access local food include: 1) growing produce in a school or neighboring garden, 2) buying from local farms, 3) buying from distributors. The first option likely offers the maximum educational benefits for students as they have experience growing the food they process and eat. The second option allows for development of relationships among the school, the students, and the farmers. The third offers greatest ease for food service buyers.
- **Food safety and liability** . Farms should have food safety audits and/produce safety plan and

product liability insurance. Student-processing should be completed in a licensed kitchen with adult supervision. Processed product to be eaten raw should additionally be handled under close supervision by a responsible food service professional in a certified facility or processing kitchen.

- **Supportive food service and administration**. Administrators must be willing to support students and staff devoting time and resources to HSH. For the long-term sustainability of HSH, the program needs to be officially integrated into a school program through the curriculum, a service learning program, and/or be a graduation service requirement.
- **Site coordinator**. Regardless of enthusiasm and interest, a site coordinator needs to lead the HSH charge: recruit and train students. Grant support of a site coordinator may be needed until sufficient costs savings and educational benefits are fully realized.

Acknowledgments

The project was supported by USDA National Agency and Food and Agriculture, Agriculture and Food Research Initiative, Project Number 2011-68006-30799.

References

Cater, M., Fox, J., & Fletcher, B. (2012). Louisiana 4-H seeds of service school gardens: A descriptive view. *Journal of Extension* [On-line], 50(4), Article 41AW5. Available at: <http://www.joe.org/joe/2012august/iw5.php>

Conner, D., Nowak, A., Berkenkamp, J., Feenstra, G., Van Soelen K., Liquori, T., & Hamm, M. (2011). Value chains for sustainable procurement in large school districts: Fostering partnerships. *Journal of Agriculture, Food Systems, and Community Development*, 1(4), 55-68.

National Farm to School Network. (2013). National Farm to School Network. Retrieved from: <http://www.farmentoschool.org/>

Strohbehn, C., & Gregoire, M. (2003). Case studies of local food purchasing by central Iowa restaurants and institutions. *Foodservice Research International*, 14(1), 53-64.

USDA (2013). Know Your Farmer Know Your Food home. Retrieved from: <http://www.usda.gov/wps/portal/usda/usdahome?navid=KNOWYOURFARMER>

Vogt, R., & Kaiser, L. (2008). Still a time to act: A review of institutional marketing of regionally-grown food. *Agriculture and Human Values*, 25(2), 241-255.

Copyright © by Extension Journal, Inc. ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the [Journal Editorial Office, joe-ed@joe.org](mailto:joe-ed@joe.org).

If you have difficulties viewing or printing this page, please contact [JOE Technical Support](#)