

Towne's Harvest Garden

Annual Report 2017



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Executive Summary

Towne's Harvest Garden (THG) is a certified organic, small-scale, diversified vegetable farm located at Montana State University's (MSU) Horticulture Farm in Bozeman. THG was initiated by Friends of Local Foods (FLF), a student organization at MSU. The vision of FLF is to bring a diverse group of students and faculty together to raise awareness about local foods and to encourage sustainable lifestyles on campus and in the community. This vision was realized through a partnership with the Gallatin Valley Food Bank (GVFB), that made the first year of THG possible.

After its 11th growing season in 2017, Towne's Harvest Garden's mission is still to be a source of locally, sustainably, and educationally grown food for MSU's campus and members of the surrounding community. THG has become a key element in the SFBS program by serving as an outdoor classroom. In 2017, Mac Burgess continued as the director for THG. Elisa Boyd served as the interim production manager and was assisted by student workers, Dylan Fishman (student marketing manager), Wes Cawood (student operations manager), and Kaylee Tuning (student irrigation manager). Many groups participated in activities at THG during the 2017 season including: SFBS 296 Towne's Harvest Garden Practicum, SFBS 445R Culinary Marketing: Farm to Table, and the Montana Dietetic Interns. This season, the farm offered a Community Supported Agriculture (CSA) membership, operated two farm stands, and sold additional produce through wholesale accounts.

Cover cropping has been made a priority at THG since Mac Burgess' involvement in 2014. During the 2017 season, 1.5 of 3 acres was planted in cover crops. On the remaining 1.5 acres, 21,541 pounds of produce was harvested from 118 different crop varieties. Over 4,000 pounds of produce was donated to the Gallatin Valley Food Bank, a record year.

Labor is THG's biggest expense (\$13,902.05), and is included in the 2017 report when analyzing income and expenses. During the 2017 season, the farm's gross income totaled \$37,569.60, and expenses including labor were \$39,983.55.

Efforts were made this season to ensure produce offered at CSA was of high quality, quantity, and diversity. According to CSA member surveys, between 87% and 95% of 2017 customers agreed or strongly agreed that produce was of good or excellent quality, quantity, and diversity: a significant increase when compared to the 2015 season. There were also, on average, 2.4 more items offered in the 2017 CSA each week. In addition, the 2017 CSA season lasted two weeks longer and was offered at the same price as in 2015, making the 2017 share a higher value.

Our Story: About Towne's Harvest Garden

Towne's Harvest Garden (THG) was envisioned and initiated by Friends of Local Foods (FLF), a student organization at Montana State University (MSU). In 2006, with the help of faculty, FLF produced vegetables on two acres of land at MSU's Horticulture Farm. A partnership with the Gallatin Valley Food Bank enabled the success of the garden. Over the years, THG has expanded in size (now 3 acres), added structures to the farm (4 hoop houses and 1 heated greenhouse space at the Plant Growth Center on campus), increased agricultural output, earned more monetary revenue, expanded market opportunities, and built relationships with partners, direct participants, and associated staff.

2017 marked the 11th growing season at THG. This student-led effort has become integral to the Sustainable Food and Bioenergy Systems (SFBS) degree program at MSU. SFBS students (10-30 students/season) enroll in a summer-long practicum course at THG to learn the basics of vegetable production and marketing. Additionally, THG has become incorporated into other programs, such as the Montana Dietetic Internship and the MSU Culinary Marketing course. Our markets now include an approximately 60 member Community Supported Agriculture (CSA) program, a farm stand located on the MSU campus, a farm stand at Legion Villa which supplies low-access and low-income populations with discounted produce, and wholesale markets.

Over the years, THG has worked closely with Montana State University, the Sustainable Food and Bioenergy Systems degree program, the Department of Health and Human Development, the College of Agriculture (the Department of Land Resources and Environmental Sciences and the Department of Plant Sciences and Plant Pathology), the Horticulture Farm, and the Gallatin Valley Food Bank.

THG has been valuable to many people and organizations over the years. THG serves as a source of local food for community members, students, and staff and is:

- An educational tool
- A demonstration of sustainable agriculture and local food systems
- An interdisciplinary collaboration
- A student recruitment tool
- An avenue for campus and community outreach

Mission, Vision & Values

Towne's Harvest Garden: Mission

To offer interdisciplinary educational opportunities, be an outdoor classroom for Sustainable Food and Bioenergy Systems (SFBS), and be a source of locally, sustainably, and educationally grown food for the Montana State University campus and members of the surrounding community.

Towne's Harvest Garden: Vision

- + That Towne's Harvest will be a valuable and permanent part of MSU that is enthusiastically supported by the administration.
- + That Towne's is an interdisciplinary center of education for any MSU department and is integrated into MSU as a classroom, research laboratory, and source of good food for the campus community.
- + That Towne's inspires students from diverse backgrounds to become involved in sustainable food production and consumption.
- + That Towne's continues to diversify crop production to include a large variety of vegetables, and fruits.
- + That Towne's strengthens community food security in Bozeman and the surrounding area, increasing access to fresh nutritious produce for all.
- + That Friends of Local Foods remains a strong and active supporting student organization.
- + That Towne's continues to address all aspects of sustainability including ecology, economic viability, and social justice.

Overview of THG

People and Groups Involved at THG



Name	Role
THG Board Members and Associated People	
Alison Harmon	HHD Dean
Bill Dyer	PSPF Professor
Bruce Maxwell	LRES Professor
Mary Stein	SFBS Program Leader

Mac Burgess	THG Director
David Baumbauer	Horticulture Farm Director
THG Staff	
Elisa Boyd	Production Manager
Dylan Fishman	Student Marketing Manager
Wes Cawood	Student Operations Manager
Kaylee Tuning	Irrigation Manager
Sam Wilson, Nellie Coyle, Kristin Katchmar	Student Employees
Groups Hosted at THG	
SFBS 296 Towne's Harvest Garden Practicum	Hands-on field experience
Marcy Gaston	Culinary Marketing Instructor
SFBS 445R Culinary Marketing: Farm to Table	Cook with produce harvested from THG
Anna Diffenderfer	Assistant Director of Montana Dietetic Internship
Montana Dietetic Interns	Two week rotation at THG



Typical Weekly Schedule During Market Season

Activity	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday / Sunday
SFBS Practicum	SFBS Practicum 8am- 12pm	SFBS Practicum 8am- 12pm	SFBS Practicum 8am- 12pm	SFBS Practicum 8am- 12pm	SFBS Practicum 12pm - 3pm	
Morning (General)	Harvest / General tasks	Harvest	Harvest	Harvest	General tasks	Watering / weather dependent tasks
Afternoon (General)	General tasks	General tasks	Prep for CSA Distribution	Prep for both markets	General tasks	
CSA Distribution/ Farm Stands			CSA Distribution 4pm - 6pm	Legion Villa Farm Stand 1pm - 3pm ----- Campus Farm Stand 3pm - 6pm		

Production Layout

Field Layout



North

<p>Block 7</p> <p>corn, wheat, garlic on plastic mulch: zucchini, field tomatoes, eggplant, peppers, winter squash</p>	
<p>Block 6</p> <p>leeks, beets, carrots, buckwheat</p>	
<p>Block 5</p> <p>cover crop</p>	
<p>Block 4</p> <p>cover crop</p>	<p>Block 3</p> <p>High intensity block: snow pea, snap pea, fava beans, kale, carrots, beets, swiss chard, celeriac, parsley, broccoli, parsnips, flowers, cabbage, collards, shallots, cipollini onions, green onions, bush beans, head lettuce, cauliflower, and buckwheat</p>
<p>Block 2</p> <p>potato onion sunflower</p>	<p>Block 1</p> <p>cover crop</p>
	<p>Greens garden: swiss chard, head lettuce, dill, spinach, green onions, herbs, radish, cauliflower, fennel, radicchio, kohlrabi, chinese cabbage, carrots, and lettuce mix</p>

Covered Spaces

Fan Tunnel

carrots, lettuce mix, spinach, tomatoes, and peppers

High Tunnel 3

beets, spinach, lettuce, kohlrabi, turnips, parsley, bok choy, green onions, kale, sweet peppers, husk cherry, cilantro, and basil

High Tunnel 4

turnips, arugula, spicy mix, radish, swiss chard, bok choy, basil, sage, thyme, and rosemary



Harvest Data

- 21,541 pounds of produce harvested
 - 118 crop varieties
 - 1.5 acres in production
 - 1.5 acres in cover crop
- 4,000 + pounds of produce donated to the Gallatin Valley Food Bank



Expenses

This year, total expenses including labor are being reported. This is important information, especially since it has always been THG's largest expense. Giving students the opportunity to have practical, paid, on-farm experiences is something we pride ourselves in offering. If we wish to continue hiring student employees, labor costs should carefully considered during budgeting.

Summary of income and expenses 2017 (Jan 1 2017 - Jan 4 2018)	
THG category	Amount (\$)
wholesale	5859.88
farm stands (Campus/Legion Villa)	7,288.82
CSA	23,220.90
garden starter	1,200.00
production supplies	-4,009.46
seed	-2761.54
facility/tractor rent	-1904.3
equipment repairs/fuel	-331.22
ed supplies	-3232.77
credit card machine	-1084.48
administrative fees	-3746.42
GRA expenses	-9011.31
labor	-13,902.05
Total	-2413.95

Trends Analysis: 2015 through 2017

Income in 2017: \$37,569.60
Income in 2016: \$33,003.63
Income in 2015: \$33,268.90.

Operation expenses in 2017: \$17,070.19 *excludes managerial salaries
Operation expenses in 2016: \$17,846.12 *excludes managerial salaries
Operation expenses in 2015: \$14,630.32 *excludes managerial salaries

Net profit without labor expenses:
2017: \$20,499.41
2016: \$15,157.51
2015: \$18,638.58

In 2017, THG brought in more income and had higher expenses than in 2015. The farm saw an increase in income while cultivating a smaller portion of the farm (1.5 acres in 2017 compared to 2.4 acres in 2015). Higher intensity production allowed more land to be cover cropped in 2017, which will benefit soil fertility in future years. Higher intensity production also came with higher input costs (added fertility), but ultimately yielded greater revenue off of less land. Increased fertility allowed for the most successful cabbage, broccoli, and cauliflower production in recent years.



Community Supported Agriculture



Several Community Supported Agriculture (CSA) share options were offered in 2017:

- **Garden Starter Package:** (\$60)
 - June 1: one time distribution event at the Horticulture Farm Barn
 - six packs of: kale, swiss chard, cabbage, broccoli, cucumber, summer squash, winter squash, and herbs
 - 4" pots of tomato and pepper varieties
- **Spring Greens Share:** (\$165, \$27.50 value/week)
 - May 24 - June 28
 - 6 weeks of CSA distribution at the Horticulture Farm Barn
 - First six weeks of full share CSA
- **Summer CSA Share:** (\$385, \$27.50 value/week)
 - July 5 - October 4
 - 14 weeks of CSA distribution at the Horticulture Farm Barn
 - Second 14 weeks of full share CSA
- **Student Summer CSA Share:** (\$300, \$21.43 value/week)
 - July 5 - October 4
 - 14 weeks of CSA distribution at the Horticulture Farm Barn
 - \$85 student discount off summer CSA price
- **Full Season CSA Share:** (\$540, \$27.00 value/week)
 - May 24 - October 4
 - 20 weeks of CSA distribution at the Horticulture Farm Barn
 - A combination of the Spring Greens and Summer shares

- **Summer/Full Season Share, Convenience Option: (\$415/\$580)**
 - CSA shares delivered to customers each week
 - Summer convenience share: \$415
 - Same dates as summer share
 - 1 member
 - Full convenience share: \$580
 - Same dates as full share
 - 2 members

CSA share sales began mid March, with electronic payment through the THG website as well as payment with checks. Shares were advertised on the THG website, through flyers on campus, and by word of mouth. All shares sold out except for garden starter (18 out of 20 available shares). The spring greens share was capped at 30 members and due to an error we ended up serving 32 customers. The summer share was capped at 60 members and 60 members were served. There were 17 full season share customers.

CSA shares were offered for pickup Wednesdays from 4pm to 6pm at the Horticulture Farm Barn. Students from the SFBS Practicum and Montana Dietetic Interns were required to help the Marketing Manager for one distribution. Prior to distribution, the barn was swept, tables were set up with tablecloths, and signs were written indicating what produce was offered and a quantity to take. Produce was placed in baskets and bins. The barn was cleaned and supplies were put away after distribution.

Convenience share options were available at an additional cost for both the summer share and full season share. Shares were delivered to customers' offices through the full season. One customer agreed to pick their share up at the campus farm stand.

A student discount summer CSA share was also offered. The share was a savings of \$85 and students received the same product as those who purchased the summer CSA share. Fourteen students purchased this option.

A weekly newsletter was distributed through MailChimp to CSA members at the beginning of the week (see appendix for example newsletter). The newsletter served as a reminder for pickup and provided information about the produce that would be

available. It also included student written "Favorite Veggie Reports, Favorite Tool Reports, and Student Biographies."



CSA Comparison: 2015 versus 2017

The following information was gathered from newsletters and SurveyMonkey member surveys conducted in 2015 and 2017. Efforts to improve the CSA experience in 2017 seem to have been appreciated by CSA members.

Measure	2015	2017
Average number of items per week for full share	10.25	12.65
Number of weeks in full share	18	20
CSA price per week for full share	\$30.00 (\$540 / 18 weeks)	\$27.00 (\$540 / 20 weeks)
Perceived CSA value	85% said it was affordable / inexpensive	90% agree/strongly agree it was a good value
Veggie Quality (% respondents that rated it above neutral - good or excellent)	76% (33 total respondents)	95% (39 total respondents)
Veggie Quantity (% respondents that rated it above neutral - good or excellent)	21% (33 total respondents)	87% (39 total respondents)
Veggie Diversity (% respondents that rated it above neutral - good or excellent)	27% (33 total respondents)	87% (39 total respondents)



Campus Farm Stand



The Campus Farm Stand located under the noodle near the Strand Union Building at MSU ran for 14 consecutive weeks (July 13 - October 12). The stand was open from 4pm to 6pm on Thursdays. Each week, the Marketing Manager was in charge of leading students through set-up, market, and take down of the stand. Produce was placed in baskets on tables that were set up under tents. Items were labeled with chalkboard signs.

Campus Farm Stand was advertised on the THG website, through the CSA member newsletter, and with fliers placed on campus. On the day of market signs were placed on campus street corners.

THG accepted cash, checks and credit cards during the 2017 season. THG made \$1669.25 in credit card sales and spent \$1084.48 running the credit card machine. Although THG made more in credit card sales than it took to run the machine (\$584.77), cheaper credit card reader alternatives should be explored for the next season.

Campus Farm Stand had an average weekly sales of \$462.86, with the lowest market bringing in \$182.50, and the highest market making \$932.32. Total sales made at the Campus Farm Stand totaled \$6480.07.

Campus Farm Stand	
number of weeks	14
highest market sales	\$931.32
lowest market sales	\$182.5
average market sales	\$462.86
total sales 2017	\$6,480.07



Legion Villa Farm Stand

The Legion Villa Farm Stand seeks to strengthen community food security in Southwest Montana by increasing access to fresh, nutritious produce for limited resource households, at a discounted rate. The farm stand is located at Legion Villa, a section 8 housing complex that serves low income, elderly members of the Bozeman community. The farm stand was set up under their pergola on Thursdays from 1pm to 3pm for 12 weeks of the summer (July 20 - October 3). Produce was sold at 50% of prices being charged at the Campus Farm Stand and Senior Farmers Market Nutrition Program (SFMNP) vouchers were accepted. Vouchers were collected throughout the market season and were then taken to the Bozeman Senior Center for reimbursement. Of the total Legion Villa market sales (\$808.75), \$312 were from SFMNP vouchers. The farm stand averaged \$65.73 in weekly sales with it's lowest week bringing in \$30.00, and it's highest week bringing in \$130.00.

A student in the SFBS Summer Practicum was in charge of running the Legion Villa Farm Stand as their special project for the class. Each week they were responsible for packing appropriate produce for the market, setting up, running, and taking down the stand. Each week, additional students were required to assist at this market.

Legion Villa Farm Stand	
numbers of weeks	12
highest market sales	\$130
lowest market sales	\$30
average market sales	\$65.73
SFNP coupons	\$312
total sales 2017	\$808.75



Wholesale Summary

During the 2017 season, produce was sold to several organizations on and off campus. Produce was supplied to several classes: the Montana Dietetic Internship, Nutrition 227, and Culinary Marketing. The Montana Dietetic Interns paid Towne's Harvest Garden a preceptor fee for holding one of their rotations at the farm. In addition, THG supplied flower arrangements for a MSU President's football team dinner, as well as beets and carrots for Bridger Brewing's November salad special. At the end of August, MSU hosts a Faculty and Staff Welcome Back Picnic on the Hanon Hall Lawn and some produce for this event was from THG.

Wholesale Summary	
description	amount (\$)
Montana Dietetic Interns (produce fee)	269.65
Montana Dietetic Interns (preceptor fees)	4,400
Montana Dietetic Interns (produce)	346.08
President's football team dinner (flowers)	225
Bridger Brewing (carrots and beets)	175.00
NUTR 227 (produce for class)	135.00
Faculty/Staff Welcome Back Picnic (produce)	309.15
total wholesale	\$5859.88

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Faculty and Staff Welcome Back Picnic

When: Wednesday, August 31, 2016 from 11:30am to 1:30pm

Where: Hannon Hall lawn

Description:
MSU faculty and staff are invited to enjoy a picnic lunch and music to kick off the start of academic year 2016-17 on the Hannon lawn. Prizes donated by colleges and departments will be raffled off by President Cruzado.

RSVP:
[Register for this event](#)

Contact:
[University Communications](#)
Connie Lange
406-994-4571
connielange@montana.edu

President's Lunch



The President's Lunch was hosted in the grove of the Horticulture Farm at the end of July. Students in the Culinary Marketing: Farm to Table course (SFBS 445R/541) prepared food from Towne's Harvest Garden for the event. In attendance were MSU's President, Waded Cruzado, and Montana's Governor, Steve Bullock. A sample of dishes highlighting produce grown on site included: fava bean hummus, spring rolls, kale salad, carrot gajar halwa, and zucchini ginger cookies. Students also put together arrangements for the tables from flowers grown on the farm.



M MONTANA STATE UNIVERSITY

Please join us...

**Towne's Harvest Garden
11th Annual
President's Lunch**

Tuesday July 25, 2017
11:30am-1pm
In the Grove at the MSU Horticulture Farm

Lunch will begin at 11:30am, followed by an SFBS program update and a tour of Towne's Harvest Garden.

*To reserve your spot, please respond to Susan Moe (susan.moez@montana.edu) by Tuesday July 18th.

Directions to Towne's Harvest are on next page.



THG Practicum: SFBS 296

The SFBS Practicum had one spring session student, 19 summer session students, and 8 fall session students. Both the spring and fall sessions of the practicum are offered as an internship (SFBS 298). Dr. Mac Burgess leads these students through an immersive farm experience at Towne's Harvest Garden. The summer class schedule ran Monday, Tuesday, Wednesday, Thursday from 8am - 12pm, and Friday from 1pm - 3pm. Students attended class either M/W/F or T/R/F. In addition to scheduled class times, students were responsible for assisting with one Campus Farm Stand, one Legion Villa Farm Stand, and one CSA distribution.

Every Friday, both sections of students convened and had lunch at the farm. Time was provided to prepare and eat lunch. The wood fired pizza oven was utilized and pizza was made for one lunch. The student who assisted with CSA distribution reported on the value of that week's CSA if a customer were to have purchased the same items at a grocery store or farmers market. The week's activities were discussed and, occasionally, guest presenters also attended. One presenter, David Baumbauer, the Horticulture Farm Director, led the class through an opening of the farm's bee hives and went over basic honey bee biology and care.

Each practicum student chose a "special project" to pursue over the course of the summer. These projects ranged from documenting how to grow potatoes to running the Legion Villa Farm Stand. Another student managed the compost pile and logged temperature records. Write-ups for these projects were due at the end of the semester.



Montana Dietetic Interns

The Montana Dietetic Internship at Montana State University is closely tied with the Sustainable Food and Bioenergy Systems degree program. Interns spend 41 weeks attaining their dietetics certificate and do rotations in the areas of Food Service Management, Clinical Nutrition, Community Nutrition, and Sustainable Food Systems. The Sustainable Food Systems rotation is held at Towne's Harvest Garden.

Twenty three Interns experienced daily farm tasks from harvest to market. Similar to the practicum students, the interns assisted with one CSA distribution and one farm stand. During their time at the farm, interns harvested produce to cook as a part of their classroom experience.

The dietetic interns of 2017 were excited to be at the farm experiencing food production first hand. Their enthusiasm and motivation made them a wonderful group to work alongside.



Farm to Clinician: A Culinary Medicine Approach to Healthcare

Cranberry Bean & Beet Hummus

Prep Time: 10 min	Cook Time: ~40 min	Total Time: 50 min	Skill Level: Intermediate	Yield: 2 cups
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Description:

This hummus is the perfect dip for entertaining. It is very colorful, taking on almost a playful hue. It also is bursting with flavor. The color is contributed to the red beets, which are in season during the winter, summer, and fall months. As mentioned below, garbanzo beans can also be used as a substitute for the cranberry beans. In 2016 Montana was the number two garbanzo bean producer in the United States.⁵

Ingredients:

2 medium red beets*
 ¼ cup olive oil
 1 ½ cups cooked cranberry beans**
 Zest of one lemon
 2 tablespoons fresh lemon juice
 2 large garlic cloves
 2 tablespoons tahini
 Salt and pepper to taste

* If you have leftover beets, this is a good way to use them up.

** Cranberry beans can be found in some specialty food stores in the bulk section. If you cannot find cranberry beans, any 15 oz can white kidney bean or chickpeas can be a substitute.

Instructions:

Preheat oven to 375.

Place the beets (with skin on) on a roasting pan and drizzle with 1 tablespoon of olive oil. Roast until fork tender, about 30-40 minutes. When the beets are done roasting allow them to cool for 10 minutes or so before peeling. Peel off the skin and compost.

In a food processor, combine the beets, cranberry beans, lemon juice, garlic cloves, and tahini. Puree until combined.

With the motor running, drizzle in the olive oil until mixture is semi smooth. Season to taste with salt and pepper. Refrigerate before serving. Will keep for 1 week in the refrigerator.



Volunteers at THG

Every season volunteers assist in farm activities at THG. The Friends of Local Foods (FLF) participated in farm activities and used the wood fired pizza oven in the grove. In 2017, Aubree Pierce, MSU's AmeriCorps Vista was a wonderful addition. Aubree has been working to set up and run the Bounty of the Bridgers (BOB) pop up food pantry on campus. Their mission is to educate about food insecurity and serve MSU students in need. In the fall of 2017, THG donated potatoes and onions to BOB. In addition to her work with BOB, Aubree has recruited volunteer help for THG. As always, THG is thankful for its volunteers.



Appendix

Production Details

Greenhouse Production



Growing media

Peaco potting mix was primarily used for starting plants. Peaco drains out of pots onto the floor. OMRI “sunshine mix” or coir should be considered in the future however, there is no starter fertilizer charge. When planting anything in growing media be sure to pre-moisten it in the wheelbarrow first! This helps cut down on the amount of dirt on the greenhouse floor and makes watering to complete saturation possible. Add water to the media in the wheelbarrow and mix until it has the consistency of a wrung out sponge, damp but excess moisture doesn't come out when you squeeze a clump.

Fertilization schedule

For transplants, mix OMRI granular fertilizer in the potting mix and then pre-moisten media as usual. The fertilizer injector with liquid fish emulsion should be used once seeds have germinated. Do not use before seeds have germinated! The fertilizer may burn emerging plants and kill them. Water with the injector once a week once seedling have emerged and about three times a week once seedlings have few true leaves.

Lights

Lights should be on 12day/12night cycle earlier in the year when it is darker. Once there is more adequate natural light, move to a split day where supplemental lighting is on in

the morning and evening and off during the middle of the day when it is only adding extra heat to the greenhouse.

Watering

Plants should be watered until there is liquid dripping out the bottom of the containers. Pop a few plugs out and double check that the growing media is thoroughly saturated. Allow plugs to dry between waterings (every day most likely). Water in the morning, before noon to prevent optimal conditions for powdery mildew. Potting media (especially Peaco) is dark in color and sometimes looks wet even though it is dry!

Pest management

We had issues with shore flies and fungus gnats: keep greenhouse floors swept and trash emptied. Allow plants to dry between watering.

Hardening off

Seedlings should be put in a cold growth chamber (40F) to harden off for a few days prior to moving them to the farm.

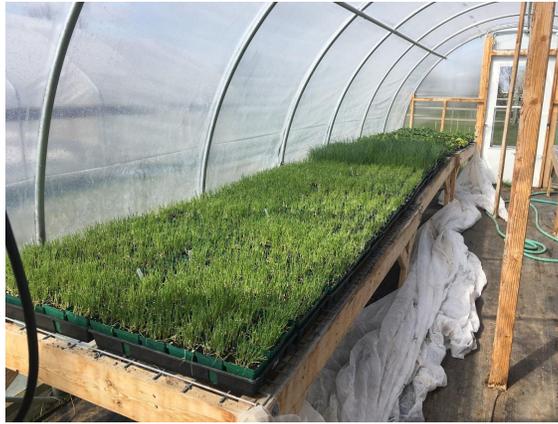
Crop Specifics

Timing of Tomato Plants

Tomatoes in the 2017 season were around two feet tall at transplant time, this is too big! Tomatoes were seeded mid-march and should be seeded about a month later (Mid-april). Starting seed in 20 cell flats saves room on the heating pad but increases transplanting labor significantly. Tomatoes will need to be moved from the plug trays they were seeded in into 4" pots, if they were seeded in a 20 cell, they will need to be stepped up into something like a 72 cell flat and then 4" pots.

Onion Trimming

Onions are seeded in February with approximately 25 seeds per 4" pot. Once onions are about 3" tall, trim weekly to encourage thicker diameter plants. Transplants should be pencil sized in diameter at the time of transplanting into the field.



Field Production: Major Crops, Details and Notes for 2018 Season

Brassicas: Kale, Cabbage, Broccoli, Cauliflower, Kohlrabi



Winterbor and Redbor Kale (1, 130' bed) was a success. Transplanted early, we harvested off the same plants from spring through the very end of CSA/ farm stand. This is the first year THG has successfully grown broccoli (Gypsy F1 and Green Magic F1) and cauliflower (Amazing, Veronica, Graffiti, and Cheddar). Sufficient blood meal at time of transplant, row cover, and dipel (for cabbage moths), made this possible. Kohlrabi (Azur star and Winner) was grown successfully and was moderately desired by CSA customers.

Corn



Corn was not successful enough to be offered in CSA or at farm stand. Untreated organic seed (Who Gets Kissed) did not germinate.

Cucumbers



Dr. Burgess's research program conducted a variety evaluation project comparing 10 different hybrid parthenocarpic cucumbers in the Season Extension Research Program Tunnels. The varieties ranged in size from cocktail cucumbers (Piccolino) to large english-type (Tyria), with several medium slicer types as well. Cucumber plants were transplanted on May 28 in double-row beds with 2' spacing between plants in each row. The first cucumber harvest occurred on July 10, with peak productivity in excess of 60 kg per week in late July and sustained weekly harvests of at least 20 kg through the 3rd week of September.

Eggplant

Orient Express and Nadia were planted. Eggplants were small in size and late to mature. There was not enough quantity to include in the CSA and they did not sell at farmstand. Based on the amount of space they took up in the greenhouse and field for no sales, they may be worth scaling back. Eggplants have been successfully grown in the past. It is possible there was there insufficient irrigation at transplanting. Disease did not seem to be an issue, and it was one of the few crops the deer did not eat.

Flowers



We grew a small assortment of flowers and made bouquets for several events on campus. Blue and gold are often requested colors. Sturdy single stem flowers like sunflowers and zinnias were hit or miss at farm stand.

Garlic



Garlic was planted in in the fall of 2016, for the 2017 season. Varieties planted were Carpathian, German Red, Music, and Korean Red. Garlic scapes and green garlic were a part of CSA and farm stand, in addition to cured garlic bulbs. Garlic harvested in 2017 was planted in the fall for a crop that will be harvested in 2018.

Towne's Harvest Garlic Evaluation by SFBS 445R – Culinary Marketing Farm to Table

In July, 2017 my students and I tried four different varieties of garlic grown out at THG. The varieties harvested and evaluated were: Carpathian, German Red, Music, and Korean Red. The garlic was harvested and evaluated the next day, without having time to dry and cure.

For the evaluation, we tasted the garlic raw and cooked. The cooking process was simple: sautéed garlic in neutral vegetable oil to extract the flavor. Raw, green garlic has a very pungent flavor and we detected subtle differences between the four varieties.

We found that cooking the garlic muted the raw flavor a bit and it was harder to tell the varieties apart. The Music variety was the spiciest when eaten raw and the spicy flavor didn't fade as quickly as the German or Korean Red varieties. The Carpathian variety had a nice mild, sweet flavor and was the most preferred of the varieties.

The students also noted the amount of cloves per bulb. Music had the least amount of cloves, whereas the others were very similar in number, averaging about 13 cloves.

Garlic Variety	Raw Flavor	Cooked Flavor	Number of Cloves per Bulb (average)
German Red	Spicy; spicy flavor fades quickly	More mild with a hint of spiciness	13
Korean Red	Spicy; similar to German Red	Mild	13
Music	Very spicy; spiciness sticks around	Slightly less spicy than raw	6
Carpathian	Mild, sweet, good garlic flavor	Mild, sweet	12

Greens: lettuce mix, spicy mix, head lettuce, asian greens, spinach



Spring greens in the high tunnels were successful. Later plantings of spicy mix/arugula in the field had severe flea beetle damage. For next season we need to choose varieties that we can plant throughout the summer to have a continuous supply of lettuce mix and spinach. Iceberg lettuce was well loved by the deer and unpopular at farm stand, worth reconsidering. Radicchio was planted and a top choice of the deer, ending in total crop loss.

Herbs



Parsley

Italian Flat Leaf and Curly Moss parsley were grown in half a high tunnel bed and in 1, 130' bed in block three. We did not even begin to deplete the parsley over the course of harvesting, half or a quarter the amount planted would be sufficient. Several smaller successional plantings in the greens garden would make more sense. On average, we donated a full bin of parsley to the food bank a week.

Basil

Aroma 2, Nufar, Elidia, and Genovese were grown. Varieties Aroma 2 and Nufar are described as having fusarium resistance. Fusarium was not confirmed in our plants but they had typical symptoms of fusarium such as darkening of stems, this did not seem to

affect yields. Transplanted basil was quicker to produce and better overall than direct seeded basil. There were three full beds planted in the high tunnels, this was in excess, one full bed would have been sufficient. I would consider growing a similar amount if we had a set contract to sell it before planting.

Perennial Herbs

Oregano, Sage, and Thyme were available in the perennial bed as “you cut herbs” we had one person utilize this service. They are minimal work and worth keeping even though the demand is low. Perennial herbs could be relocated somewhere where they would be easier to weed.

Onions



Storage onion varieties Patterson, Newberg and Clear Dawn were planted. Sweet onion varieties Ailsa Craig, and Walla Walla were planted. In addition, Cabernet (red), and Borettana (Cipollini) were planted. Patterson performed the best of the storage onions. Ailsa Craig produced much larger onions than walla walla, but the flavor of both was good. Cabernet was a bit on the small side, but good otherwise. The cipollini onions were time consuming to harvest and not highly desired by CSA or farm stand, maybe worth reconsidering.

Peppers



Sweet Bell Peppers and Carmen Italian Frying peppers were popular. People seemed to appreciate hot peppers at CSA, but they were not widely purchased at farm stand. There was an overabundance of both during the height of the season. Hot peppers in the field (75' Early Jalapeno and 75' of Red Rocket cayenne) ripened but the number of plants could be cut in half. Sweet peppers in the fan tunnel (Antohi and Escamillo) were almost all nibbled on by voles. Peppers (Ace, Islander, Carmen, Gilboa) in High tunnel 3 had blossom end rot.

Potatoes



In 200' rows the planted varieties of potato included: Dark Red Norland, Yukon Gold, and Rose Finn Apple. The quantities were more than sufficient. Rose Finn Apple was branched and misshapen. They were small enough that they fell through the rungs of the digger making them especially hard to harvest. Next year, we could plant more variety and keep the quantity the same. We could also harvest a larger portion of the potatoes as "new potatoes" earlier in the season. Potatoes were planted May 23 and 24 (later than ideal in order to accommodate student interaction). Seed potatoes were weighed and cut into approximately 2 oz seed pieces.

Roots: Carrots, Beets, Radishes, Turnips



Spring carrots (Mokum and Napoli) were planted in the fan tunnel and field. Fan tunnel carrots matured in time for the spring greens CSA. Field carrots sown with the drill into too wet of soil failed. Yellowstone and Purple 68 carrots did not have good flavor. Purple 68 carrots were abandoned due to large percentage bolting and poor flavor. Plantings of carrots for fall (Bolero and Nelson) did well, there was an over-abundance. Red Ace beets did well, there were too many. Touchstone Gold and Chioggia beets could have been planted earlier and in succession. Spring radishes did well (Easter Egg, Roxanne, Rover). Additional fall plantings would have been nice. Hakurei turnips in the spring were a big hit, the last planting was eaten by maggots which seem to come on with warmer weather. More fall plantings would have been nice.

Tomatillos



About 125' of Toma Verde tomatillos were planted on drip. They produced well. There was barely any interest at farm stand and not enough to give more than a few times at CSA. Tomatillos could be scaled back and used for specialty things (MDI, President's Lunch).

Tomatoes



Cherry Tomato

Varieties grown included: Sakura F1, Sungold, Supersweet 100 F1, and Indigo Cherry Drops. Flavor on all was good. Sakura and Supersweet were comparable in taste and size, Sakura matured first but was planted earlier in the fan tunnel. Indigo Cherry Drops were novel, high yielding, and well liked, and definitely should be planted again.

“Heirloom” Tomato

Two heirloom varieties Black Krimm and Black Prince were planted in the fan tunnel. Planted in SERP was: Purple Cherokee, Green Zebra, Pink Berkeley Tie Dye, Blush, Tiren (paste). Black Krimm, Black Prince, Purple Cherokee, Green Zebra, and Pink Berkeley Tie Dye had issues with cracking. 100% of Tiren had blossom end rot. Purple Cherokee was the best producing/nicest looking heirloom. A uniform bright red slicer was needed.

Field tomato

Moskovitch (100') and Heinz paste (100') were planted in the field. They matured before frost and were harvested. People were not as interested in them at market than they were cherry tomatoes. Most of the harvest was made into tomato sauce.

Summer Squash



One, 400' row of Zucchini was planted early on black plastic mulch and row covered. The crop survived snow and produced early. There was excess Zucchini in summer. A small second planting could extend the season and support farm stand, however, people were less interested in the later season. Varieties Dark Star, Jackpot and Dunja all performed well. There was no yellow summer squash, which should be included next year.

Winter Squash



In 2017 winter squash was grown from transplants into plastic mulch (1, 400' row), transplants without mulch (1, 400' row), and direct seeded (1, 400' row). The direct seeded squash had low emergence, high weed competition, and were ultimately abandoned. On November 15 we conducted a taste testing of 6 cultivars. Squash were cubed and cooked in an oven with neutral vegetable oil, salt, and a splash of vinegar. The following cultivars were successfully produced, and notes on each variety are provided below.

Racer (F1) Jack-o-Lantern Pumpkin

Production was barely adequate for each CSA member to get one pumpkin. People liked them, and we should do more of this variety in the future. Grow 2 flats worth.

Lower Salmon River

Good subtle sweetness and squash flavor. Better than the pie pumpkin. Cool unique experience, but difficult to cut into. Large seeds good for snacking.

Burgess Buttercup

Not as characteristically dry fleshed as I remember. Good tasting at harvest. Unremarkable after storage. Ugly.

Delicata

Like candy, stand out rich flavor, convenient size, easy handling, grow much more. Propose to grow an entire 400' row of several delicata varieties: JS (johnny's), Bush (Cornell, high mowing), Honey Boat (Oregon State, High Mowing). Popular and reliable, grow more of them and space closer together.

Jet (F1) Acorn

Yellow color, subtly sweet, mushy texture. Must Grow. Open to other cultivars.

Waltham Butternut

Firmer texture than Jet, less flavor, and rich orange color. Good tasting. Did not appear ripe at harvest, but good now. Suggest to pick an earlier maturing cultivar.

Spaghetti Squash

Did not grow this year. Should we try Orangetti next year? Interesting story on that one.

Pest management

Insect Pest Scouting Report 2017



In May we noted Pea Leaf Weevil feeding on our young snap pea crop plants. We monitored the feeding, noting that the larval stage are known to feed on root nodules and that Pyrethrins are labeled for use on Pea Leaf Weevil. Based on consensus of the students and past experience we decided not to attempt to control the Pea Leaf Weevil. The earliest plantings of peas did well.

Beginning in May and throughout the year we noted moderate to heavy feeding of Flea Beetle on brassica and solanaceae crops. All brassica crops were covered with row cover immediately after planting or direct seeding, and this strategy was generally successful. Potatoes experienced heavy feeding from the Flea Beetles throughout the season, and were almost defoliated by the end of August, however the potatoes still produced moderately well.

Beginning in July, after row cover had been removed from the heading brassicas in block 3, we noted ongoing presence of white cabbage moths and their larvae. Beginning on 7/7, and every 4-7 days thereafter, or after every irrigation, until 8/4 we sprayed all remaining heading brassicas in block 3 (cabbage, broccoli, cauliflower) with Monterey Garden Bt.

Irrigation

Irrigation report by Kaylee Tuning



Unlike a lot of farms in Montana, we have the ability to irrigate our crops at Towne's Harvest. Our goal is to distribute the desired one inch of rain over three acres a week. To accomplish this task, we have a variety of handy-dandy of irrigation tools.

Many of our plants at Towne's Harvest begin their life in the Plant Growth Center on the Montana State University campus. While these starts are living in the greenhouse, they are hand watered with a garden hose seven days a week. They sometimes need water twice a day when it's hot outside because the small trays we plant them in can't hold enough water for the plants needs on a hot day. Even after being transplanted or just moved to the farm, a garden hose is used to keep the plants happy, healthy, and hydrated.

The next useful tool to water plants is a sprinkler. We have a variety of ones that we use on the farm. Sprinklers allow for the plants to be watered longer so that the moisture penetrates farther into the soil. If it's windy outside, however, we are unable to run any of our sprinkler systems because the fine sprays ejected from the sprinkler heads just gets blown away in the wind.

Our water at Towne's harvest comes from two sources, a pond and a well system. Our pond pump is much more powerful than our well and has to run at least 30 sprinklers to keep it from blowing sprinkler heads and pipe apart. The well can only pump 30 gallons

a minutes, and we often max it out trying to irrigate everything. We use hand line to run water to our crops, and the pond connections are buried underground, but our well connections are made with blue firehose. Handline is four to six inch diameter metal pipe that sometimes shift and cause a "blowout." Blowouts are very serious because they flood the soil and can bury seeds or small plants. Handline also has to be moved frequently to ensure all our crops are getting water, which can take a long time.

We also use drip tape to irrigate our tomatoes, tomatillos, husk cherries, basil, cucumbers, melons, peppers, and squash because these crops are more susceptible to disease if their foliage becomes wet. While drip tape comes in many forms, ours is delivered to us as spools of thin plastic tubing. We're able to lay this tubing on the ground at the base of the plants and there are slits in the tubing every four inches that emit water. Drip tape can be really challenging because if there is not a pressure regulator on the lines then they get holes blown in them. Our Robinson's Ground Squirrels also like to chew on our drip tape to get water. In both instances, we have to cut out the hole in the line and splice the two pieces of drip tape together. Depending on how many leaks you have, this task can take several hours.

While irrigation takes a lot of work to get started and maintain, we would not be able to grow most of the crops for CSA in Montana's dry, hot summers. We think water is absolutely worth the trouble to bring fresh and local fruits and vegetables to your plates!

Soil Fertility

Towne's Harvest Garden Soil Test / Fertility Report 2017 By Joseph Kibiwott 09/4/2017

Soil tests were conducted on Blocks 1, 2, and 3. Soil tests were also conducted in all SERP high tunnels as well as High Tunnels (HTs) 3, 4, and the Fan Tunnel. Six soil cores were collected at a depth of 15cm (6 inches) from each of the three blocks named above on 05/01/2017. A subsample soil composite representing individual blocks was sent to AGVISE Laboratories in Northwood, ND for elemental mineral analysis on 05/05/2017. In the high tunnels, four soil cores were collected (15cm depth) from each bed on several occasions in the growing season and analyzed for nitrate-nitrogen levels in the laboratory of Dr. Burgess at MSU, Bozeman. In past years, different soil fertility management practices have been adopted at THG. In the period between 2011 and 2015, one block out of the six blocks that made up the THG field was put into cover crop

while the other blocks were grown with crops. The cover cropped block was rotated each year. In 2016, a different approach was adopted such that two blocks were intensively cropped with major crops while the other four were cover cropped to improve soil fertility and control weeds such as Canada Thistle and Bindweed.

Block 1

Soil test report has shown that nitrogen is very low i.e. 10 lbs/acre (5 ppm). Phosphorus and Potassium levels are very high at 160 ppm and 1340 ppm respectively (320 and 2680 lbs/acre respectively). All other mineral elements of importance to plant nutrition were reported to be sufficient or more than sufficient and therefore no additions of such nutrient elements were needed. Soil organic matter was estimated to be 4% in the area now the "greens garden". In October 2016, THG compost was applied to the new greens garden area at a rate of 25 tons/acre. An assorted variety of leafy greens, herbs, and root vegetables including carrots, radish and turnips were planted in the block. The nutrient demands of these short, medium and full season crops required us to supplement available nitrogen with an external source of OMRI-listed and NOP approved fertilizer/compost. Since P and K levels were inherently high in the soils, a soil amendment material that is rich in nitrogen and low in P and K was recommended. Blood meal (13.0.0) was our best choice of fertilizer since it supplies additional nitrogen to the crops without adding P and K to the soils. Therefore, blood meal fertilizers were applied at a rate of 130 lbs N/Acre to the growing area. An additional 80 lbs N was estimated to be mineralized from the 4% soil organic matter throughout the growing season.

Block 2

Soil test reports have shown that nitrogen is very low i.e. 12 lbs/acre (6 ppm). Phosphorus and Potassium levels are very high at 125 ppm and 1005 ppm respectively (250 and 2010 lbs/acre respectively). Organic matter (OM) was estimated to be 3.6%. All other mineral elements that are important to plant nutrition were estimated to be sufficient and or more than sufficient. The estimated nitrogen mineralization from organic matter in the growing season was 80 lbs/acre. Two full season crops; potatoes and bulb onions were planted in the area under Block 2. In our projection, proper management of irrigation, weed control and early planting of the potatoes and onions would result in crop-yields that are sufficient to meet our market demands (based on previous history). Besides, the area (0.5 acres) is too large to justify any application of blood meal to supplement available nitrogen. It would be too costly.

Block 3

This was the main growing area. Soil test reports have shown that nitrogen is very low i.e. 5.5 ppm. Phosphorus and Potassium levels are very high at 104 ppm and 943 ppm respectively. Organic matter (OM) was estimated to be 3.5%. All other mineral elements that are important to plant nutrition were estimated to be sufficient and or more than sufficient and therefore additions of these elements were not needed. The area was planted with major crops; kale, cabbages, broccoli, carrots, chard, parsley, carrots, beets, peas and beans. Other than the legumes, all the other vegetables grown in Block 3 have a very high demand for nitrogen throughout their growing stages and the long harvest period (especially for kale, parsley and chard). Given the high nitrogen and watering demands of these vegetables, additional nitrogen was required to supplement estimated nitrogen release (ENR) from organic matter mineralization. Therefore, blood meal fertilizers were applied at a rate of 130 lbs N/Acre to heavy feeding brassica crops.

Fan Tunnel Soil Tests and Tomato Tissue Sampling.

Soil test reports have shown sufficient Nitrogen amounts i.e. 50 ppm. Phosphorus and Potassium levels are high at 68 ppm and 376 ppm respectively. Organic matter (OM) was estimated to be 5.8%. All other mineral elements that are important to plant nutrition were estimated to be sufficient and or more than sufficient. Tissue sampling on the tomato crop that was transplanted to beds #2 and #3 was done on 06/13/2017. The plants were at the R stage. The upper, newly fully developed leaves were sampled and send to A&L Laboratories in Portland Oregon for complete mineral nutrient analysis. Tissue test results reported deficiency levels for phosphorus, potassium, and boron (B). Soil test reports have indicated lower levels for soil potassium and phosphorus in the fan tunnel compared with the rest of the THG field. The low levels of B in the tissue samples could be attributed to high soil calcium levels. Low phosphorus levels in the tissue could also be a result of high Ca in soils that reacts with P making it unavailable for plant uptake. We recommend addition of Sustane, 7:2:4 fertilizer to the soils in the fan tunnel at the rate of 60kg N/acre this fall to boost N, P, and K levels and availability for plant uptake in early spring of 2018. Addition of Borax fertilizers would help boost the B levels in the soil to above 2.5 ppm.

Continuous Nitrate Tests

Beginning the week of June 12 to August 12, soil samples were collected weekly from each bed in HTs 3,4, and the Fan Tunnel for nitrate-nitrogen tests. The results have suggested that most of the traditionally grown leafy greens at THG such as mixed salads take up high amounts of nitrogen at the start of the season. There is little nitrogen available in the soils after the harvest of the crop. Therefore, supplements rich in nitrogen e.g. compost, blood meal, fish meal etc. need to be added to the beds each

time a high value crop such as tomatoes, eggplants, cucumbers, peppers etc. are transplanted in the mid-season.

High Tunnel #3

The beds in HT#3 were reconstructed in late fall of 2016. Previously, crops were grown on soils in beds of aluminum troughs. Blood meal fertilizers were applied at a rate of 130 lbs N/acre in late fall. Soil test reports have shown high amounts of nitrogen i.e. 150 ppm. Phosphorus and Potassium levels are high at 103 ppm and 1223 ppm respectively. Organic matter (OM) was estimated to be 6.8%. All other mineral elements that are important to plant nutrition were estimated to be sufficient and or more than sufficient. The leafy greens harvested in the spring from the beds in the HT#3 grew robustly, and gave high yields of spring leafy onions, turnips, broccoli and kale. Management of irrigation frequency and rates is important in sustaining the nutrient (nitrogen) as the soil temperatures warm in spring. Irrigating the vegetables for extended periods and in increased frequency would likely lead to nitrate nitrogen and sulphate leaching from the sub soil therefore decreasing yields and could potentially lead to underground water contamination.

High Tunnel #4

The beds in HT#4 were all newly constructed in late fall 2016 and winter of 2017. Soils in the new raised beds comprised of equal fractions of; recycled soils from aluminum-trough beds, peat moss, and top soils from the PGC. Soil test reports have shown high amounts of nitrogen i.e. 42 ppm. Phosphorus was sufficient at 17 ppm and Potassium at 147 ppm. Boron was low at 0.5 ppm while organic matter (OM) was estimated to be 9.7%. All other mineral elements that are important to plant nutrition were estimated to be sufficient and or more than sufficient. The striking difference in the mineral content of beds in HT#4 compared to the rest of the farm was due to the fact that beds contained soil mixtures from different sources. The leafy greens harvested in the spring from the beds in the HT#4 grew very well and gave high yields of spring mixed salads, bok chard, and an assortment of different salads. Subsequent crops of mid-season herbs (basil) has strongly indicated nutrient deficiency symptoms. Therefore, we recommend THG management to conduct soil tests in fall 2017 on beds in HT#4 before the next spring crop is planted. The management of irrigation frequency and rates is important in sustaining the nutrient (nitrogen) as the soil temperatures warm in spring. Irrigating the vegetables for extended periods and in increased frequency would likely lead to nitrate nitrogen and sulfate leaching from the sub soil therefore decreasing yields and could potentially lead to underground water contamination.

Way Forward

The management of THG should continue to promote integrated soil fertility practices including composting, use of cover crops, proper irrigation and weed management practices and the application of NOP approved soil amendments to improve and sustain soil pH and fertility. Minimal tillage practices together with use of cover-crop mixes would promote soil structure and tilth. The documentation of mineral nutrient removal rates by crop varieties at THG would help the management in planning and making informed decisions on nutrient mass balances and fertilizer recommendations.

Produce Distribution

Community Supported Agriculture (CSA) Program

How to Run CSA Distribution by Dylan Fishman

Planning

1. Determine what's going to go into this week's share the friday or, at the latest, monday prior to distribution. Go off of past week's knowledge of what's ready and in the field, but also do a field walk and check crops that haven't been looked at in a while - they'll sneak up on you. Ask coworkers if they think anything unsuspecting may be ready to harvest. Also, double check the cooler for storage veggies that are just sitting there waiting to be used up from previous weeks.
2. Determine what needs to be washed as this will take up some of your time for the week. Just knowing what's dirty and should be washed will help you plan the harvest week a little bit more accurately. Most greens need to be washed, but definitely make a judgement call. Root vegetables should be washed, but if time is a constraint most people are okay with getting a dirty potato or beet. It's up to you what gets washed and what doesn't.
3. Determine the quantity that you're going to give shareholders for the week. We aim to have at least 10 items a week valued at \$2.50 per quantity given. Determine value by comparing the quantity you plan on giving to an equal quantity from the farmer's market, Rosauers, or The Co-op. This provides the \$25 value that CSA members expect. Shoot for more than this if you can. Keep the CSA customers happy. I also like to provide at least one new item every week to keep things exciting. In addition, switching up varieties of commonly given crops (i.e moving from red ace beets to chioggia beets one week) keeps things new and interesting. It may be hard to determine how much a crop in the

field will be once harvested. Remember that this is a CSA and that whatever the customers are given is what they get. If you bank on a bed of carrots being enough to give every customer one full pound, but only ends up being enough for half a pound, that's okay. Try to make up for it with a different crop or just explain to them why they only get this much this week. Customers think these kinds of intricacies are interesting.

4. Get everything harvested, washed, and ready to go **at least** an hour before CSA pick-up.

Set-up and Distribution

it is highly recommended to have one other person help you set up and close

1. You may set-up the CSA however you deem fit. There is no special way this must happen. I set up the CSA up like this:



1. (cont.) The tables are set up in a U shape with the open mouth of the U facing towards the western doors of the barn.
2. Floors are swept, barn is presentable, there are clean tablecloths on the tables, baskets for produce are clean, and signs are made.
3. Making signs -
 - a. I write **little chalkboard signs** for each item in the CSA so that customers know what the item is, and so that they know how much they can take. The chalkboard sign will say for example, "Carrots - take up to 8". I try to make these multi-colored and little interesting. This takes longer than you think it will. When figuring out quantities for items it usually comes out to kg or lbs of the item that the customer can take. I don't like using the scale during CSA as it's tedious and takes me away from the important conversation and connection that I'm having with the customers. I also

don't like making bunches because it takes time and wastes plastic. Instead, I take the weight that everyone can have, and average it out to an exact number. Instead of 1 lb of carrots, say that they can take up to 8 carrots. For herbs say "take 10 stems" instead of bunching them. Be creative! To make this call, average out how many carrots comprise a lb. For normal sized carrots it's usually around 6. Some people will take all 8 carrots, but using the phrase "take up to" usually gives the members the idea that they don't have to take the full amount. Make sure every sign has a quantity or it people will ask you the same question all evening during pick up - "how much of this do I take?!"

- b. I also make a **big sign** that displays everything in the CSA for the week - it's honestly pointless but is aesthetically pleasing.
- c. There's **another big sign** that goes out on the street pointing towards the open barn doors. The sign should say "Towne's Harvest This Way!" with an arrow pointing the right way. If you have a better way of doing any of this please go forth and experiment!



4. Place the food out and get some extras to keep under the table. Food goes fast at CSA pickup and will need frequent replenishing. I usually keep 1 bin of every kind of every item in the CSA under the table directly below the basket that it's in. Make sure baskets stay full, and run to the cooler to get another bin when you need one. I usually place items out from heaviest to the lightest so they don't end up squishing something in their bag. For example, zucchini, cukes, beets at the start and basil, tomatoes, and flowers at the end.
5. Put extra plastic bags out just in case people want them. People often want the semi-opaque produce bags that come in rolls for loose items such as green beans or greens. Just keep this on the table somewhere central and they'll find it.

I also put a large bag filled with recycled grocery bags at the start of the pick up so they can use those if they forgot their reusable bag or box.

6. Sign in sheet should go at the start of the pickup on a clipboard with a working pen. All I do for this is have the date on it and a spot for them to write their name. I don't really do anything with this, but it's good to have for records. I used to figure out who didn't come this week and send them an email, but it was too much work with people frequently missing weeks. Instead, they email me and I deal with it then.
7. Flowers and the cash-box should be set out the last minute. Selling flowers is optional, but I usually end up selling about \$10-\$20 worth which is worth it for me. Make sure there's change available prior to starting market.
8. That's about it! Let the people come through, ask them questions about the previous weeks, what they liked and didn't like, make it an enjoyable experience. This is a customer service experience and it should have that quality of rapport if the customer is willing to engage.

Closing

1. Put the veggies back in their bins and make sure that everything finds its way back to the cooler.
2. Prior to closing (15-20 minutes before) have your helper start cleaning up around the barn. Make sure counters are clean and free of clutter.
3. Shake out tablecloths outside, fold them and put them away.
4. Close tables and put them away
5. Put all signs back where they go, including the one you put outside
6. Sweep up debris
7. Take out compost
8. Close up barn
9. Go home and relax!

CSA Distribution Logs

Spring Greens Share

2017 CSA Spring Greens CSA
6 weeks @ \$165. \$27.50 per week
30 members
* = new this week

Week 1 May 24

1. Lettuce Mix
2. Spinach
3. Spicy Greens Mix
4. Lacinato (Dinosaur) Kale
5. Victoria Butterhead Lettuce
6. Shiro Pac Choi
7. Black Summer Pac Choi
8. Rhubarb
9. Hakurei Turnips
10. Green Onions
11. Chives
12. Oregano

Week 2 May 31

1. Oregano
2. Lettuce Mix
3. Lacinato (Dinosaur) Kale
4. Black Summer Bok Choi
5. Barese Chard
6. Hakurei Turnips
7. Beets
8. Radishes
9. Green Onions
10. Chives

Week 3 June 7

1. Deluxe Baby Lettuce Mix
2. Spicy Mix
3. Bloomsdale Spinach

4. Baby Arugula*
5. Victoria Head Lettuce
6. Red Russian Kale*
7. Winterbor Kale*
8. Hakurei Turnips
9. Scarlet Queen Turnips*
10. Ace Beets
11. Roxanne Radishes
12. Green Onions
13. Parsley*

Week 4 June 14

1. Deluxe Baby Lettuce Mix
2. Spicy Mix
3. Emperor (F1) Spinach
4. Victoria Head Lettuce
5. Jericho Romaine Head Lettuce*
6. Lacinato Kale
7. Red Ace (F1) Beet
8. Napoli (F1) Carrots*
9. Roxanne (F1) Radishes
10. Parsley

Week 5 June 21

1. Baby Arugula
2. Lacinato Kale
3. Redbor (F1) and Winterbor (F1) Carrots
4. Roxanne (F1) Bulk Radishes
5. Hakurei (F1) Turnips
6. Winner (F1) Kohlrabi
7. Bilko Chinese Cabbage (F1)*
8. Parsley
9. Music Garlic Scapes*

Week 6 June 28

1. Napoli (F1) Carrots
2. Red Ace (F1) Beets
3. Sugar Snap and Sugar Ann Peas*

4. Lacinato, Redbor (F1), and Winterbor (F1) Kale Medley
5. Italian Flat Leaf Parsley
6. Rainbow Chard*
7. Hera Dill*
8. Deluxe Lettuce Mix
9. Emperor (F1) Spinach
10. Victoria Head Lettuce
11. Barese Chard
12. Garlic Scapes
13. Green Magic (F1) Broccoli*

Summer Share

2017 CSA Main Season CSA
 14 weeks @ \$385. \$27.50 per week
 \$300 special rate for students
 60 members
 * = new this week

Week 1 July 5

1. Napoli (F1) Bulk Carrots
2. Sugar Snap and Sugar Ann Peas
3. Lacinato, Redbor (F1), and Winterbor (F1) Kale
4. Dragoon*, Breen*, and Truchas* Mini Romaine Lettuce
5. Guardsman Scallions
6. Flash (F1) Collard Greens*
7. Azur Star Purple* and Winner Green Kohlrabi
8. Hera Dill
9. Aroma (F1) Basil*

Week 2 July 12

1. Red Ace (F1) Bulk Beets
2. Mokum* (F1) Carrots
3. Cucumbers* (several varieties)
4. Sugar Snap and Sugar Ann Peas
5. Lacinato, Redbor (F1), and Winterbor (F1) Kale
6. Red and Green Salanova Lettuce*
7. Azur Star (F1) Purple and Winner (F1) Green Kohlrabi

8. Bright Lights Swiss Chard
9. Flat and Curly Leaf Parsley
10. Aroma (F1) Basil

Week 3 July 19

1. Mokum (F1) Carrots
2. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
3. Marino Cilantro*
4. Gypsy or Green Magic Broccoli
5. Guardsman Green Onions
6. Farao (F1) Green Cabbage*
7. Windsor Fava Beans*
8. Aroma (F1) Basil
9. Green Garlic*
10. A Choice of Either: Crispino Iceberg Head Lettuce* Or Flashy Troutback Romaine*

Week 4 July 26

1. Mokum (F1) Carrots
2. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
3. Cucumbers (many varieties)
4. Red Ace (F1) Beets
5. Marino Cilantro
6. Parsley
7. Aroma (F1) or Genovese Basil
8. Loose Lacinato, Redbor, or Winterbor Kale
9. Rainbow Chard
10. A Choice of Either: Gypsy or Green Magic Broccoli or Snow Crown (F1) Cauliflower*

Week 5 August 2

1. Mokum (F1) Carrots
2. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
3. Cucumbers (many varieties)
4. Italian Flat Leaf or Curly Parsley
5. Red Ace (F1) Beets
6. Aroma (F1) or Genovese Basil
7. Loose Lacinato, Redbor (F1), or Winterbor (F1) Kale
8. Rainbow Chard

9. Provider Green Beans*
10. Walla Walla* or Ailsa Craig Onion*
11. German Red or Paradise Red Garlic

Week 6 August 9

1. Dark Red Norland New Potatoes*
2. King Richard Leeks*
3. Mokum (F1) Carrots
4. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
5. Cucumbers (many varieties)
6. Italian Flat Leaf or Curly Parsley
7. Aroma (F1), Nufar (F1) or Genovese Basil
8. Loose Lacinato, Redbor (F1), or Winterbor (F1) Kale
9. Provider, Velour, and Carson Bush Beans*
10. Ailsa Craig* Onion
11. a choice of either Indigo Cherry Drop, Blush, Sakura, or Sungold Cherry Tomatoes* OR Black Prince Hybrid or Black Krim Heirloom Tomato

Week 7 August 16

1. Integro (F1) Red Cabbage*
2. Dark Red Norland New Potatoes
3. Napoli (F1) Carrots
4. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
5. Cucumbers (many varieties)
6. Italian Flat Leaf or Curly Parsley
7. Lacinato, Redbor (F1), or Winterbor (F1) Kale
8. Bright Lights Rainbow Chard
9. Walla Walla or Ailsa Craig Sweet Onion
10. German Red, Korean Red*, or Music* Garlic
11. a choice of either... Indigo Cherry Drop, Blush, Sakura (F1), or Sungold (F1) Cherry Tomatoes OR Black Prince Hybrid, Black Krim Heirloom, Pink Berkeley Tie-Dye, or Cherokee Purple Tomato

Week 8 August 23

1. Ace* or Gilboa* Green Peppers
2. Yukon Gold* New Potatoes
3. Scarlet Nantes* or Purple 68* (F1) Carrots
4. Dark Star, Raven (F1) and Jackpot (F1) Zucchini

5. Red Ace (F1) Beets
6. Mars Celeriac*
7. King Richard Leeks
8. Loose Lacinato, Redbor (F1), or Winterbor (F1) Kale
9. Walla Walla Sweet Onion
10. German Red, Korean Red, or Music* Garlic
11. a choice of either... Indigo Cherry Drop, Blush, Sakura (F1), or Sungold (F1) Cherry Tomatoes; or Black Prince, Black Krim, Pink Berkeley Tie-Dye, Green Zebra* or Cherokee Purple Slicer Tomato

Week 9 August 30

1. Ace (F1) or Gilboa (F1) Green Peppers
2. Hot Early Jalepeño*
3. Cucumbers (many varieties)
4. Toma Verde Tomatillos
5. Yukon Gold or Dark Red Norland Potatoes
6. Scarlet Nantes (F1) Carrots
7. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
8. Conservor (F1) Shallots*
9. Lacinato, Redbor (F1), or Winterbor (F1) Kale
10. Walla Walla and Red Cabernet Sweet Onion
11. German Red, Korean Red, or Music* Garlic

Week 10 September 6

1. Ace (F1) or Gilboa (F1) Green Peppers
2. Carmen (F1)*, Islander (F1)*, Antohi*, Escamillo* (F1) Ripe Peppers
3. King Richard Leeks
4. Toma Verde Tomatillos
5. Yellowstone* Carrots
6. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
7. Borettana Cipollini Onions*
8. Lacinato, Redbor (F1), or Winterbor (F1) Kale
9. Red Cabernet (F1) Onion
10. Indigo Cherry Drop, Blush, Sakura (F1), or Sungold (F1) Cherry Tomatoes
11. a choice of either... Pink Berkeley Tie-Dye, Black Krim, Black Prince, Green Zebra, or Cherokee Purple Slicing/Heritage Tomatoes

Week 11 September 13

1. a choice of either.. Carmen (F1), Islander (F1), Antohi, or Escamillo (F1) Ripe Peppers
2. Red Rocket Cayenne Peppers*
3. Hot Early Jalapenos
4. Red Ace (F1) Beets
5. Scarlet Nantes Carrots
6. Dark Star, Raven (F1) and Jackpot (F1) Zucchini
7. Walla Walla Sweet Onions*
8. Loose Lacinato, Redbor (F1), or Winterbor (F1) Kale
9. German Red, Korean Red, or Music Garlic
10. Burgess Buttercup Winter Squash*
11. a choice of either.. Indigo Cherry Drop, Blush, Sakura (F1), or Sungold (F1) Cherry Tomatoes, or Pink Berkeley Tie-Dye, Black Krimm, Black Prince, Green Zebra, or Cherokee Purple Slicing/Heritage Tomatoes
12. U-pick herbs readily available upon request
 - Oregano
 - Rosemary
 - Thyme
 - Lemon Balm
 - Marjoram
 - Sage
 - Lemon Balm
 - Zaatar

Week 12 September 20

1. a choice of either.. Carmen (F1), Islander (F1), Antohi, Ace (F1), or Escamillo (F1) Sweet Peppers
2. Red Rocket Cayenne Peppers
3. Hot Early Jalapenos
4. Deluxe Lettuce Mix*
5. King Richard Leeks
6. Red Ace (F1) Beets
7. Scarlet Nantes Carrots
8. Dark Red Norland Potatoes
9. Loose Lacinato, Redbor (F1), or Winterbor (F1) Kale
10. Delicata JS Winter Squash*

11. a choice of either... Indigo Cherry Drop, Blush, Sakura (F1), or Sungold (F1)
Cherry Tomatoes

12. U-pick herbs readily available upon request

Oregano

Rosemary

Thyme

Lemon Balm

Marjoram

Sage

Lemon Balm

Zaatar

Week 13 September 27

1. Hakurei (F1) Turnips*

2. Takrima (F1) Leeks*

3. Carmen (F1), Islander (F1), Antohi, or Escamillo (F1) Ripe Sweet Peppers

4. Red Rocket Cayenne Peppers

5. Vulcan Lettuce*

6. Tyee Spinach*

7. Dark Red Norland Potatoes

8. Hot Early Jalapenos

9. Mars Celeriac*

10. Red Ace (F1) Beets

11. Bolero (F1) Carrots

12. Ailsa Craig Sweet Onions

13. Italian Flat Leaf Parsley

14. Loose Redbor (F1), or Winterbor (F1) Kale

15. German Red, Korean Red, or Music Garlic

16. Conservor (F1) Shallots

17. Sunshine (F1) Kabocha Winter Squash*

18. Heinze Paste Tomato

19. Tiren (F1) - San Marzano Tomato*

20. U-pick herbs readily available upon request

Oregano

Rosemary

Thyme

Lemon Balm

Marjoram

Sage
Lemon Balm
Zaatar

Week 14 October 4

1. Loose Redbor (F1) and Winterbor (F1) Kale
2. Italian Flat Leaf Parsley
3. Bolero (F1) Carrots
4. Yukon Gold Potatoes*
5. Rose Finn Apple Fingerling Potatoes*
6. Mars Celeriac
7. Conservor (F1) Shallots
8. Takrima (F1) Leeks
9. German Red, Korean Red, or Music Garlic
10. Patterson (F1) Onions*
11. Red Rocket Cayenne Peppers
12. Hot Early Jalapenos
13. Carmen (F1), Islander (F1), Antohi, or Escamillo (F1) Green Sweet Peppers
14. Red Ace (F1) Beet
15. Waltham Butternut Squash*
16. Racer (F1) Pumpkin*
17. Winter Luxury or Jet (F1) Acorn Winter Squash*
18. Burgess Buttercup or Lower Salmon River Winter Squash*
19. 2 Jars of Pickles **
20. U-pick herbs readily available upon request

Oregano
Rosemary
Thyme
Lemon Balm
Marjoram
Sage
Lemon Balm
Zaatar

** = made at Roots Kitchen Cannery from THG cucumbers by THG students

CSA Information Packet



Welcome to the 2017 season!

Thank you for your interest in supporting Towne's Harvest Garden! THG is MSU's 3-acre, certified organic campus farm. 2017 will mark our 11th growing season, and we are looking forward to a field full of crops, teaching growing principles to the next generation of farmers, and your involvement!

What is a CSA?

A CSA (community supported agriculture) membership is a mutually beneficial relationship between small farms and community members. A member helps support a farm in the beginning of the season when funds are low by paying upfront for a summer's worth of produce. The farm is then able to financially sustain itself in the early season through harvest. As a member, you will receive a weekly supply of certified organic vegetables from our farm, advice during distribution, online newsletters, recipe suggestions, and as much enthusiasm as the farm managers and interns can offer!



How it works!

This year we will continue offering some new and old options from last season. If you have any questions, recommendations, or need assistance filling out your member agreement, don't hesitate to contact THG's Marketing Manager @ townesharvet@gmail.com (Allison Milodragovich @ 406-925-3858 or Dylan Fishman after May 31st @ 847-409-5567).

Page 1 of 4

CSA Membership Options

All members – Along with your weekly organic vegetables, we will provide you with a THG reusable bag your first visit, which we will ask you to bring back each week to carry your vegetables home in. We will also send you a weekly, online newsletter describing your share of the harvest and recipes to help utilize your veggies! Each week you will come to our farm and pick out the individual bundle of each item we have to offer, while our farm workers assist you with recommendation on how to use the vegetables. Finally, you will be respected and shown a season's worth of gratitude for supporting Towne's Harvest Garden through yet another year!

- ♦ **Spring Greens Share** (6 weeks May 24th-June 28th- Wed. farm pickup 4-6:30pm)
\$165 *Limited Supply - only 30 shares available!*

This share provides 30 lucky members with pre-season produce! A variety of greens and early roots will fill your refrigerator drawers each week, herbs, and any additional early season vegetables and fruits that we are able to offer. Start your summer off right!

- ♦ **Summer Share** (14 weeks July 5th -October 11th - Wednesday farm pickup 4-6:30pm)
\$385

This is our normal summertime share, which will include all of the crops we have planted, with more variety as summer progresses! Each week you will visit the farm and pick out your specific bundle of vegetables in our barn, supplying produce for an average family of 2-4 people. Knowledgeable MSU students and interns will be there to answer all of your questions.

- ♦ **Summer Share Convenience Option** (14 weeks July 6th -Oct 12th Thursday 3-6pm MSU campus pickup outside the SUB, by the Noodle on 7th and Grant)
\$415

This option provides the same produce as our Summer Share, but is delivered to the MSU campus for those who cannot get away or have busy Wednesday night schedules. The increased price represents additional time, fuel and packaging costs associated with the drop-off. Contact the Marketing Manager to determine if additional accommodations can be made.

- ♦ **Student Summer CSA Share** (14 weeks July 5th-October 11th- Wed. farm pickup 4-6:30pm)
\$300 *Limited to the First 20 Students*

This discounted share is designated for STUDENTS ONLY. A current student ID is required. This is similar to the Summer Share, but sized for student budgets. As students, this share may be split among housemates to further reduce costs. We sincerely wish to increase student veggie consumption, so tell all the students you know!

- ◆ **Full Season Share** (20 weeks May 24th -Oct 11th - *Wednesday farm pickup 4-6:30pm*)

\$540 (\$10 discount!)

This share combines the Spring Greens Share and Summer Share, along with a discount.

- ◆ **Full Season Convenience Share** (20 weeks May 25th to October 12th *Thursday 3-6pm MSU campus pickup outside the SUB, by the Noodle on 7th and Grant*)

\$580 (\$10 discount).

This is a combination of our Spring and Summer Shares, but delivered to campus. Actually, the first 7 weeks will be delivered *right to your office!* After that, you can join us at the Campus Farm Stand on Thursdays to pick up the remaining shares.

- ◆ **Garden Starter** (One time pickup – June 1st– at the farm)

\$60 *Limited Supply – only 30 shares available!*

We are continuing this package from last year, with some revisions. We will provide ~20 valuable transplants along with ~10 packages of seeds. There will be enough starts and seeds to fill a plot of land or raised bed area of approximately 10'x16'. Included will be instructions on how your garden. Transplants for 2017 Garden Starter will include all of the following :Tomatoes: 1 Heirloom, 2 Hybrid, 2 Cherries, 2 Bell Peppers, 1 Hot Pepper, Broccoli, Green Cabbage, Red Cabbage, 2 varieties of Kale, Zucchini, Yellow Summer Squash, 1 Slicing Cucumber, 1 Pickling Cucumber, Chard, Acorn and Delicata Winter squash, and Walla Walla Onion. Starts will be hardened off and ready to plant, weather permitting! All seeds, starts and soil are certified organic.

- ◆ **Harvest Bucks** (redeemable at any Campus Farm Stand)

\$50, \$100, or \$200 options.

This share option is for those of you that want to invest and support farmers, but have busy summer schedule or travel a lot. This option allows you to buy gift certificates (harvest bucks) ahead of time to use at the Campus Farm Stand. You will receive a 10% value addition for each dollar you purchase, for example: purchase a \$50 in Harvest Bucks and receive \$55 to use at any or as many Campus Farm Stand as you chose.

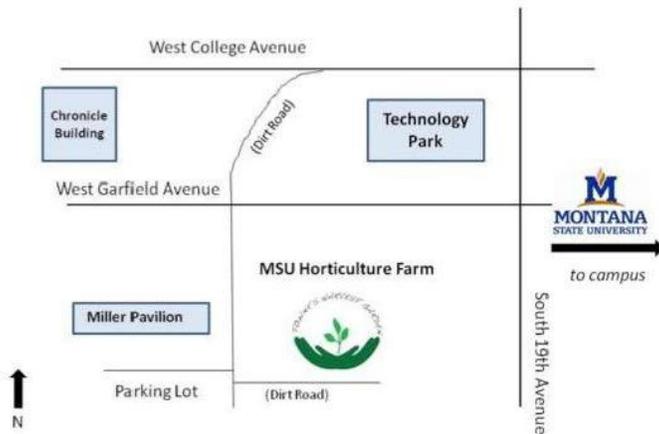
- ◆ **Donations** (donation checks may be post-dated)

For every \$25 you donate to support THG, you will receive \$5 in THG Market Bucks, eligible for redemption at any of our farm stand markets.

Donors offering \$100 will also receive a THG hat of their choice, along with \$20 in market bucks. Tax-deductible donations can be made through the MSU Alumni Foundation. Contact Sofie Malinowski: sofie.malinowski@msuaf.org.

- ◆ **Additional late season and storage shares** will be offered towards the end of the season, depending on availability and productivity. Check back with THG if you are interested later in the season.

MAP TO TOWNE'S HARVEST:



Directions: From Main St. turn south on 19th Ave, turn right on Garfield, turn left at the MSU Horticulture sign, drive down the dirt road and Towne's Harvest Garden is on the left. CSA pick up is in the big building.

Spring Greens Share

6 weeks May 24th-June 28th
Wednesday farm pickup 4-6:30pm

Garden Starter Package

June 1st farm pickup

Summer Share

14 weeks July 5th -October 11th
Wednesday farm pickup 4-6:30pm

Summer Share - Convenience

14 weeks July 6th to October 12th
Thursday campus pickup 3-6pm

Full Season Share

20 weeks May 24-October 11
Wednesday farm pickup 4-6:30pm

Full Season Share - Convenience

20 weeks May 2
May 24th to October 11th
Thursday campus pickup 3-6pm

◆ **Campus Farm Stand**

For the remainder of your vegetable needs visit our farm stand on Thursdays from 3-6pm, Dates TBD. Location is south of the MSU SUB, at the entrance of the bus loop on 7th and Grant.

Member Agreement Application

Name(s): _____

Address: _____

Phone: _____

e-mail (please print legibly): _____

Include all emails to which the weekly newsletter should be sent.



Have you been a CSA member before? _____

Where? _____

Please select which options you wish to support.

- Full Season Share - \$540
- Spring Greens Share - \$165
- Summer Share - \$385
- Summer Share Convenience Option - \$415
- Full Season Convenience Option - \$580
- STUDENTS ONLY Summer Share - \$300
- Garden Starter - \$55
- Donation (indicate amount) - \$ _____
- Harvest bucks- \$50, \$100, \$200 (circle amount)

Please enclose application and check payable to

**Towne's Harvest Garden
Montana State University
328 Reid Hall
Bozeman, MT 59717**

Or **sign up and pay online** via @

<http://townesharvest.montana.edu/communitysupportedag/>

Additional questions and concerns: THG Marketing Manager

townes.harvest@gmail.com Allison 406-925-3858 or Dylan Fishman @ 847-409-5567 after May 31st.

Member understands and agrees that the harvest may vary dramatically from week to week due to weather, pest control, and many other factors which affect plant growth and development. Member further understands that although Towne's Harvest Garden will use its best efforts to grow and harvest produce, it does not guarantee any harvest whatsoever at the garden during any of the stated weeks. Member further understands and agrees that the share payment is non-refundable regardless of actual production. Member also understands and agrees that while Towne's Harvest Garden is associated with MSU, Montana State University has no responsibility for the garden and makes no representations whatsoever as to the quantity or quality of production at the garden.

Member _____ Date _____

Thank you for your support.
The Towne's Harvest Crew can't wait to see you this season!

Sample CSA Newsletter

Summer CSA: Week 12

[View this email in your browser](#)

Snow is falling on the mountains and cool air is pushing out the smoke. We're still hard at work on the farm (wearing a few more layers) harvesting for CSA and our Campus Farm Stand. Though fewer crops tolerate and thrive with these cooler nights, some hang on just fine. Our season extension structures are holding in some of the daytime heat and warding off the frost from some of our more sensitive crops. Producing food into fall is no easy feat, and we're learning more every year how to provide our members with more diversity and larger quantities in our final weeks.

Things to Remember

- CSA pickup is every Wednesday from 4pm-6pm.
- We do not distribute our CSA's in boxes, so please bring a reusable produce bag to transport your share home in. Small produce bags will be helpful too as we start distributing some vegetables without bags or ties.
- If you can't make it during this time, please email or call us to arrange another time to come get your share. Contact info can be found at the footer of this email.



"So, what's in the CSA for this week?"

Summer CSA: week 12

We could not be more thrilled to provide you with a bountiful share of hand harvested, hand washed, passion borne fresh vegetables

Carmen (F1), Islander (F1), Antohi, Ace (F1), or Escamillo (F1) Sweet Peppers

Red Rocket Cayenne Peppers

Hot Early Jalapenos

Deluxe Lettuce Mix™

King Richard Leeks

Red Ace (F1) Beets

Scarlet Nantes Carrots
 Dark Red Norland Potatoes
 Loose Lacinato, Redbor (F1), or Winterbor (F1) Kale
 Delicata JS Winter Squash*

Indigo Cherry Drop, Blush, Sakura (F1), or Sungold (F1) Cherry Tomatoes

U-pick herbs readily available upon request

Oregano
 Rosemary
 Thyme
 Lemon Balm
 Marjoram
 Sage
 Lemon Balm
 Zaatar

* = new this week

The Return of Lettuce

by Dr. Mac Burgess

This week we are excited to bring back lettuce for the first time in a while. Lettuce is a cool season crop that does not do well in the heat of summer. Our deluxe lettuce mix in this weeks share was direct seed on Aug. 15 and endured a few weeks of summer heat before coming to maturity in the recent cool fall weather. It even endured a light frost on saturday night, and we think it is better for it. There is not even a hint of the bitter flavor we tolerate in summer lettuce. Barring truly extreme frosts we plan to bring you head lettuce for the next 2 weeks. We'll also have some spinach for you next week. One thing we won't have this fall is any more cabbage or brocoli. On that note, check out the winter farmers market at the Emerson Center starting this Satuday and continuing every 2 weeks throughout the winter. While we won't be selling there, we encourage you to support the local farmers who do.



Delicata JS Winter Squash

by Dylan Fishman

This week we're excited to give you a Winter Squash with defined visual appeal, impeccable taste, and desirable culinary versatility. The Delicata winter squash is a striking inclusion to a center piece, a roast, or a casserole.



Student Sam Wilson says:

"Delicata squash is wonderful for both stuffing and baking, the flavor is very sweet and is popular because it is not a bitter variety. The squash will continue to ripen in storage. If kept in a cool dry place they will keep for months and continue to ripen and get better. They are considered ready to eat when they have some orange in the stripes. Another benefit on winter squash is that the seeds can be baked and eaten as well and can make a fun fall snack."

We want to emphasize to everyone that letting this beautiful squash sit and age for a little bit will improve its taste! Hold off on eating it and you will be rewarded with the sweet taste of fall fruit.

Happy Cooking!

Need More Veg?



We hope that our CSA is providing you with enough vegetables for the week! However, if you find yourself craving more of one specific item or larger quantities in general then please come visit us at our campus farm stand every Thursday from 4-6pm at the intersection of Grant and 7th street by the big spinning noodle structure. Get there early for an abundance of tomatoes, basil, onions, garlic, greens, and more! CSA customers get good deals, but you'll have to come to find out!



Need a great summer gift to give to family member, friend, or acquaintance?

Follow the link below to purchase the newest addition to our CSA program - harvest bucks! Harvest bucks are a gift certificate for our on campus farm stand. Harvest Bucks are unique because you receive an added value of 10% more than what you paid for! For example, if you purchase \$50 of harvest bucks you will receive \$55 worth of coupons to use at our farm stand on anything that you'd like!

If you've already purchased harvest bucks and haven't already received them they can be redeemed at our campus farm stand during any hour of operations.

Farm stand is held every Thursday from 4:00-6:00pm at Montana State University in-between the Student Union Building and Barnard Hall.

<http://townesharvest.montana.edu/communitysupportedag/>



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Contact Elisa Boyd at
(720) 771-3839 with any questions

Garden Starter Package Information

Towne's Harvest Garden 2017 Garden Starter CSA

Thank you for purchasing our 2017 Garden Starter CSA! We're honored to provide you with the vegetables that *you* want to grow at home. All of our starts were grown in the Plant Growth Center on campus in optimal conditions, have been hardened off to cool night temperatures in a tunnel here at the farm, and are ready for your garden at any time. The following explains what variety of each plant we're giving you in this share and why we chose these particular varieties.

Kale

Toscana (OP) – Also known as dinosaur kale, or lacinato kale, this variety of kale is of Italian descent and has many traits desirable for this region. Not only is it cold hardy (so it can survive that early June snow event we sometimes get here), but it's heat tolerant as well. With dark green, sweet leaves this kale can be harvested all summer long. One traditional use of this kale is in minestrone soup.

Red Russian (OP) – This variety of kale is a feast for the stomach and eyes! It has purple stems with light green/blue leaves that are more tender than the Toscana variety. Red Russian kale can also be harvested from all summer long and is best used in salads or lightly cooked.

Chard

Bright Lights (OP) – This collection is an eye-captivating classic that will light up any dish, raw or cooked. The stems vary in color touching on gold, pink, orange, purple, red, and white. The leaves are a glossy deep green that stands out amongst a garden of other greens. This variety can be harvested from all summer long with a strong resistance to bolting in the hot months.

Cabbage

Integro (F1)- A red counterpart to Farro, Integro is a longer season cabbage (85 days) that produces round, uniform, medium sized heads composed of fleshy leaves surrounding a small core. This variety is also a trooper in the field and withstands splitting allowing a range of harvest times. Our experience is that red cabbages are less attractive to flea beetles and cabbage moths, both common pests of brassicas.

Broccoli

Green Magic (F1) – Woah-oh it's magic! This variety of Broccoli heads out to maturity in around 57 days with a large and pristinely uniform head. The plant itself is small and won't shade out everything around it. Still, give them a foot in each direction to grow big leaves and make a nice head. We chose this variety because it can be planted fairly early and harvested in the heat of the summer due to its superior heat tolerance.

Gypsy (F1) – This hybrid broccoli is a trooper in any field or garden plot! Gypsy makes the most of what it's given and reliably makes a decent head even without the excellent soil fertility needed for the more finicky green magic. The heads have optimal characteristics much like Green Magic, and mature at around the same time. This variety is resistant to downy mildew and produces generous offshoots after the initial harvest!

Cucumbers

Marketmore 76 (OP) – This variety of cucumber is a favorite classic producing uniform fruit that look and taste like the classic slicer cucumber you find in the grocery store. Long, slender, dark fruits, are available to harvest about 60 days after planting, and produce long after that. In our cucumber variety trials here in Bozeman Marketmore isn't the earliest, but is notable for good resistance to powdery mildew and an extended harvest season. These will produce earlier if pruned to a single leader and trained up a trellis. They can also be let to sprawl out on the ground if you are willing to search regularly for the fruits.

Lemon (OP) – A specialty variety that's rarely found in a grocery store, Lemon cucumbers are a small, round, sweet fruit that can be served raw or pickled. At 65 days to maturity, Lemon should offer you some variety while you're trying to consume all the Marketmores filling your garden plot.

Summer Squash

Yellow Crookneck (OP) – a yellow summer squash with a curved neck, this plant produces consistently and vigorously towards the late summer. The fruit is buttery in texture and firm making it a treat to cook and enjoy. Best when harvested small, 4-7" long.

Zucchini (OP) – we seeded a variety of green zucchini plants for you, each with their own unique characteristics. Find your variety in a Johnny's seed catalog or on their website to see its unique and beautiful qualities.

Winter Squash

Growing note from Dr. Burgess- Many people question whether transplanting squash is worth the trouble, since direct seeded plants often catch up. We think it is worth the effort, and you'll note the plants we are providing are small- just over 2 weeks old. Get these plants in the ground asap so they keep growing continuously and you'll get a jump on the growing season and a better chance at harvesting top quality mature squash. For best eating quality leave this squash on the vine until the vines have completely died back this fall, or the first threat of heavy frost. Once harvested these will store for months and will continue to ripen in storage. Some of the best Delicata squash I've ever had were harvested late last summer a little unripe but ripened in my kitchen to sweet perfection this February and March.

Jet (F1) – An early, reliable, delicious acorn winter squash. Jet is a semi-bush plant and will sprawl a little bit, so give it some space! At 85 days to maturity, each plant will produce 5-7 fruits that are as attractive as they are yummy. (unfortunately we had poor germination of this seed, and your 6-pack might have only 1, or in some cases none). If this really bums you out, let us know and we can provide another winter squash from our own supply or some seed.

Delicata (OP)– Unique striped orange and cream colored fruits perfect for baking and stuffing. Its shape and color are magnificent, and should follow your Jet squash at about 100 days to maturity. Good storage squash that look great on a thanksgiving table, both on the plate and as a centerpiece! You can eat the skins! Store until the green stripes turn orange for best flavor.

Herbs

French Tarragon – A culinary herb, tarragon pairs well with meat and egg dishes and can be used fresh or dried. Plant in full sun, and prepare for this plant to come back full steam next spring as it's a perennial herb! Tarragon bushes can get big, so don't be afraid to harvest generously.

English Thyme – Thyme is a classic addition to many dishes, this specific variety is vigorous and has small, ovoid green leaves.

Doublemint – A spearmint variety, great for cooking, tea, and medicinal use. This plant grows vigorously and will take over an area for many years if planted outside, so we recommend putting it in a large pot. If your plant flowers, pick them and put them on a salad or as a garnish for a delectable dessert!

Italian Oregano – used primarily in Italian cooking, oregano is a diverse herb that grows well in partial sun. This variety is upright for easy harvest, and earthy in flavor. Let this plant get established before harvesting from it heavily if you want it to thrive in your garden or a pot outside!

Berggarten Sage - Also known as garden sage, this variety likes partial sun and will thrive in either a garden space or in a pot. Sage is often used in meat dishes or mixed with melted butter for pasta dishes. A little bit goes a long way!

Economic Evaluation of Garden Starter	
We brought in 1,080 dollars in income (18 members X \$60), how much did it cost us to produce the transplants?	
Costs:	
labor (watering): greenhouse watered everyday for 2-4 months (avg 3 months) = 90 days X 20 min (for 1/3 greenhouse) = 30 hours labor @ \$10/hr = \$300 for watering	\$300
labor (seeding/transplanting/distribution): 2 hrs at distribution + 1 hr seeding + 2 hr labeling + 3 hr transplanting + 1 hr transport to farm/setup = 9 hrs X \$10/hr = \$90	\$90
potting mix: rough estimate - probably used about a bale of Sunshine mix (OMRI) \$62	\$62
containers: 1 flat (6) of 606 D and 1 flat 4" pots (12) per member = 120 606Ds and 240 4" pots pots/6 packs: \$5 X 20 members (\$100)	\$100.00

fertilizer: used 2 gallons of fish emulsion for all transplants, 1/3 of 2 gallons = 2/3 of a gallon (\$10) = \$6.67	\$6.67
greenhouse rental: square footage required/total square footage in the greenhouse. Each member received 2 flats of veggies = 40 flats plus extra 5 flats for spares is 45 flats (2 sq ft each) = 90 sq ft in the greenhouse greenhouse = 288 sq ft for two benches, 1 bench = 144 sq ft G.S. starts 90 sq ft/288 sq ft = 31% of greenhouse = about 1/3 of the greenhouse 1/3 of 344.3 (greenhouse rent) = \$114 for G.S. space	\$114
supplies: herb plugs from Johnny's (2 tray collection) (\$215)	\$215
TOTAL COSTS	-\$888
G.S. SALES	\$1,080
PROFIT	\$192
\$192 is not worth the space we lose for transplants going to the field and time taken away from early season crops.	

President's Lunch Article for Plant Science Says Newsletter



Participants scout for field diseases at the Post Farm.



Advance Diagnostics Workshops included preparation and diagnosis of diseased samples collected in the field.

on the power of social media for business. Following lunch, participants were given time to revisit their samples from the previous day, as well as examine samples prepared by Mareike Johnston. Prashant Jha, from SARC, gave a presentation on herbicide resistant weeds and new breakthroughs at MSU to end the workshop. A special thank you goes to Eva Grimme and Sarah Eilers for their work in the planning process. Another workshop is already in the works for 2019 with an emphasis on Integrated Pest Management.

Flenniken named Advisor

Michelle Flenniken is now a Scientific Advisor for Project Apis m. - a non-profit organization that supports honey bee

research. For more information go to <http://www.projectapism.org/pam-enewsletter.html>

Towne's Harvest Garden President's Lunch **By Elisa Boyd**

Towne's Harvest Garden, located on MSU's Horticulture Farm, is comprised of about three acres of diverse vegetable production and cover crops. This research and teaching farm offers community supported agriculture (CSA) shares, two farm stands, and donates produce to the Gallatin Valley Food Bank.

Every year Towne's Harvest Garden hosts the President's Lunch in the grove of the Farm. Students from the Sustainable Foods and Bioenergy Systems Summer Practicum and Culinary Marketing classes collaborate to bring dishes made from local ingredients and produce grown at Towne's Harvest to the table for faculty and staff invested in the SFBS program. In attendance this year were MSU's President Waded Cruzado and Governor Steve Bullock. A sample of dishes highlighting produce grown on site included: fava bean humus, spring rolls, kale salad, carrot gajar halwa, and zucchini ginger cookies. Students also put together arrangements for the tables from flowers grown on the farm.

Students in the SFBS summer practicum spend over ten hours each week on the Farm engaging in daily farm activities. By the end of the course, students understand safe harvest and handling procedures, production concepts including crop variety selection, weed identification and management, and soil fertility management. Students in both the practicum and culinary marketing participate in the weekly CSA distribution and two farm stands. Culinary marketing students focus on preparing and preserving seasonal produce.



*President Waded Cruzado and guests.
We welcome everyone to come out and*



President's Lunch in the grove of the Horticulture Farm.



Culinary Marketing students with the dishes they prepared.



Governor Seve Bullock with lunch guests.

visit Towne's Harvest Garden and see the hard work these students have put in over the summer.

New Employees

Derek Lewis (Kevin McPhee)



Recently, I started working for Kevin McPhee as a Research Associate. I have a B.S. in Statistics and an M.S. in Agricultural Production from the University of Illinois and before I came here, I was working at the University of Illinois on sorghum and corn.

It is great to be in Bozeman with so many outdoor activities to choose from. In my free time, I play hockey and enjoy the outdoors with my wife, Katrina, and my dog, Wendell.

Marie Pizzomo (Michelle Flenniken)



Dr. Marie Pizzorno will be spending the upcoming year in the laboratory of Dr. Michelle Flenniken. Marie is an Associate Professor at Bucknell University, located in Central Pennsylvania, about

a 90-minute drive east of Penn State University. Bucknell is primarily an undergraduate college with about 3400 students and Marie is heavily involved in teaching during the academic year. She also directs a lab of undergraduates working on Deformed Wing Virus (DWV), which infects the European Honey Bee.

After meeting Michelle at a Pollinator meeting at Penn State last July, she thought

THANK YOU

for a great 2017 season

