

THE SEED

A NEWSLETTER FROM THE CENTER FOR INNOVATION

Looking Ahead...



CFI Farm Manager Tonya Taylor instructs student summer intern Devonte Duckworth at the CFI's farm stand.

After a smashing good second season, which included our first student worker and the inauguration of our farm share program, we are excitedly making plans for additions and expansions next year. As we write, a pole barn is being constructed just behind the greenhouse on the CFI site. This barn, which we have been eagerly awaiting all season, will include space for hay and equipment storage, winter animal housing, a vegetable washing and processing station and a farm share distribution site. Once this is complete, we plan to add a small flock of sheep and/or goats to the mix of farm creatures for students to work with. In addition, we have been working with our Sustainable Agriculture class to complete a movable chicken coop that will house laying hens. So expect to see farm fresh eggs for sale in the near future!

Following the success of our first farm share program, we hope to expand our growing area so that we can increase our membership next season. This means not only additional growing space in the field, but also the construction of a new hoophouse (basically, an unheated greenhouse) for season extension and more of those delicious heirloom tomatoes that everyone loves. We are also in talks with our local grocery store to plan for greater volume sales and specialty crops for next year.



Students working on the mobile chicken coops. The left picture is when the frame was just going on, the right is just before completion.



Finally, with more facilities comes the ability to welcome a greater segment of the public on site for educational experiences. We plan to host a variety of farm and food-based workshops in the future geared towards both children and adults, covering topics like beekeeping, backyard gardening, raising chickens and sustainable living. We also hope to institute a student internship program next summer, which will allow our students not only to gain a greater

knowledge of sustainable farming, but also to share their knowledge and experience with the next generation by leading camps and farm tours for local kids.

With all the changes happening at the CFI, we welcome you to stop by and see the progress for yourself. Maybe you have some knowledge and experience to share as well!

STUDENT REFLECTIONS

My name is Lucas Vanroboys, and I am a 4th form student from Ontario, Canada. I take Sustainable Agriculture as my CFI course, and in fact I have taken this course all 3 terms it has been offered since I started school here at SKS. Sustainable Agriculture is my favourite class and is the main reason this term I get excited for Mondays. During my experiences in these classes, we have done everything from bee keeping to growing fruits and vegetables to taking care of the CFI animals (pigs, oxen and chickens). The Sustainable Agriculture class has two teachers or farmers as I think of them, Ms. Taylor and Mr. Clark. Both of these teachers are energetic and full of a lot of information about everyday farming. They also take the time to teach us what to do when things don't go as planned. The teachers have instructed us how to handle high pressure circumstances that can occur

Lucas Vanroboys Fourth Form

like when the bees start swarming or when you want to try and hand-feed the big oxen. Ms. Taylor and Mr. Clark have personally taught me more than I ever could have imagined about farming, growing crops and working with animals and all while getting school credit.



Lucas Vanroboys and Peter Curry carrying new bees up to the hives.

Sustainable agriculture is very important for our generation and the next because we all have to be concerned with doing things more efficiently considering the current global



Lucas getting to know one of the farm's pigs.

issues such as climate change and the energy crisis. Because of these global concerns, the class has also been educating us on just about everything someone would need to be able to survive off the land. One of our projects last year involved harvesting chickens from just a few days old until it was time to do the dirty and sad work of killing them. The project gave us hands-on understanding of all the cost, effort and time that goes into raising animals and showed us what kind of profit we could make in the end. Even though I didn't like seeing the end of the project, I understood it is all part of the food chain and life cycle, and the class made a nice donation to charity from the sale of the chickens. This class teaches you a lot about surviving and living off the land without using up a lot of resources and damaging the earth. Understanding the impact of our footprints is becoming a very importance fact for our generation, particularly if we want to continue to have plenty of natural resources for a long time.

Finally, Sustainable Agriculture is in my opinion the best CFI class to choose because this class is fun. I am not sure I should tell you that after tomato season is done and the class

has cleaned out the greenhouses, we have the best tomato wars ever. Just be sure to find the most rotten, disgusting tomato before your classmate does, so you don't find it being thrown your way! Sustainable Agriculture is also a lot of fun because every class you get to be outside in a big, open farm with a lot of things to do and see. After spending hours in the classroom and dorm, it is really nice to spend some time outside. Like all the classes at SKS, this class brings together people from all over world to work together for a single project. We learn to collaborate to get things done fast and efficiently. The three classes I have been in have had boys from China, Korea, Bermuda and other countries and by working together we have been able to understand the differences around the world (climate, soil, equipment) and how these differences can affect sustainable agriculture. In my mind, there is no better place to learn life-long lessons, key life skills like teamwork and communication, livestock farming, growing crops and bee keeping than at the SKS sustainable agriculture CFI program with teachers Ms. Taylor and Mr. Clark.



Lucas learning how to till the earth to get it ready for tomatoes in the greenhouse.



Honey Bees

We are nearing the end of our second “bee+” year at the CFI (translation: our second season of having bee colonies on site). At the beginning of our first season, we introduced four colonies of bees with our students. After a pleasant and bee-friendly summer and fall, we were hopeful that they would all make it through their first New England winter. Honey bees originated in much warmer climates and did not exist in North America until they were brought over by European settlers. To help honey bees survive our sometimes harsh winters, beekeepers have to be very intentional and thoughtful about their placement and care. Hives need to be facing the southern sky so that they receive the greatest amount of warming winter sun throughout the cold season. There should also be a windbreak around the hives to help block the worst of the icy winter winds. Beekeepers must also vigilantly monitor the hives’ food stores to ensure that they have enough to last until the first spring blooms. This means not harvesting honey from a colony during its first season. Honey, which is a sweet luxury for us humans, is actually the primary winter food source for bees. So honey bees work all season to store up enough of the sweet stuff to keep their entire colony alive through the winter months. Luckily for us bees, being as busy as they are, often produce a surplus of honey each year. This surplus is what the responsible beekeeper harvests.



Our hives did surprisingly well over their first winter, especially considering how harsh the weather was and how long the winter lasted. Three of our four original colonies survived. Later on in spring of this year, we introduced three new colonies to the bee yard. All six of the hives were thriving and “buzzing” with activity all season. We eagerly awaited the moment that we could harvest honey from the three second-year hives. Generally, a healthy hive will produce about 100 lbs of surplus honey that the beekeeper can harvest. In late July, our hives were right on track for a 300 lb honey harvest! However, after a quick check in August, they appeared to

have slowed down production significantly. By harvest time in September, the bees had not only stopped storing honey but had, in fact, already eaten a significant amount of their winter honey stores. This behavior is extremely unusual, so we called our friend and mentor Al Avitabile, the guy who literally wrote the book on beekeeping (*The Beekeeper's Handbook*). Simply stated, Al was stumped. There was no by-the-book explanation for what we were seeing. His best guess is that the long, cold spring followed by a cool, somewhat dry summer affected the local flora. Though flowers were everywhere, they may not have produced the normal amount of nectar, and the bees were left hungry and scavenging by the end of fall.

So what does this mean for our bee friends? Sadly, it means no honey for us this

year. We are feeding the bees a simple sugar syrup to help them rebuild their food stores and get ready for winter. However, we won't know if the help was enough until next spring. So fingers crossed, everyone, that our bees make it through! We all know the honey bee needs as much help and good will as it can get these days!



Some of our bees swarming outside their hive one September night

“Adopt the pace of nature: her secret is patience.”

~Ralph Waldo Emerson

Natural Pest Management

As most members of the SKS community know, we grow all of our vegetables and flowers without the use of chemical pesticides, herbicides or fungicides. This choice is not only healthy for our community and the environment, but is a practical and deliberate way to minimize our impact on the earth for future generations of South Kent students. It does, however, lead to frustration in the field at times. Imagine pulling up a fresh carrot or beet only to find it nibbled down by rodents or rabbits. Or picking what appears to be a beautiful

heirloom tomato only to find an ugly hole chewed in it by a hornworm. Or perfectly tended arugula turned to lace by flea beetles. Not to mention beds of lettuce wiped out in an evening by a herd of grazing deer! What's an organic grower to do?



While some problems are easier to manage than others, we have options to address each of these pests...along with a little help from friends. We have brought deer damage down to zero with simple, solar powered electric fences. Flea beetle damage is significantly reduced by covering the crop with floating row covers before the beetles find it. For rodent and hornworm damage, however, we rely on a little outside assistance. Each evening around sundown, we have a visit from a great blue heron (whom we have affectionately named “Karen”). We often watch from our porch or window as Karen the Heron deftly weaves her way through the electric fence and then carefully steps around the raised beds in search of her nightly meal. She usually manages to throw a few voles and mice down her gullet in a single visit! We also had a resident family of Red-tail Hawks at the farm site this season, with Momma Hawk teaching her two fledglings to hunt in and around the gardens. As long as the chickens were safely in their coop, the hawks were great to have around. We even have feline help in the top field, with photographic evidence of bobcats roaming in the night, no doubt hunting the prodigious population of voles and rabbits!



“Karen” saving our root veggies from a marauding vole



A deer raiding our garden one night



A bobcat patrolling our gardens for pests

Perhaps one of the most interesting and lethally efficient helpers we have are the parasitic wasps that help control the tomato hornworm population. Female wasps actually seek out hornworms to lay their eggs on. These eggs eventually hatch inside the body of the hornworm where they eat and grow, leaving the hornworm an empty shell. Gruesome, but effective! If we decided to use chemical pesticides, herbicides and fungicides at the farm, we would not only be inviting these chemicals and all the harm they can bring into our bodies, but we would actually also be hurting all the critters that help build a healthy, balanced environment for us to enjoy. So thank you, Nature, for sending a little help our way!

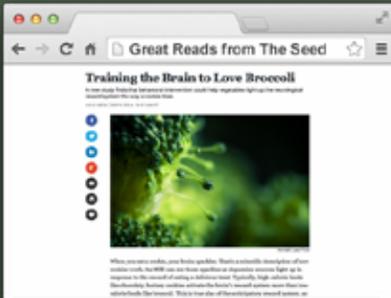
Great Reads from The Seed

Links to food and farm related journalism

From NPR, a look at the new technology of edible packing as a way to help reduce waste and why it will yet be a while before it catches on.

“Edible Packaging? Retailers Not Quite Ready to Ditch the Wrapper”

<http://www.npr.org/blogs/thesalt/2014/09/16/348957715/edible-packaging-retailers-not-quite-ready-to-ditch-the-wrapper?sc=ipad&f=1053>



From The Atlantic, a study about how the brain responds to food it perceives as pleasurable and how we may be able to train our brains to respond differently to crave healthier foods

“Training the Brain to Love Broccoli”

<http://www.theatlantic.com/health/archive/2014/09/training-the-brain-to-love-broccoli/379497/>

From Modern Farmer, a cultural history of the tomato, from its origins as a poisonous plant to its current status as omnipresent fruit of summertime dishes

“From Poison to Passion: The Secret History of the Tomato”

<http://modernfarmer.com/2014/09/poison-pleasure-secret-history-tomato/>

From Common Dreams, a British scientific journal landmark study showing the benefits of chemical-free farming practices and how organic produce actually is healthier

Landmark Study Underscores Wide-Ranging Benefits of Pesticide-Free Farming

<http://www.commondreams.org/news/2014/07/11/landmark-study-underscores-wide-ranging-benefits-pesticide-free-farming>

From Civil Eats, a great explanation about the differences between heirloom, hybrid and GMO crops.

“The Great Tomato Debate: Heirlooms, Hybrids, or GMOs?”

<http://civileats.com/2014/08/05/the-great-tomato-debate-heirlooms-hybrids-or-gmos/>



From The Huffington Post, a look at why CSAs (farm shares) are a better alternative than grocery stores for buying your vegetables

“8 Reasons CSAs Are Better Than Grocery Stores”

http://www.huffingtonpost.com/2014/07/02/csa-better-grocery-store_n_5547659.html





VEGGIE SPOTLIGHT:

Celeriac (*Apium graveolens*)

Celeriac, also known as celery root, is a native of the Mediterranean basin where it grows wild and was brought into cultivation a few hundred years ago. Though a ubiquitous starch alternative in Europe, celeriac is little-known and often hard to find here in the US. Its flavor is fresh and delicious, and it can be prepared in a huge variety of ways (raw, boiled, fried, roasted). A cousin to common vegetables like carrots and parsley, celeriac is an easy-to-grow, easy-to-prepare and nutritional addition to our gardens and diets. Because it is low maintenance and generally pest-free, you can often find celeriac at your local organic farmer's stand at the farmer's market. It is definitely worth seeking out and trying; you won't be disappointed!

Celeriac Mash

Ingredients:

1 celeriac, peeled and cut into 1/2-inch pieces
3 potatoes, peeled and cut into 1/2-inch pieces
1/3 cup heavy cream
3 tablespoons butter

Preparation:

Place the celeriac cubes into a large pot and cover with salted water. Bring to a boil over high heat, then reduce heat to medium-low, cover, and simmer 12 minutes. Add the potatoes and continue boiling until the vegetables are very tender, about 15 minutes more. Drain and allow to dry for a minute or two.

Return the vegetables to the pot and stir over medium-high heat until liquid is no longer pooling from the vegetables. Remove from the heat and pour in the cream and butter. Mash with a potato masher until almost smooth.