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Their Farm, Your Table: Sustainability of Small Farms in the Willamette Valley

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Their Farm, Your Table

Sustainability of Small Farms in the Willamette Valley

By
Rachel N. Worley

An Honors Thesis Submitted in Partial Fulfillment of the
Requirements for Graduation from the
Western Oregon University Honors Program

Dr. Mike McGlade,
Thesis Advisor

Dr. Gavin Keulks,
Honors Program Director

June 2021

Acknowledgements

Over the course of this project, I have received help and support at every turn. First, I would like to thank my thesis advisor Dr. Mike McGlade for pointing me in the direction of so many wonderful materials and authors. Thank you also to honor's director Dr. Gavin Keulks for editing my work despite an insanely busy schedule. I'm sorry none of my recipes included Doritos.

I would like to thank my USDA coworker Emily Rutkowski for giving me a fresh perspective on where I've always lived, and for your commitment to eating local produce. Thank you to my friends, roommates, and partner for eating my food, cooking with my recipes, and listening to me talk about this project for a year. And to my family, for raising me alongside so many gardens, for instilling in me a passion for trying new recipes, and for eating the countless creations I've made over the years (certainly not all successful and tasty).

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Abstract

Whether walking down a grocery aisle or strolling through a farmer's market, everybody eats, which means everybody shops. Oregon's Willamette Valley is thick with small farms that grow everything from raspberries to rutabaga, but is locally grown produce worth the hype? Despite this rich agricultural area, many people lack knowledge about the importance of local farms, the ways they operate, and how they can be supported. This project explores what it means to farm small, and whether being small is the same as being environmentally friendly and sustainable long-term. Along with research contrasting conventional, organic, and sustainable farming techniques there are editorials on three local farms, and a handful of recipes that can be made using their produce.

Background Section

Personal Connection/Inspiration

I grew up on a five-acre hobby farm in rural Oregon where my parents still reside. Over the years we had a variety of animals, including rabbits, guinea pigs, horses, sheep, cats, and dogs. Beyond livestock, different years would see different gardens come and go. When my grandma lived nearby for a few years, she loved to garden on our property and subsequently those were the years we had the biggest plots. We grew everything from tall yellow corn to green tomatillo tomatoes with their papery petals, which I liked to open long before the fruit was ripe.

Growing up, spending time outside to remove weeds, rake, mow, and water was a common chore. When it was time to plant, I was shown how to soak beans in water, how to dig a little place for them in the soil, how far apart to place them, and how to bury them just deep enough. Our gardens were never large enough to warrant the use of machinery or chemicals, meaning everything was done with hoes and shovels and hands and sweat. Fencing was used in a constant battle against deer, egg shells scattered to ward off slugs, and flowers like Marigolds planted to repel cucumber beetles (which love tomatoes).

Today there's still an orchard with pears, cherries, and apples, as well as a blueberry patch and modest vegetable garden organized in raised beds. In the fall, leaves from trees in the front yard are scattered over the bases of the blueberry plants where they decompose and help nourish the soil. The orchard has a sprinkler system, and we simply cut the worms out of our apples every-now-and-then. My

father has shifted his focus towards hydroponics as an alternative to our old labor-intensive gardens.

When I was younger I didn't always like getting my hands dirty but harvesting food from our own house was fun and rewarding. As time passed, I was able to experience the growth process, from cotyledons peeping through the soil, to fully ripened produce. It was also impressive for me to see, even as a young person, that we could grow giant pumpkins at home from seeds which cost a few cents, rather than buying gourds from the store which cost considerably more. Although I used to complain about wanting to move to the suburbs so that I could ride my bike to see my friends, now I value the space where I was raised.

A wealth of homegrown produce transitioned seamlessly from the garden to the table via our kitchen. My mom always liked help in the kitchen which started my long-term romance with everything food-related. Living where we did, we weren't able to order delivery and really never ate at restaurants unless it was a special occasion. Instead, we got creative with cooking at home. I also grew up with a milk allergy which helped me learn from an early age the connection between what we eat and how we feel. As I've gotten older, my interest in food, health, and nutrition has grown dramatically and has largely impacted the way I cook.

Now when I visit home, I consider the luxury I have to be able to walk to the garden and pick a ripe tomato, add it to my dinner, and eat it within the same hour. There is no middle man, no chemicals, no unknowns in the process. I am also fortunate to have the ability to attend local farmer's markets to see all the colorful options that we don't grow at home coming from places I recognize like Albany and

Eugene, rather than other countries. I understand that many people have not had these experiences and don't have the time or ability to grow their own produce. Luckily, fresh, locally grown produce isn't very far away from almost anyone living in western Oregon. Therefore, I want to create a way to help connect people to food that others within this community have grown, through increased knowledge of how food is farmed, and what to do with some less common ingredients.

The summer of 2019 and 2020 I worked as a research assistant at a USDA entomology lab in Corvallis. Although our primary area of study was bugs, the reason the studies were conducted was to measure their impact on crops being grown around the Willamette Valley. One of the main experiments was testing the use of parasitoid wasps as means of controlling the fruit fly population which can wreak havoc on crop yields. Essentially, this means that tiny wasps parasitize the fruit flies in their larval stage so that they are unable to emerge, therefore offering farmers a means of pest control while decreasing reliance on pesticides. Another experiment which worked towards the same goal (limiting fruit fly infestation) used non-toxic artificial sweeteners in different solutions. The mixtures were sprayed directly onto berry plants to deter fly feeding and egg laying. Notably, both these forms of pest management do not eliminate all insects in the area but are targeted only on those which are damaging to crops.

One of my first field days in 2019 we collected samples from a cherry orchard. After finishing early, we were permitted to pick as many cherries as we wanted to keep, otherwise they would simply have been picked off and eaten by birds. Subsequently, we returned to the lab with multiple five-gallon buckets of

cherries. This sort of event happened repeatedly with different crops, and we were often left wondering what to make with the produce. Ideas and recipes were exchanged between us, and goods brought back in later to share. One coworker, a recent Virginia transplant, decided to take it upon herself to eat only locally grown produce for the summer after seeing everything that was produced nearby. This challenge intensified our search for possible recipes and ways to incorporate the abundance around us into our diets. Although we had first-hand knowledge of the farms where produce was coming from, most customers don't get to see behind-the-scenes. Before the summer of 2019, despite living here my entire life, I was completely unaware of many of the small farms in the area as well as programs such as CSA (Community-supported Agriculture) boxes. This inspired my desire to create a resource which local people could use in order to gain knowledge about where their produce comes from, as well as what to do with it when it is ripe for the picking.

I would like to pursue a career in nutrition following the completion of my undergraduate degree in biology. I have a passion for healthy food and sharing that with others. Additionally, if that food can be acquired with the knowledge that I'm supporting local business as well as the environment, all the better. I think this knowledge is especially important as it can sometimes seem more affordable to buy what's familiar and always "in-season" at the grocery store. I want to give some people the ability to walk through a farmers' market or stop by a roadside stand and know what they can make with the produce they find. In addition, I want them to

feel confident that their purchasing power is supporting the community and environment.

Literature Review

Why do Small Farms (and Supporting Them) Matter?

Small farms (averaging 2.2 hectares) feed a majority of the world's population with a minority of the world's cropland. Multiple international agencies "all estimate that small farmers produce up to 80% of the food in non-industrialized countries." This is mostly due to their focus on farming things which people can eat directly, rather than expansive monoculture crops which are then used to feed livestock or create biofuels (GRAIN, 2014). Within the United States alone, over 90% of farms are classified as "small" based on their income (NIFA, 2019). This reliance on small farms makes them crucial within food systems, despite the push to continue and expand large corporate farms.

A sizable component in the support of large conventional farming comes from the political power they hold, and the pressure they are under. Industries such as pesticide and herbicide manufactures have a large stake in maintaining them, and likewise have the power to support policy which maintains their position in the United States economy. The American Farm Bureau Federation (an insurance company and lobbying group) spent over three million dollars on lobbying in 2019 alone (Agricultural Services, 2019). Small farms, especially those which rely on sustainable farming practices rather than heavy chemical usage, lack the same support from lobbyists for agricultural policies which support their operations.

Similarly, as David Montgomery points out in his book on regenerative agriculture, “subsidized government programs, like crop insurance, penalize farmers who use complex rotations, and sometimes don’t even allow them... taking away artificial subsidies and changing crop insurance policies would shift more farmers toward adopting practices that can maintain yields while reducing both input costs and environmental damage” (2018). Before that change takes place, farmers may be unmotivated to alter current practices.

Beyond a lack of legislative support, NIFA (the National Institute of Food and Agriculture) recognizes that small farms also face “considerable challenges due to current trends, such as increased movement into cities, an aging population, farm consolidation, and changing weather patterns.” NIFA also describes small farms as being “vital to our economy and well-being as a nation” (2019). This touches on the community impacts of small-scale farming while implying the possible negative effects of industrial farming. Of 51 different studies that sought to determine the effects of large farms on individual communities, “57% found largely detrimental impacts, 25% were mixed, finding some detrimental impacts, and 18% found no detrimental impacts.” Although these results were based upon a variety of specific indicators, the authors cite that the “interests of industrialized farmers are often detached from or contrary to the interests of local residents.” This is especially an issue given the organization of corporate farms, which tend to be “owned by one group of people, managed on a daily basis by another person or group, and worked by yet another group” (Lobao, 2008). In contrast, small farms are usually operated

by people who live within the community, and therefore are vested in contributing beneficially to it.

Largely due to logistics, small farms tend to distribute their products within the surrounding area, rather than transporting them farther away. This means that the interval of time (and distance) between harvest and consumption is shorter, which benefits both the environment and the consumer. Shipping food via land, air, or even sea, contributes to global emissions which exacerbate climate change. In conjunction with transportation, “fertilizer and pesticide manufacture, processing, refrigeration and waste disposal, accounts for 30% or more of total annual emissions” (Moyer, 2020). The amount of emissions caused during transportation is more easily understood after learning that the average piece of fresh produce within the United States travels 1,500 miles from where it was grown before being consumed (Hill, 2008). From a nutritional standpoint, far more benefits are reaped when food is consumed fresh. As outlined by Diane Barrett, Ph.D., although supermarket produce may appear fresh, “...fruits and vegetables grown in North America may spend up to 5 days in transit following harvest before arriving at a distribution center. Transportation time for fruits and vegetables grown in the southern hemisphere... ranges from as little as a few days... to several weeks.” Following transportation, produce then usually waits on store shelves for a few days before being taken home and waiting there to be used, sometimes up to another week. This matters because after fruits and vegetables are “... separated from their source of nutrients (tree, plant, or vine) [they] undergo higher rates of respiration, resulting in moisture loss, quality and nutrient degradation.” In one particular study,

it was found that, “...vitamin C degrades rapidly after harvest, and this degradation continues during storage. Vitamin C losses in vegetables stored ... for 7 days range from 15% ...to 77%” (Barrett, 2007). Therefore, the less time produce spends between harvest and consumption, the more nutrients are retained. Even if a customer buys produce from their local grocery and uses it the same day, it may already be multiple days, or even weeks, old.

Although small farms don't necessarily all have sustainable agricultural practices, they are sometimes more likely to be able to utilize those methods. They also keep production close to consumers, providing a range of benefits. In general, “small farms are much better at producing and utilising biodiversity, maintaining landscapes, contributing to local economies, providing work opportunities and promoting social cohesion, not to mention their real and potential contribution to reversing the climate crisis” (GRAIN, 2014).

Sustainable Farming Practices (& Why Organic Doesn't Mean Sustainable)

NIFA states that the overall goal of sustainable agriculture is to “protect the environment, expand the Earth’s natural resource base, and maintain and improve soil fertility,” all while meeting the population’s needs for “food and fiber” (2019). Sustainable agriculture accomplishes this through a variety of farming methods such as planting cover crops, rotating crops, and eliminating tillage (USDA).

One of these methods with a variety of benefits is the use of cover crops. Cover crops are not grown with the goal of harvesting, but rather to benefit the soil itself. Cover crops increase CO₂ sequestration, increase soil’s moisture-holding capacity, decrease runoff, decrease erosion, and if chosen correctly, eliminate weeds (Brown, 2017). Additionally, “Cover crops provide side benefits, such as adding carbon and nitrogen to the soil, which reduces the need for fertilizers” (Montgomery, 2018). Sometimes considered the “father of natural farming,” Masanobu Fukuoka was one of the first to display incredible success using cover crops. On his farm in Japan, Fukuoka demonstrated how cover crops can help with pest management by planting clover which provided habitat for beneficial insects, while also crowding out weeds that would compete with his rice (Korn, 1981).

To reap the maximum benefit from cover crops, they are used in a rotation with the main crops planted for harvesting. Using crops in rotation has the ability to eliminate many crutches used by conventional farms. For example, planting cover crops in rotation is an effective method for defeating weeds by out-competing them for resources such as water and sunlight. In contrast, the use of herbicides is a continuous battle because weeds evolve resistance to them over time. Additionally,

“Complex rotations with irregular intervals can keep pests from adapting,” therefore also decreasing pesticide reliance which kills both good and bad insects (Montgomery, 2018). Another perk of crop rotation is in the soil itself, as “diversity drives soil health,” which then secondarily benefits plants (Brown, 2017).

Eliminating tillage is one of the primary methods which sets sustainable farming apart from both conventional and organic farms. As regenerative farmer Gabe Brown says, “all tillage destroys soil structure, reduces water infiltration, reduces organic matter, and increases weeds.” This explains the results of a study he conducted in which an organic farm with high tillage had no better soil quality than a no-till farm which relied heavily on synthetics (2017). The detriments of tilling are echoed by Montgomery on page 37 of his book: “Organic agriculture can prove as unsustainable as conventional farming when tillage is a regular practice” (2018). So, although recent years have seen upward trends in the use of organic farming, and many grocery stores now have areas dedicated to organic produce, organic is not necessarily *sustainable*. Rather, sustainable farming goes beyond simply limiting chemical usage to also consider the ways that other practices affect the farm.

Benefits of Sustainable Farming

Sustainable agriculture has the ability to offer a wide range of benefits for the environment for current and future generations. One of the most important things that sustainable farming has the potential to accomplish is the mitigation of climate change. According to a 2020 study by the Rodale Institute on regenerative agriculture, “global adoption of regenerative practices across both grasslands and arable acreage could sequester more than 100% of current anthropogenic emissions of CO₂.” By maintaining a continuous soil cover (through cover cropping) rather than having bare, tilled soil, the potential for CO₂ sequestration increases dramatically. Not counting water, about 47% of a plant’s structure comes from carbon. By constantly having plants growing, farmers are “taking carbon out of the atmosphere, and putting it into the soil” (Brown, 2017). Because sustainable farming also avoids the use of heavy machinery, carbon emissions generated by farming equipment may be greatly reduced. Most importantly, *healthy* soil has the ability to hold vast amounts of carbon: “Globally, soil organic matter contains three to four times as much carbon as either the atmosphere or terrestrial vegetation” (Moyer, 2020). It is through sustainable agricultural practices that the soil is able to capitalize on its potential as a carbon sink.

Like organic agriculture, sustainable farming avoids the use of synthetic chemicals. This is extremely important for maintaining healthy ecosystems, especially waterways. The chemicals (pesticides, herbicides, etc.) used by conventional farms do not stay only where they are applied. Partly due to the reduced soil quality often found at these farms, the chemicals are not entirely

absorbed and instead are washed into waterways with heavy irrigation or rainfall. One large problem with runoff from farms is that “Nutrients like nitrogen and phosphorus [which] are essential for growing crops, can also trigger algal growth in rivers, lakes and bays.” Beyond the extreme impact of algal blooms on aquatic life, “Agricultural runoff flows into the lakes and rivers that hundreds of towns draw their water from... Water treatment plants spend millions on chemicals to clean up that surface water” for municipal consumption (Swanson, 2013). Heavy chemical usage has lasting impacts on the environment, our own health, and the health of the economy.

Although there are conflicting results depending on what is specifically being tested for, sustainably grown food may be more nutritious than conventionally grown produce. A 2014 meta-analysis found that “organic crops... have substantially higher concentrations of a range of antioxidants and other potentially beneficial compounds” in addition to “lower levels of pesticide residues on produce and lower concentrations of the metal cadmium” (Aubrey, 2016). There are a wide range of reasons for these nutritional differences, though Brown attributes them in part to soil carbon, which “is the key driver for the nutritional status of plants - and therefore the mineral density in animals and people” (2017).

As it is named, the primary push behind sustainable farming is that it can be maintained for generations to come. Farming sustainably decreases soil degradation (caused by heavy tillage, chemical usage, and monoculture crops) which is the root of most agricultural problems. Some argue that sustainable farming is not enough, as sustaining a broken system benefits no one. Rather, agriculture has the potential

to also be regenerative, and reinvigorate the degraded resources generated by years of conventional farming (Brown, 2017).

Arguments against Sustainable Ag: Yield and Profitability

Endless contradiction appears when comparing small and large farms, as well as sustainable and conventional farming. This primarily stems from the immense complexity of the subject, and what data is included in each comparison. Two of the largest arguments, both for and against sustainable farms (depending on who is asked), is productivity and profitability. In general, large corporate farms are more profitable and more productive, however this does not take into account how they are operating. When profitability and productivity are considered while also examining resources such as land and chemical usage, smaller sustainable farms often come out on top.

One of the largest arguments against sustainable farming comes from their yield, or “productivity.” Montgomery deftly addresses a large study conducted in 2014 in the journal of Nature which highlighted some of the distrust of regenerative agriculture’s productivity. This particular meta-analysis reviewed,

“610 previous studies [which] compared conventional practices to no-till practices, in various combinations with the other principles of conservation agriculture (cover cropping and crop rotation). Averaged across all the data, no-till practices decreased crop yields by almost 6 percent. In drylands, however, adoption of all three conservation agriculture principles increased yields by up to 10 percent over conventional practices. And after three years

of no-till, crop yields from fields that followed all three principles (no-till, residue retention, and crop rotations) were indistinguishable from conventional fields” (2018).

The key to understanding the results was seeing that multiple sustainable practices must be combined in order to increase yield. When considering how the biosphere works together, it’s not enough to simply stop tilling but continue with other harmful practices. This finding is echoed by the Rodale Institute’s 2020 report on regenerative agriculture wherein they say that when studies have found a gap in yields between conventional and organic farming, it’s most prevalent when “practices used in organic [farming] mimic conventional, that is, when the letter of organic standards are followed using an input mentality akin to conventional chemical intensive agriculture.” Conversely, regenerative agriculture takes a holistic approach to farming rather than “simply replacing conventional chemicals with organic-approved chemicals.” When keeping in mind data collected on farms using regenerative practices: “Actual yields in well-designed regenerative organic systems, rather than agglomerated averages, have been shown to outcompete conventional yields for almost all food crops including corn, wheat, rice, soybean and sunflower” (Moyer, 2020).

It’s a common misconception that fertilizers are necessary to produce enough food for a growing population, and without them, the yield of sustainable farms cannot compete. However, this fails to take into account that adding more fertilizer to crops cannot indefinitely increase crop yield, as well as the data which suggest adding fertilizer to already healthy soils does not increase yields. Rather,

eventually production rates influenced by chemical additives plateau and yield depends largely on the fertility of the soil in which the plants live. So although agrochemicals can help produce more food, it is only when the plants need the fertilizers because their own soil is too depleted (Montgomery, 2018). Likewise, with some plant species, providing fertilizers encourages plants to grow bigger, however, this means they put less energy into seed production. For example, on Mr. Fukuoka's sustainable rice farm, his neighbor's chemically treated fields had larger plants, but averaged only about 125 grains per head compared to Fukuoka's 225-250 grains per head. His yield was therefore "comparable to the yields of modern commercial agriculture" without the use of synthetics (Korn, 1981).

Another issue with the focus on producing higher volumes of food comes from the amount of food waste present in our current system. Just within the United States, we waste around "133 billion pounds of food each year, more than enough to feed the 50 million Americans who regularly face hunger" (Montgomery, 2018). That weight is roughly 40% of all the food produced in the United States each year, which ends up costing "approximately \$218 billion per year." Additionally, some of the reasons behind food loss, such as overproduction or food being left in the field due to "damage by weather, pests and disease" could actually be reduced by adopting non-conventional farming practices (Food Waste). If this issue is not addressed first, increasing yields may just increase waste.

The other leading argument against sustainable farming, which is tied to yield, is profitability. According to Brown, "[s]oil carbon is the key driver for soil moisture holding capacity, frequently the most limiting factor for production" and

therefore “soil carbon is the key driver for farm profit.” As outlined above, sustainable farms often have considerably more soil carbon than conventional farms. Likewise, when crops grow efficiently from rich soil, they are able to pull the resources they need (carbon, nitrogen, etc.) from their environment, rather than needing farmers to pay for added inputs (2017). Similarly, without reliance on heavy machinery to plow fields, sustainable farms may save money on decreased machinery and machinery maintenance. One farmer visited by Montgomery said that, “soon after switching to no-till, they noticed big reductions in their water use, and substantial savings from lower diesel and chemical bills” (2018). Therein it is important to understand that sustainable farms are at least in part profitable because they may spend less to operate.

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Local Farms

Lucky Crow Farm

Lucky Crow was recommended to me by my academic advisor because he knew the farm was near campus and was familiar with the women who run it. Lucky Crow met the criteria that I initially wanted farms to meet before I selected them for my project: they are very local, lack recipes on their website, and have a clear focus on sustainability (with a bonus focus on women empowerment). Lucky Crow is operated by owner/farmer Eden and farm manager Ash. They have a unique distribution of land, featuring a family farm in Monmouth, as well as two additional “urban sites.” These sites help to foster “agrihoods,” which are neighborhoods that incorporate agriculture into their community to increase connection between where people live and the food they eat. Although Lucky Crow Farm is not certified organic, based on their answers to my questions about their farming practices, they have a clear grasp on how to farm in a way that’s beneficial for the Earth. I did not ask why they are not certified organic, however it’s an expensive process which must be renewed yearly.

Lucky Crow’s Monmouth location has been farmed continuously over the past 50 years. To have continued success in the same location without the input of many chemical additives means that the soil likely isn’t being too degraded by their farming techniques. Eden told me that the farm rotates their crops, incorporates cover crops in their rotations, only uses certified organic fertilizers, and uses no herbicides. They manage pests with row fabric, and manage weeds with more fabric, mulching, and a variety of ergonomic hoes. When I asked about tillage, which is

often the separating factor between organic and sustainable farming, she said that although they do till the soil, they try hard to limit it because they have learned “soil that has been under cultivation for longer tends to have more organic matter and needs less tilling.” They increase organic matter through the season by adding compost and leaves which will decompose and nourish the soil, reducing the need for tilling later. So although not certified, their practices are on par with other organic farms and their attempts to limit disturbance by limited tilling may even give them better soil quality than some organic farms.

Persephone Farm

I came across Persephone Farm while searching online for farms still local to the Willamette Valley, but that I may not have seen at the markets I usually attend. Right away they were quick to respond and enthusiastic about helping me with my project and answering any questions I had. Persephone Farm is located in Lebanon along the South Santiam River and is certified Salmon-Safe (meaning they’re committed to protecting their neighboring waterway). Founder Jeff Falen, who passed away in December of 2020, certified the farm as organic when he first started farming the land in 1985.

As is required for any farm to be organic, Persephone rotates their crops, and utilizes cover crops such as “buckwheat, sudan grass, hairy vetch and wheat mix, and a red clover, wheat and perennial ryegrass mix.” They use no herbicides, and what pesticides they do use are approved safe for use on organic farms. For example, they use chrysanthemum derived Pyganic which works to manage flea

beetles. However, it's important to remember that organic chemicals can still be quite harsh. Persephone also does use tools such as a rototiller to prepare their soil for planting, and they manage weeds with the use of "a variety of steel tools mounted to a cultivating tractor to mechanically uproot, cut and bury weeds." This means that, like many small farms, they're edging their way towards a sustainable practice while probably not being completely there yet.

Persephone Farm meets all criteria for being organic, but they also try in earnest to make their farm sustainable beyond their farming techniques. They have solar panels which provide 80% of the farm's electricity, including charging the batteries which run their tractor. They try to use efficient vehicles to transport their produce to markets and have done away with incandescent light bulbs anywhere on their property. They are also very meticulous about their recycling process, which is detailed with photos on their website. Although their website does contain recipes, they're buried away in an archive only accessible by a tiny link at the bottom of their page. This meant that I was still comfortable selecting them as one of my farms, and I even adapted one of their recipes in my booklet.

Sunbow Farm

The sign for Sunbow Farm is one I've driven by almost weekly for as long as I can remember. They're a common name in the Philomath/Corvallis area, so it made sense that I would reach out to learn more about their farming practices. Senior farmer Harry MacCormick did more than start Sunbow in 1972, he was also co-founder and first executive director of Oregon Tilth, and he helped to establish the

Corvallis Saturday Market as a way to sell his produce. Sunbow's roots run deep, and touch more than their farm alone.

Certified organic since their beginning, Sunbow farm spans 15 acres on the outskirts of Corvallis. They meet all the regular organic requirements such as using cover crops (fava beans, buckwheat, daikon radish, etc.) and crop rotations. They don't use chemicals against insects, and actively work to support beneficial insects like predatory wasps by using cover crops selected to support their populations. Weeds are managed with mulching and crop rotations instead of harsh chemicals. Rather than using a rototiller, they opt instead for a dutch spader because it "causes less structural soil damage." This shows that they have knowledge of the importance of soil and maintaining its integrity as much as possible. Sunbow was a great choice for this project not only given their solid agricultural practices, but also their strong connection to the community and Corvallis' local food scene.

Project Reflection and Challenges

After conducting research on sustainable agriculture, the next step in the actual creation of my thesis project was reaching out to local farms. My goal was to learn about their farming practices to see if they aligned with those which are necessary for farming sustainably. Before beginning this process, I had no idea how many small farms there were in the area, even as someone who considers themselves fairly connected to locally grown food. There is no master list which says what small farms exist or where, so I genuinely began with Google searching. Some farms had thoughtful websites, some had very dated websites, some had just a Facebook page, and others had nothing more than an address or phone number. Looking through websites was helpful to begin with, because it allowed me to weed out some candidates without putting in effort to try and speak with them. For example: I met with a family at a farmers market in Salem which seemed like a really wonderful candidate for my project, as they advertised using the indigenous practices of their ancestors. However, after some online research of my own, I found some unsavory information about their operation including issues with police interactions as well as possible illegal zoning of their farm itself which had raised complaints within their community. While looking around online did provide a rough starting point for me, I soon learned there were far more farms than what I initially found online. By

visiting farmers markets and scouting roadside stands I was able to gather a larger list of operations within the area.

I had originally planned to send out a generalized questionnaire to every farm I could contact so that I could learn about their practices and then choose the most sustainable farms to highlight in my guide. However, I soon learned that getting any response at all was the biggest hurdle facing me. I had many unanswered, inconclusive emails (and follow-up emails), Facebook messages, phone conversations, and face-to-face interactions. Although I spoke with those at the farm booths, they were usually not the farmers themselves, as they were kept too busy to spend their afternoons at the public markets. Some people told me they were very interested in my project, but as one woman said, the farmers were lucky if they “didn’t have to eat breakfast standing up.” So while I thought I was making things as easy as possible with my short questionnaire, even that proved to be too time consuming for most of the farms to fill out during their busy summer season. Following up during the winter months also didn’t yield very much cooperation.

In total, I reached out to 16 different farms either via email, phone, or in-person. Despite varying levels of correspondence, only five farms actually completed my survey about their practices. Of those five, I only felt that three of them met the qualifications I was looking for in order to complete an editorial on their farm. I had hoped to have plenty of feedback to sort through, rather than what actually happened. This changed the way in which my project was structured because I was unable to be very selective about the farms I chose. Instead, I was highlighting what practices they had that were most sustainable, rather than which

farms were most sustainable overall. So, the first challenge was not really the willingness of the farmers to participate, as they all seemed interested and wanted to help me, but rather their availability. The challenge I was anticipating was finding farms which used sustainable practices, however the majority of the farms which frequent small local markets already use fairly environmentally friendly practices.

Beyond learning about farming techniques through research, I also learned about the relationship between customers and the produce they purchase by spending time away from my desk. While exploring local markets with more curiosity than previous visits as a mere customer, I learned that there seems to be a very binary conversation happening around agricultural practices. Before beginning this project, I also fell prey to this dichotomy. As a shopper it's easy to think that farms are either large/traditional/bad, or small/organic/good. By shopping at a local market, one assumes they're making the best possible choice, and that all farms use practices which are environmentally friendly. Within the farmers market there is a hierarchy, where farms which advertise and flaunt their organic certifications are in the top position. Unfortunately, a focused importance on organic certification excludes many farms that have wonderful practices but do not pursue certification for a variety of reasons. Certification is tedious, requiring yearly renewal which includes paperwork, inspections, and fees. It can also be expensive, especially for small operations which don't necessarily have a very big profit margin. For example, there's a non-refundable initial application fee of one thousand dollars, a 750 dollar renewal fee, plus 108 dollars for every hour an inspection takes (with a minimum of four hours required), and a variety of other

potential fees. Clearly, this favors farms which are able to pay these fees, regardless of if they're farming any differently from the stand beside them which is not certified.

Sustainability also isn't something I found to be advertised by many farms, although I did see some signs with words such as "biodynamic." This isn't very surprising, given that sustainability is somewhat difficult to define, and it's probably often assumed to be synonymous with organic. Additionally, most consumers probably don't interview the people they're buying from or know which questions to ask to determine if a farm is good for the Earth. Since my project began, I learned that there's a new label available as of 2017: Regenerative Organic Certified. Building upon the usual organic certification, this takes into account sustainable, regenerative farming practices. I think that, given time, farms which obtain this level of certification would be more desirable than simply organic. Although this has been around for three years, I have never seen anything labeled as such. And while this new bar is a good motivator for businesses, it still raises the issue of certification as an obstacle for farms to attract customers, regardless of how they actually operate.

Admittedly, arguing about which farm to support within a local market based on their levels of sustainability is being very particular. If everyone did their grocery shopping from local farms, the planet would likely be much better off, regardless of which stall they buy vegetables from. However, I do think it's important to realize that even small organic farming can be an unsustainable choice over time. So, if a customer's focus is to buy in ways which protect the Earth now *and* tomorrow, it's often unclear which stand is superior. If customers choose to ask questions and

make sustainability a driving aspect of their purchasing decisions, perhaps more operations will try harder to adhere to sustainable farming standards.

Overall, this project was a wonderful learning experience which forced me to get out of my comfort zone, make time for playing with my food, and learn more about how agriculture (and my own spending habits) impact our planet. I would very much have loved to talk with more farmers, go to more markets, and develop more recipes, but all things considered (ie. an insane year finishing my degree full-time during a pandemic) I'm happy with the result.

Covid Challenges

The COVID-19 pandemic certainly provided an extra level of complication to the hands-on portion of my project. The pandemic impacted most industries, farming included. While the life of a farmer (especially during harvest) is already notoriously busy, 2020 made it worse for many. Some of the farmers I spoke with told me about how their businesses had been affected by the situation. One of the farms I was in contact with, Persephone Farm, is taking a sabbatical starting at the end of their CSA season for the first time in 35 years. This is due to the challenges caused by the pandemic in conjunction with staff changes and the loss of their founder Jeff Falen. Other farms such as Sunbow which normally have roadside stands, have closed those stands for the foreseeable future following Oregon's COVID outbreak. Instead they, like many others, turned to online orders. For farms which already had this in place, the transition was fairly smooth. Other farms that were unfamiliar with the process had to take time to develop their online systems

before being able to use them. Online orders supported many farms, but also kept them very busy, especially when delivering orders added another new component to their operations.

Business was also lost due to the closure of many local restaurants which would normally order from surrounding farms. In addition, although farmers markets were still largely open to the public, they offered fewer vendors than usual, as well as limiting numbers of shoppers in order to adhere to proper social distancing guidelines. Thus, the inability to attend farmers markets consistently (due to limited vendor space or personal precaution) negatively impacted some farms as well. As icing on the cake, towards the end of the summer Oregon's extreme wildfires meant closed markets and harvesting delays.

For my project specifically, these limitations meant reduced access to the people I was trying to learn about, and it meant farmers had less time to help me while simultaneously trying to adapt to the challenges of the year. As outlined in my original project proposal, I had hoped to actually go and visit the farms which had the best responses to my questionnaire. The goal was to speak with the farmers in person to get a better feel for them, given that most of the original contact took place over the phone or via email. On location, I wanted to see more about how their techniques actually worked and take photographs for later use alongside their editorials in my recipe booklet. Unfortunately, this was another area where I grossly overestimated how many farmers would have time to help me. On top of such few responses to my inquiries in the first place, no one was very keen on inviting visitors to their farms given the current situation.

In an attempt to combat these additional obstacles, I was very persistent with my efforts to make contact with the farms I could reach directly. I spoke with a farmer from one market stand which piqued my interest and proceeded to contact her seven different times throughout a span of six months. She responded more than once to my emails saying she'd like to help, but eventually stopped responding. This happened with multiple farms, which is really disappointing because they often advertised their farms as having environmentally friendly farming practices or growing a specialized crop which I really wanted to use in a recipe.

Recipe Originality

The next challenge came from my desire to create original recipes. In theory, it seems simple enough. In an effort to ensure my recipes were original, I began by planning the recipe and then searching online to see if someone else had already made it. Sure enough, over and over again, almost identical versions already existed on the endless food blogs circling the web. However, this happened because I was making very specific searches. The point of making the recipes was really so that people have the idea to make something particular in the first place, instead of starting at square one with "what to make with fennel." So, in this sense, a lack of originality isn't something which suddenly makes my recipes not worthwhile.

After realizing that truly original recipe creation was going to be more difficult than I had hoped, I started to wonder how much alteration to an existing recipe was sufficient for it to be deemed new/original. No one seemed to have a clear answer on this. I even reached out to one of my favorite food podcasts hoping

for some insight, to which the producer mainly replied that I should “go with my gut.” After sifting through countless food sites, it was apparent that most authors gave credit to someone else as the foundation of their recipe, and then made their own modifications and adjustments. The result could be considered entirely new depending on those alterations, or it could be seen as a new twist on something preexisting. Although I refused to entirely abandon the idea of creating unique and original recipes, this did give me the idea that I might use some of the recipes buried deep in the archives of these farmer’s websites, give them my personal spin, and bring them back out into the open. For example, Persephone Farm uses wonderful farming practices, but I was hesitant to choose them because they have a seasonal recipe archive. However, the recipes are only accessible through a small link at the bottom of their website, and only a couple of them have an accompanying photo. I reworked one of these old recipes for my project, and it came out great.

I also began this process with the hopes that I could create recipes for less commonly used items so that people would then be more likely to purchase them after knowing how they could be prepared/used. This would be especially important given that local farmers sometimes grow specialty items not regularly available in grocery stores. This posed a personal challenge because, even as someone who is an adventurous eater, I hadn’t eaten some of the items I decided to work with. Additionally, I had hoped that I could use ingredients that were unique to the farms I was working with. For example, some farms grow specialty crops or focus entirely on certain crops that others don’t have. This seems especially true for fruit/berry farms versus vegetable farms. In my recipe booklet, I planned to pair

recipes using these specialty items with information about the specific farm where they were grown. This may have worked with participation from more farms. Instead, I learned that because the farms all operate in a fairly close proximity (within the Willamette Valley), they tend to grow almost all of the same crops, with lots of overlapping between farms. Thus, while each highlighted ingredient in the booklet can be purchased somewhere at a local market, it may be grown at multiple farm stands or only a select few.

Recipe Evolutions

The first item I wanted to tackle was something I had only eaten a handful of times, and honestly wasn't that fond of: **fennel**. I read once that someone thought fennel was unpopular because it looks intimidating and exotic, so people worry they can't handle it. My previous experience had been eating fennel raw in a salad, in which case it tastes very strongly of black licorice. This could be appealing for fans of licorice, unlike myself. After doing some experimenting in the kitchen, I learned that it's much milder after being cooked so I decided that was how I would use it. I began by looking through some different websites, looking for inspiration. Eventually I decided to attempt a cauliflower and fennel gratin, which was approved by my family but taught me an important lesson: I need to make what I like first *then* get input from others. Personally, I thought it was too heavy and one-note, lacking much fennel flavor at all.

Fennel isn't extremely popular from my experience, which means there aren't myriads of recipes already highlighting it. This afforded me the opportunity to

be a bit more original. I didn't like how it became so hidden within the gratin I made, so I looked for a way to make it stand out more, without being as bold as when it's completely raw. I had made a mushroom galette a while back, and it seemed like a good way to elevate the fennel while still having lots of freedom on filling. My first fennel galette was an all-purpose flour crust seasoned with some thyme and filled with pre-roasted fennel and onions. While the crust baked nicely, there wasn't really any dominant flavor (it was just okay). To add some interest, I decided to incorporate apple for some sweetness on my next attempt. While this was an improvement, it still wasn't what I wanted, and the flavors still kept blending together too much. I had seen fennel paired repeatedly with sage and gruyere cheese when I had been looking for gratin inspiration, so I decided to use those in combination with what I had already started. My fourth attempt with fennel was a whole wheat crust seasoned with sage and garlic, filled with sweet apples, onions, fennel, and gruyere. I also found that if I skipped roasting the fennel and onions beforehand, and placed some fennel on the very top of the galette, the flavor came through much better because the pieces on the top cooked slightly less and stayed a bit more crisp, therefore giving both mild and stronger fennel flavors together. I've done some brief Google-searching and haven't found this same recipe elsewhere, making it my first original!

During my internet deep-dive into the world of fennel, I also found that it's possible to use the fronds (the top fluffy strands). It seemed like a good idea to incorporate a way to use fennel fronds so that food waste would be decreased (otherwise you just use the bulb and toss the other $\frac{2}{3}$ of the fennel). Additionally, I

have seen that farmers markets tend to offer the full fennel while grocery stores often chop off a considerable portion of the fronds. This was my fastest recipe by far: I just tossed ingredients into my food processor and adjusted while I went. Unlike most basil pestos, I used walnuts rather than pine nuts simply because they're much more affordable. The finished pesto is an interesting flavor, quite different from a traditional basil pesto. However, I did find that it is amazing mixed into scrambled eggs, and I will definitely keep making it for myself just for that reason.

Next up was **kohlrabi**: fun to look at, weird to eat. Growing up it was one of my grandpa's favorite vegetables (he liked it raw with salt), but I've never really been a fan of their radish flavor. Rather than making an extensive recipe, I saw somewhere that it can be used as a chip, which inspired me to make a healthy chip-and-dip combo. My first attempt was a complete failure, they came out entirely charred when I followed a simple recipe I found online which really just told me how long to cook them and at what temperature. My second attempt was to use them for a sauce because they could be cooked down and still remain a nice thick consistency. Unfortunately, upon steaming they became so mild they were indistinguishable from a boiled potato.

Thus, I decided keeping its raw form was the best option, otherwise it wasn't really worth using. It has a nice crunch and a slight spice, so I thought it would hold up nicely when diced as in a salsa. I really love a nice mango salsa, but in keeping with local ingredients I decided nectarines would work just as well (and hold up

more firmly than a peach). From there I just included some classic salsa ingredients like tomato, jalapeno, and cilantro. It turned out pretty well, and was good served on pork chops so that's how I chose to photograph it.

Summer in the Willamette valley brings with it many things, including lots and lots of ripe **berries**. Berries are obviously wonderful for pies, although a warm, heavy dessert isn't best served on a hot summer day. Scorching temperatures and endless sunshine calls for something much cooler, enter: my PB&J ice cream. This recipe was not formulated specifically for this project, instead it's just something I've made for myself over the years, inspired by my dad's fervent love for the classic sandwich. My mom suggested I include it in my project and when I looked online to see if similar recipes existed, they approached the flavors quite differently. Rather than using powdered peanuts like me, they all called for incorporating large amounts of actual peanut butter into the ice cream. I've never attempted to do this, but I imagine that my powder method is easier and lower in calories (but who's counting). The powder also makes it easy for the individual to adjust the level of peanut butter flavor to their liking. I personally prefer a subtle peanut flavor that isn't too overwhelming and reminds me a bit of a Dairy Queen blizzard. I've made this recipe repeatedly using strawberries, raspberries, even blueberries, although I found I liked raspberries best because of their seedy texture juxtaposed with the smooth ice cream base. Another beauty of this recipe is that it's the perfect way to use overly ripe berries that are just too mushy to eat straight anymore. Anything that saves us from wasting nutritious produce is absolutely a win.

When it comes to working in the kitchen, although I often cook from necessity, my true passion lies in baking. Baking is, however, considerably more nuanced than cooking, which made recipe-creation a longer process. Despite this, I was determined to create at least one decent baked-good for my project. This seemed like the perfect opportunity to highlight a really beautiful, wonderful, underappreciated ingredient: **persimmons**. I usually eat them in salads because their sweet tanginess reminds me of a tomato crossed with a peach, but there's no reason they can't be baked instead. I wanted to keep in mind my audience, who may be less likely to spend hours putting together a multi-layer frosted work of art, so instead opted to make a simple cake. Persimmons aren't ripe until late fall, and therefore I wanted to match the flavors of the season and make some sort of spiced cake. This also presented an ideal way to incorporate another ingredient prevalent in the Willamette Valley: hazelnuts. Persimmons are somewhat tricky to use because when they're ripe they are also very soft, so most recipes use them by mashing the fruit into their batter rather than trying to maintain their structure. While this is a great way to add moisture and sweetness, I wanted to highlight persimmons in a purer form, so I had the idea to top my cake with them. I thought that they would cook down in the oven and therefore they would be great on an upside-down cake (so that they would make a gooey topping when the finished cake was turned out).

To begin this cake, I first listed out the ingredients I knew I wanted for their flavors: ground hazelnuts, cardamom, and persimmons. I'm always looking for ways

to make baked goods healthier, so I knew I also wanted to use whole wheat flour and honey as a primary sweetener. This is where I began to find the joy of recipe creation because I didn't have to sort through a million recipes to find one that met all the criteria I had for myself, I could just make my own perfect ingredient combination! Next, to avoid mixing random amounts of ingredients together and likely failing terribly many times, I researched similar recipes to see what ratios they used of dry and wet ingredients, and how much of other necessities such as eggs and butter. After looking at four different recipes (including an almond honey cake and a spiced pear cake) I determined a starting point from which I could adjust. Perhaps most importantly, I was able to compare the different oven temperatures and baking times they used from which I could formulate a general idea of what to start with. My goal was to make a dense, spiced, single-layered cake with a sticky persimmon topping which could be the right sweetness for either a breakfast or a dessert.

The first attempt was not at all a failure, which was encouraging. The levels of spice and sweetness were perfect; however, it ended up pretty dry. I think this was due to using honey and oil which resulted in the exterior cooking quite a bit faster than the interior. I also completed the first run without the persimmon topping in an effort to isolate each component separately. My second attempt included greek yogurt to increase the moisture in the cake, and I included the persimmon topping: this was an absolute disaster. The persimmons didn't cook down and become as gooey as I was hoping for, and the cake with the added yogurt was far too dense. For my third attempt I began by cooking down the persimmons in

a saucepan before adding them to the bottom of the cake pan and topping with batter. I also decided to use half all-purpose flour and half whole wheat flour in an attempt to improve the cake's texture. Whole wheat flour tends to soak up more moisture than regular all purpose, so I thought this might help. I also didn't want to have to omit the hazelnut flour, which in the last round with the yogurt resulted in a gluey texture. This time the result was okay, but still not where I wanted it to be.

By this point I had tried to make this cake three different times. I didn't feel like the persimmons were being highlighted enough, and the texture of my cake still wasn't there, so I decided to try making some bars where the persimmons could remain chunked within the batter. Although the flavors were good, I felt that the spices overpowered the delicate persimmon flavors too much; I needed to find a new approach. I came across a recipe for persimmon almond scones by a cooking blog called *Scaling Back*. Scones seemed like a great idea, and I decided to leave behind heavy spice flavors in favor of something lighter, which is also a personal favorite: coconut. I changed the recipe by adding hazelnut flour in place of almond, making a reduced coconut milk in place of the milk called for. They came out well, however the persimmons I used were very ripe and therefore the dough was very wet and sticky. My second attempt included a bit more flour, frozen fruit chunks, and regular, thinner coconut milk. I also decided ginger would complement the coconut and persimmon so I incorporated ground ginger and some chopped candied ginger into the mix. The scones certainly aren't traditional, as the ground hazelnuts kept them from really forming the classic scone air pockets, however they did still

come out with a lovely dense but flaky texture inside and a crispy exterior. *Finally*, I was happy with the finished result.

Working to always be original is a tiring and challenging process. To give myself a bit of a break, I chose to take a tip from all the food blogs I'd been looking at, and make a recipe based off of one that already existed. One of the farms I worked with was Lebanon's Persephone Farm. When I originally planned out my project, one of the criteria for what farms I chose to highlight, beyond their farming practices, was choosing those which didn't already have elaborate websites dedicated to recipes using their produce. After a lot of snooping around on Persephone's website, I did find that they had recipes, although they were only accessible by a small link at the bottom of their site. Furthermore, they were formatted in an uninviting way and almost all of them lacked photos. So, rather than wracking my brain for another original recipe, I decided to rework and modify one of theirs. I chose their **quiche** recipe because I had never heard of making a crust from squash, and because my good friend has celiac disease, and the recipe was gluten free.

I began by making the recipe as it was posted on their site, without adjustments. It came out okay, but also showed me clearly the things that I wanted to change. First, their recipe called for $\frac{3}{4}$ c grated carrot and summer squash, which I didn't feel like made enough crust when spread into a pan so I increased the amount to a cup of each. With that adjustment I also increased the rice flour and butter to maintain the correct consistency for the crust. Their original recipe was

somewhat haphazard, offering a lot of optional suggestions like, “add 1 c milk if you like milk, otherwise add ½ c water.” I thought this was confusing, especially for people not overly comfortable in the kitchen, so I made more concrete decisions in my own recipe. They also suggested lining the crust with basil leaves which, although fun and pretty, seemed unnecessary. Instead, I preferred to mix chopped basil into the filling to save time and get a better distribution of basil in each bite.

One of the primary issues with the original recipe wasn't with the ingredients, but with the directions. The recipe instructed readers to roast their shallots and broccoli at a different temperature than the crust, but at the same time. This would be inconvenient for most people with one oven, so I experimented with roasting the vegetables at the same temperature as the crust in order to eliminate the need to juggle varying oven temperatures. I also experimented with not roasting the vegetables beforehand, but found the texture was improved by doing so. I experimented with using different types of cheese in the quiche, but I think this does allow for an area of customization. As long as the cook uses a hard cheese they enjoy, any kind would work. In total, I made this recipe three different ways until I decided it was adjusted to my liking. I also discovered that it was best when made with extremely sweet summer carrots. This makes for a really wonderful sweet and savory combination. Overall, the quiche is great as breakfast or dinner, and the only feedback I received from those who tested it out was to remind readers to grease their pans.

Following the success of the quiche recipe revamp, I decided to adapt a Bon Appetit recipe I really enjoy for a **dip** made mostly from roast carrots. I had made the dip many times in the past and found that sometimes it would come out an unfortunate, muddy color. The vibrant market produce inspired me to remake the recipe using purple carrots and adding in purple beets, for a picturesque spread. Although I'm an avid carrot-muncher, I don't like beets in many ways; this dip is the exception. It's also a very forgiving recipe, so it could easily be adjusted for different sized bunches of beets or carrots. My pictures for the dip didn't turn out very well because it is such a dark purple, but I decided it was still worth including.

As I was thinking about how to highlight certain produce, I often found myself realizing that perhaps the best iteration of it was simply eating it straight off the plant. I have never been a fan of **apricots**, but it was only a few years ago that I had a fresh apricot, not dried out and chewy. It is this fairly newfound love that inspired this tart recipe. Making tarts is a super customizable way to highlight your favorite seasonal fruits however you see fit. For this tart, I began by thinking about what flavors I would pair with fresh apricots and decided it would be interesting/different to try a coffee crust. I planned to pair this with a creamy filling made with one of my favorite dairy products for incorporating into sweets: mascarpone cheese. I also wanted to sweeten the filling with honey given that any spring/summer farmers market is sure to have at least one vendor selling a variety of locally produced honeys in flavors ranging from lavender to jalapeno.

I began by researching types of tart crusts so that I could adapt accordingly. I first chose the recipe commonly used for making shortcrust, and where it called for a tablespoon of water I first dissolved espresso powder before adding it to the mix. Likely due in part to chilling for too short of a time, this dough came out sticky and didn't hold its shape in the oven.

For my next attempt, I switched tactics and chose a recipe for a sweet short crust, which uses an egg instead of water for binding. Here I sprinkled espresso powder directly in with my dry ingredients rather than dissolving in water first. It's very common to chill the dough, place it into the tart pan, and then chill it again before baking. I hate waiting for things to chill and trying to fit a tart pan into a fridge I share with three other people isn't an easy feat. So I experimented chilling one part of the dough for a second time before baking, and sending the other part of dough straight to the oven. The bake differences were negligible. This crust didn't shrink and came out very sturdy for easy tart construction. Unfortunately, I followed the recommended bake time and felt that it was slightly overbaked, so I made it again with a shorter cook time. Just to be sure I was making the best option, I experimented with a third type of pastry dough, which results in a crumbly shortbread-like crust. The appeal was also that this type of dough requires no refrigeration between mixing and cooking. Although it came out well, and the texture was perhaps even better for eating, the crumbliness means it didn't hold up very well for removing from a pan and assembling a tart. This takes away the ability of picking up a tart to munch and instead needing a plate and fork.

The filling was a simple combination of room temperature mascarpone and greek yogurt blended with honey. I used plain honey made by Winters' Apiaries in Dallas, but I think any flavor would be wonderful, especially something with a floral component. In the past I've always made mascarpone fillings and frosting by first whipping heavy cream and then folding in the cheese, but greek yogurt helped me to eliminate this step and add a bit of tang. Finally, I had to decide what to do with the lovely apricots. I think they would be great simply sliced and placed on top, but to add a little more flavor I chose to lightly cook them with a little butter, vanilla, and cardamom. Once cooled I topped the tarts with them. Overall, I'm very pleased with the flavor combination and the way these tarts are able to highlight both locally made honey and apricots.

Fast forward into the school year, and the warm, sunny farmers markets with their colorful options have been replaced with (somewhat muddy) winter markets. Although many offerings are available year-round, there's certainly less to choose from. For my next recipe I wanted to embrace winter produce and try and do something fun with an otherwise boring root vegetable. One such veggie which I haven't eaten much of in my life is the humble **parsnip**. I love carrots, but the slightly bitter flavor of parsnips wasn't something I could easily get behind. The most common use for root vegetables was to cook them down for soups. In an effort to do something different (and eat more vegetables throughout my day), I thought about how I might incorporate a root vegetable into my breakfast.

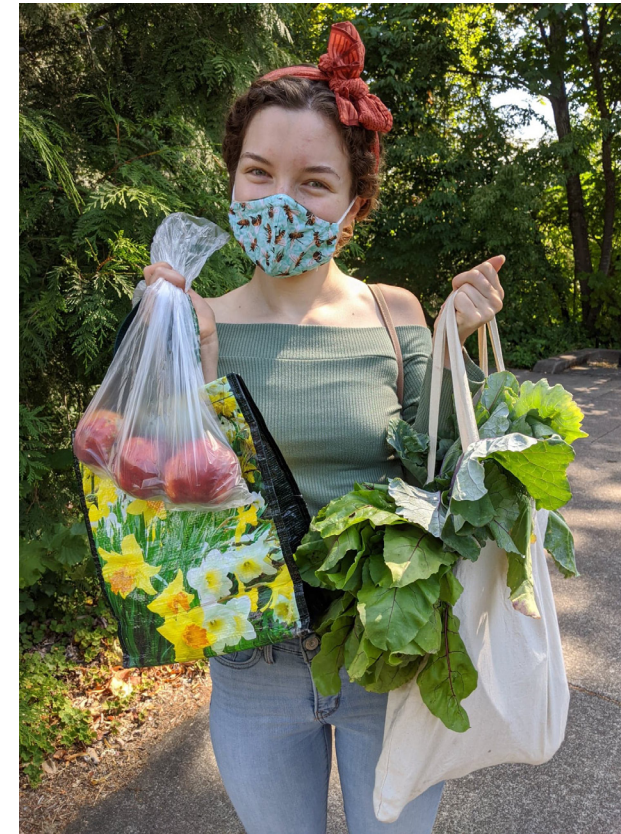
Parsnip waffles, although not like a regular waffle, are tasty and help you eat vegetables first thing in the morning. Most recipes I saw for vegetable waffles simply called for throwing thick-grated vegetables into a waffle maker like hash browns. Instead, by grating the parsnips very finely, I could achieve more of a spongy waffle texture while also making room for the addition of spices and some cheese. This recipe was very forgiving, and only really took two variations until I was happy with it.

Recipe Booklet Creation

The actual creation of my booklet wasn't too daunting given my experience designing yearbooks online in high school. What was definitely a challenge was teaching myself to use the program InDesign. I've never used Adobe's creative software for anything more than the simplest of photoshopping, and InDesign is definitely made for people who know what they're doing. It's not very intuitive, but luckily the internet has tutorials for absolutely everything. With a little help from YouTube, I was able to make a simple design which included all the components I wanted. In a perfect world I would have had more time to spend on finessing the booklet, but it gets the job done.

When making my booklet I needed to consider the actual spread layouts, fonts and font pairings, recipe formats, which photos best represented each recipe, and what I wanted to include about each farm. Recipe formatting is definitely more complicated than I had realized before doing this project. For example, looking at different magazines and cookbooks will show a variety of approaches. One of the

biggest decisions is whether to have an ingredients list followed by directions, or to have the ingredients (with their amounts) embedded *within* the directions. I personally like to have ingredients listed beforehand for ease when I'm making a shopping list. My dad, on the other hand, prefers everything to be within the written directions so that he can read through it without having to refer back to the list above. I considered combining both approaches, but I felt like that made for too many words. Instead, I chose to make the word for each ingredient in boldface so that it would be easier to find within the directions. This does still require that people refer back to the ingredients list, but hopefully it's a good compromise of those two styles.



Hello! My name is Rachel, and I am completing my Biology degree at Western Oregon University. In this booklet you will find recipes featuring ingredients that are grown and available for purchase in Oregon's Willamette Valley. The highlighted farms are just a few examples of local growers who go beyond the standards of conventional agriculture, and some beyond even organic requirements, to reach towards the ultimate goal of truly sustainable agriculture. As consumers, we have the power to support farming practices which will help ensure the health of ourselves, our communities, and our planet, both today and into the future.

This is one component of a larger research project completed to satisfy Western Oregon University's undergraduate honors thesis program. To read more about the importance of sustainable agriculture and the process which brought about these recipes, visit https://digitalcommons.wou.edu/honors_theses/.

Lucky Crow

has three locations: a family farm in Monmouth, an urban site in Monmouth called Edwards Addition, and a second urban site, Fairview Addition, in Salem. Lucky Crow Farm focuses on female-powered farming and sustainability; they use a variety of sustainable farming practices such as the use of cover crops (like buckwheat and field peas). Despite not being certified organic, Lucky Crow utilizes certified organic fertilizers, such as fish bone meal and kelp. When it comes to pest management and weed control, they opt for crop rotations and row fabric rather than turning to herbicides and pesticides. And while Lucky Crow does till their soil, farmer Eden Olsen recognizes the importance of minimal tillage because they have learned “soil that has been under cultivation for longer tends to have more organic matter and needs less tilling.” To help nourish the soil, they use compost and leaves to add organic matter back into the ground.

When asked about the importance of supporting local farms, Eden highlighted multiple consumer benefits: “Local food not only keeps your hard-earned dollars within your local economy, but it also tends to be more nutritious, tastier, and more environmentally friendly since it travels less and is often grown on a smaller scale with less harmful practices. Plus, there is an educational aspect. If you get to know your local farmers, you are more connected to your food and are able to gain an understanding of where your food comes from and how it was grown.” Their bountiful produce can be purchased through the Corvallis Farmers’ Market, their 50 member CSA program, or online through their website for pick-up or delivery. They also work with a variety of restaurants, when possible, to bring fresh produce to their customers. For produce that doesn’t sell, they try to eat as much of it as they can while donating the rest to food banks. Find them at the market or online at <https://www.luckycrowfarm.com>.



Begin by removing the tops from each **kohlrabi**, and carefully peeling off the tough outer layer of skin with a paring knife. Finely dice the kohlrabi and add it to a medium sized bowl. Add remaining ingredients except nectarine, stir to combine. Chunk **nectarine** and lightly toss with other ingredients to reduce mashing. Serve over your choice of protein, with salty chips, or however else you’d like.

Kohlrabi Nectarine Salsa

- 1 ½ c diced kohlrabi (about 3 small)
- 2 small nectarines
- 1 Tbs diced jalapeno (more to taste)
- 2 Tbs diced red onion
- 1 medium tomato, diced
- ¼ tsp each oregano flakes, cumin, kosher salt
- 1 tsp lime juice
- ¼ c chopped cilantro



Fennel Galette

Dough:

6 Tbs cold salted butter
1/4 c sour cream or greek yogurt
1/4 c ice water
3/4 c whole wheat flour
3/4 c all purpose flour
1tsp garlic powder

Filling:

1 fennel bulb, thinly sliced
1 sweet apple (I used fuji)
1/2 sweet onion
1/4 c gruyere cheese

To prepare the **dough**, mix together both **flours, sage, and garlic**. Use a pastry cutter (or two forks) to cut the cold **butter** into the flour mixture until only pea-sized chunks remain. Next, pour **ice water** and **sour cream** (or yogurt) into the flour mixture and mix with a fork until just combined. Towards the end it may be easiest to use your hands to incorporate all of the flour. Form a ball and flatten it slightly into a thick disk, then wrap it in saran wrap and place into the refrigerator for at least an hour.

To prepare the filling, start by removing the **fennel's** fronds and woody base, then thinly slice the bulb of the fennel to form crescent shaped pieces. Next, cut the **apple** into thin slices (I left the skin on). Cut the sweet **onion** in half and thinly slice that into crescents, too. Finely grate about 1/4c **cheese** and set aside.

Once the dough has firmed in the refrigerator, unwrap the disk and place it onto a lightly floured surface. Start by whacking the dough a few times with a rolling pin to start a circle shape and soften it up. Roll out to about 1/4" thickness, if it's not a perfect circle that's okay!

Beginning in the center of the dough, layer apple slices in a circle leaving about two inches of dough as a border. Next, add fennel and onions on top of apple slices, reserving a small handful of fennel. Sprinkle with cheese and place the remaining fennel on top (this will help keep it crunchy and add more fennel flavor once baked). To form galette, carefully lift the edge of the dough border and lightly fold it over the filling, working your way around the circle. If you'd like more color on your finished galette, you could make an egg wash and brush it over the edges. Carefully transfer galette to a parchment lined baking tray (I found it easiest to slide it with a large spatula). Place into the oven and bake for **40 minutes at 400° F**. If it begins to brown too quickly, lightly tent with foil. Remove galette from the oven and allow it to cool for about five minutes before cutting and serving.



Fennel Fronds Pesto

2 c fennel fronds (from one fennel)
1/4 c salted pumpkin seeds
1/2 c toasted walnuts
1/2 clove garlic, or 1 quite small clove
5 Tbs olive oil
1 Tbs lemon juice
1/4 tsp salt (more to taste if using unsalted pumpkin seeds)

Toast **walnuts** in a small pan over medium heat until fragrant, about five minutes. Let walnuts cool, then pulse in a food processor until finely chopped. Add remaining ingredients and pulse until combined, adding more olive oil as needed. This pesto is more mild than its basil-based cousin, and very tasty scrambled into eggs.

Apricot Honey Tarts

Crust:

1 $\frac{3}{4}$ c AP flour
 $\frac{3}{4}$ c powdered sugar
 $\frac{1}{2}$ c room temp butter
1 egg
2 tsp espresso powder

Filling:

1 c mascarpone cheese
 $\frac{1}{3}$ c plain greek yogurt
2 $\frac{1}{2}$ Tbs honey

Topping:

Three firm apricots, sliced
 $\frac{1}{2}$ Tbs butter
2 tsp brown sugar
 $\frac{1}{2}$ tsp cardamom

Cream **butter** and **sugar** together until fluffy. Add **egg**, mix until fully incorporated, then add **flour** and **espresso powder**. Form a disk with the dough, wrap tightly with saran wrap, and chill in the refrigerator until firm (at least one hour). When ready to bake, roll out dough to $\frac{1}{8}$ " thickness and gently lay into four 5" tart pans. Remove excess dough overhanging edges, prick bottom with fork, and return to the refrigerator. Place a baking tray into the oven and preheat to **350° F**. Once the oven is hot, carefully place tarts onto the heated tray in the oven, and bake for about **20 minutes**. Allow tarts to cool completely before removing them from their dishes.

One hour before preparing the filling, move the **mascarpone** from the refrigerator to the counter so that it can come to room temperature. Next, mix fully mix with **greek yogurt** and **honey**. Evenly fill crusts with mixture, and refrigerate for at least an hour for filling to set. While they chill, heat **butter**, **sugar**, and **cardamom** in a pan over low heat, just enough to melt butter and incorporate spice. Gently add sliced apricot and stir to coat pieces. Remove from heat and let cool. Finally, top cooled tarts with apricot slices however you like. Tarts are best enjoyed just a few minutes after removing from the refrigerator so they're cool but not cold.

Purple Veggie Dip



1 bunch beets (~13oz without tops)
1 bunch purple carrots (~12oz without tops)
1 clove garlic
 $\frac{1}{3}$ c canned chickpeas
 $\frac{1}{3}$ c toasted almonds
 $\frac{1}{4}$ c + 3Tbs olive oil, divided
 $\frac{1}{2}$ tsp white pepper
 $\frac{3}{4}$ tsp salt

Remove **beets** and **carrots** from their tops and wash well. Half beets and carrots, then toss with **1Tbs olive oil** before placing on a baking sheet. Bake at **350° F** until soft all the way through, about **50 minutes**. Meanwhile, toast **almonds** in a pan on the stove over medium heat until fragrant, about **4-5 minutes**. Once the almonds have cooled, pulse them in a food processor until finely ground. Add room temperature veggies and remaining ingredients including the $\frac{1}{4}$ c + **2Tbs olive oil**. Blend until smooth, and store in the refrigerator. This recipe is great served on pita with additional chickpeas and some crisp romaine.

Recipe adapted from Bon Appetit's Smokey Carrot Dip.



Broccoli Basil Quiche with Summer Squash and Carrot Crust

Filling:

4 eggs
1 c milk
½ c grated semi-hard cheese, like smoked gouda
~1/8 c roughly chopped/torn fresh basil
2 ½ c chopped broccoli
1 c diced shallots
1 Tbs olive oil

Crust:

1 c grated summer squash (squeezed to remove moisture)
1 c grated carrot (the sweeter, the better)
½ c rice flour
4 Tbs melted butter
½ tsp dried basil
½ tsp dried tarragon
¼ tsp dried thyme
grated black pepper to taste

Preheat oven to **375° F**. Combine all crust ingredients **except butter** and mix well. Stir in melted butter until mixture begins to clump together. Press into a pie pan with fingers to form an even thickness.

Meanwhile, toss **broccoli** and **shallots** with **olive oil** and salt, spread onto a baking tray, and place into the oven alongside the crust. Bake the crust and tray of veggies for about **30 minutes**, until it is just beginning to brown and has crisped up slightly.

In a medium sized bowl, whisk together the **eggs** and **milk** before stirring in **cheese, shallots, broccoli, and basil**. Pour filling mixture into the warm crust, and return to the oven for **35-45 minutes**, until the center is no longer jiggly. If the edges of the crust begin to brown too much, cover with foil for the last ten minutes. Cool quiche slightly before serving. Wonderful served for breakfast or dinner.

Recipe adapted from Persephone's website.



Persephone

Persephone Farm operates on the core belief that “healthy soil creates healthy plants, which sustain healthy people.” From the ground up, they have a deep understanding of how to farm in ways which work with nature. Situated on 55 acres along the South Santiam River in Lebanon, the farm was established in 1985 by Jeff Falen (who passed away in December 2020), and his partner Elanor O’Brien. Persephone has been organic certified and Salmon-Safe since their beginning. In addition to using earth-friendly farming practices, they aim to make their entire operation as green as possible with on-site solar panels that cover 80% of their electricity needs.

Persephone uses a variety of cover crops such as buckwheat and sudan grass which “play an important role in crop rotation [by] breaking up pest and disease cycles while adding organic matter and sometimes nitrogen to the soil,” said farmer Theo Ciszewski. Crop rotation acts as an important tool for pest management by keeping insects searching for their favorite crops, rather than hatching right where food is. They also utilize flowers as habitat for beneficial insects, and let chickens roam freely to pick off pests. Persephone uses OMRI (Organic Materials Review Institute) certified chemicals to increase soil nitrogen, and a pesticide derived from chrysanthemum flowers to handle flea beetles. They use no herbicides, instead weeds are managed primarily by physical removal. Their proximity to the Santiam allows them to use that water for irrigation between April and November. The rest of the year, rain provides plenty of moisture for growing their crops without additional input.

Persephone’s farmers recognize that buying locally grown, organic produce is not always an option for everyone, especially given that “sometimes, truly local produce is only available at a farmer’s market, which has limited weekly hours.” Despite the obstacles, they do highlight that some grocery stores have local food sections, and suggest that “wherever we shop, we should ask ourselves questions about what we put in our carts, so that when possible, we can choose to support our neighbors and our regional food economies.” Persephone sells most of their produce at the Portland farmer’s markets, but also started offering CSA boxes to help with sales during the COVID-19 pandemic. Food that does not sell is eaten on the farm, or collected by gleaning groups after the markets are finished. Read more about them or join their CSA online at <http://www.persephonefarmoregon.com/>.

Persimmon Ginger Scones

1 c AP flour
½ c whole wheat flour
½ c ground hazelnuts
¼ c coconut sugar
1 Tbs baking powder
¼ tsp salt
½ tsp ground ginger
3 Tbs butter
¾ c cold coconut milk (full fat)
1 tsp vanilla
1 c diced Fuyu persimmon (about two persimmons)
2 Tbs diced candied ginger
1 Tbs raw sugar

To begin, start by preparing persimmons. Using a small paring knife, peel each **persimmon** and dice it into small cubes. Place chunks into the freezer for as long as possible, at least while you prepare the rest of the recipe. Next preheat oven to **400°** and line a baking sheet with parchment paper.

In a medium sized bowl, whisk together **flours, hazelnuts, coconut sugar, baking powder, salt,** and **ground ginger**. Next, using two forks or a pastry cutter, cut-in the **cold butter** until only small, pea sized chunks remain. Using a spatula, fold in diced **candied ginger** and **frozen persimmons**, then stir to coat each chunk with the flour mixture.

Working somewhat quickly, add **coconut milk** and **vanilla** to the bowl and mix with a spatula until combined. Dough will be wet and sticky. Plop dough onto parchment paper and, using your hands, make a disc about an inch thick. Using a large knife carefully cut the circle into eight pieces, like a pizza. Sprinkle with **raw sugar** and place into the preheated oven for **25 minutes**.

Although the dough starts somewhat dark in color, when baked it will be a shade darker and have a nice crust. Once cooked, immediately slide parchment off the baking sheet onto a cooling rack. The hazelnuts make these less airy than a traditional scone, but they're moist, flaky, and tender with a slight crispy crust. Not too sweet, persimmon chunks and spicy ginger pieces make these perfect for breakfast. Best enjoyed warm soon after baked.





Savory Parsnip Waffles for One

2 c finely grated parsnip, about 1 large or three small (do not pack)
1 egg
1 Tbs neutral oil, like canola
½ tsp salt
¼ tsp garlic and pepper
¾ tsp dried dill
4 Tbs AP flour
3 Tbs finely crumbled goat cheese or feta
Non-stick spray for waffle iron

In a medium sized bowl, whisk **egg, oil,** and spices. Mix in grated **parsnip, flour,** and **cheese** until fully combined; batter will be thick. Spread into a greased, preheated waffle maker and cook for about **4-5 minutes,** or until it has a golden brown crust, depending on your waffle maker. Makes one 8 inch waffle. Wonderful with savory toppings like an egg, or bacon and arugula.

Sunbow

Established in 1972 by Harry MacCormack and Cheri Clark, Sunbow Farm has long been a presence in the Corvallis area. To help sell their produce, Harry worked to establish both the Corvallis Saturday Market, as well as the People's Wednesday Market in Portland. Sunbow offers USDA Certified Organic produce within Corvallis and neighboring Philomath, year round. With experience comes knowledge and expertise, and although the farm is now operated by farmers Yadira and Nate, they carry on a legacy of solid farming practices.

Sunbow knows the importance of practices like cover cropping, crop rotations, and interplanting diverse crop types. They use fava beans as cover crops often enough that they're part of the farm's logo. Sunbrow alternates what they use as cover crops depending on the needs of the soil. For example, daikon radish, which can grow 18 inches deep, is used to naturally help break up clay fields. These cover crops, which are rotated with their crops for harvest, are also chosen to help support native pollinators and predatory wasps, which help to control pests that would damage the plants. Sunbow doesn't use a harsh rototiller on their soil; instead, they opt for gentler machinery or hand tools. They use no pesticide, herbicide, or fungicide sprays, and of course no chemicals on their produce. They use their own seeds to replant future crops whenever possible, and control weeds by using mulch and crop rotations.

When asked about the importance of shopping from local farmers, Yadira and Nate said that "it boils down to quality, community and social engagement within our food system." When it comes to quality, they point out that produce from the grocery store has often been picked when it was far from ripe, meaning it lacks the same nutrition, texture, and flavor that truly fresh produce has. As far as community, the act of purchasing from local people is "a relationship rather than an exchange." It allows for the development of connections between the larger scale food system and the people who put in the time to grow food. And finally, supporting local growers gives individuals the power to support quality practices like using renewable energy, and not support practices like underpaying workers. Being removed from the food growth process "divorces us from the personal hand we have to improve the food system that we rely on for survival," said Yadira and Nate.

Sunbow harvests produce to-order from their fields to help minimize food waste. They offer a weekly produce list via email at sunbowproduce@peak.org, where consumers can order what they'd like to purchase. Additionally, they have a Sunday farm stand (operational outside of the COVID-19 pandemic), and their produce is regularly stocked at the First Alternative Co-Op in South Corvallis.

Easy PB&J Ice cream

Berry sauce:

1 pint raspberries (2c)
¼ c granulated sugar (scant)
¼ c water
2 Tbs cold water
2 Tbs cornstarch
Splash vanilla extract

Ice cream:

1 c half-and-half
2 c heavy whipping cream
2 c milk (whole milk will be creamiest, but others work too)
1 ¼ c sugar
¼ tsp salt
1 ½ Tbs vanilla, or ½ a vanilla bean
5Tbs PB fit powder (powdered peanuts)
Salted peanut pieces

Empty **raspberries** (or other abundant berries such as strawberries) into a small saucepan along with ¼ c **water** and **sugar**. Mash berries with a spoon and bring mixture to a boil. In a separate container, whisk **2 Tbs cold water** with **2 Tbs cornstarch** and pour into saucepan with berries. Continue to mix until sauce thickens, a couple minutes. Remove pan from heat, stir in a splash of **vanilla**, and set aside to cool.

In an icecream maker, combine all icecream ingredients except peanut powder and peanut pieces. Whisk in **peanut powder** last to ensure that no clumps remain. Churn according to machine directions. Once thickened, place a few cups of the icecream mixture into a freezer safe container, top with a layer of berry sauce and a handful of **salted peanuts**. Repeat layering until icecream and sauce are gone, freeze overnight. Serve with additional berries and peanuts, if desired.



“TO THINK!”

To think I once saw grocery shops
With but a casual eye
And fingered figs and apricots
As one who came to buy.

To think I never dreamed of how
Bananas sway in rain,
And often looked at oranges,
Yet never thought of Spain.

And in those wasted days I saw
No sails above the sea,
For grocery shops were grocery shops -
Not hemispheres to me.

Elizabeth J. Coatsworth

