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FOOD SAFETY PLANNING

Down on the Farm

EXAMPLES FROM OHIO CERTIFIED ORGANIC FARMS

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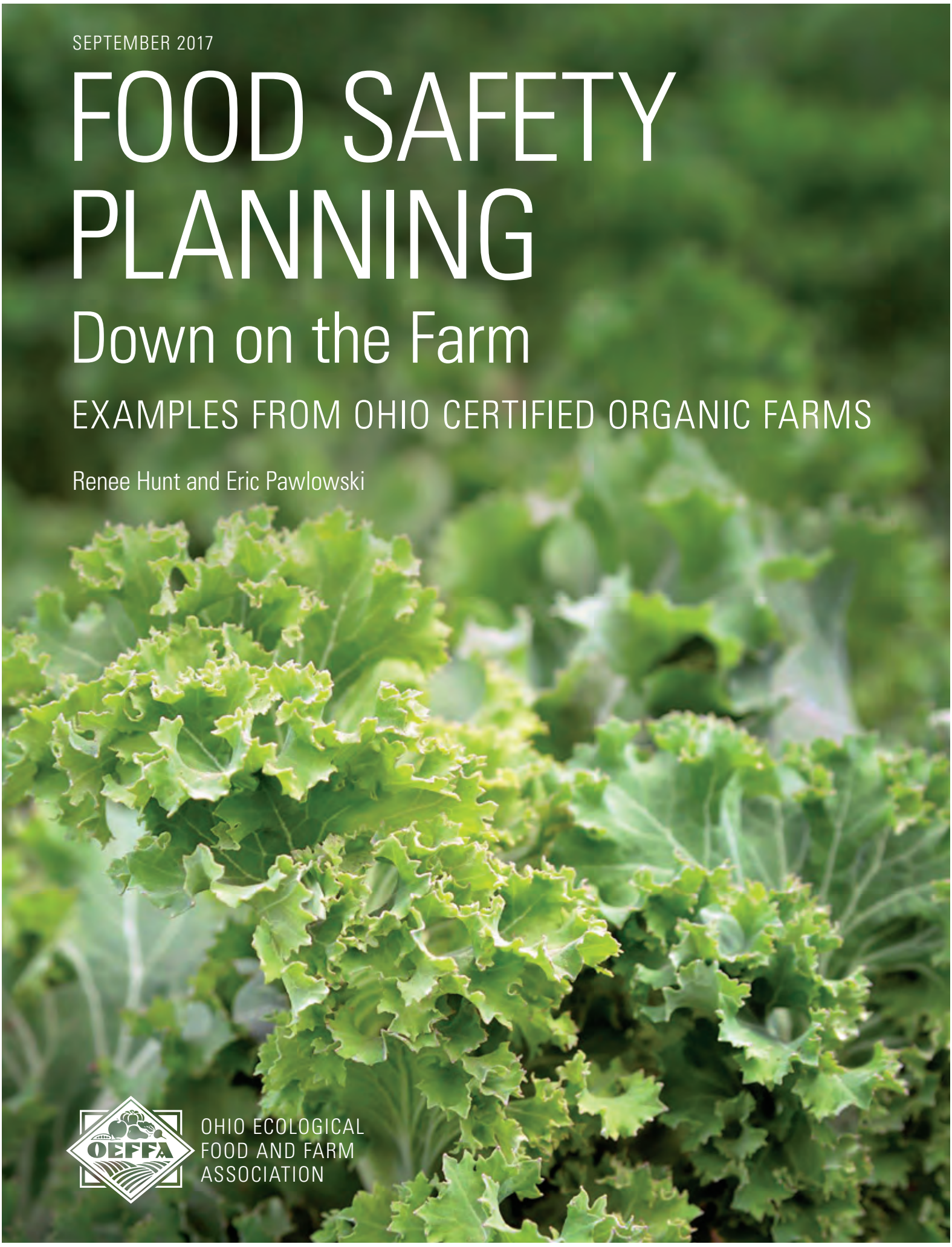

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

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INTRODUCTION

When the Food Safety Modernization Act (FSMA) was signed into law on January 4, 2011, many produce farmers recognized that a profound transformation was about to occur in the way they do business. This was the first major update of the Food and Drug Administration (FDA)'s federal food safety regulations in more than 70 years. FSMA's approach is to prevent contamination, and the rules developed by the FDA require farms and businesses to have practices and controls in place both to reduce risk and to document the associated actions taken to reduce risk.

Many farmers are intimidated by the idea of complying with food safety rules, fearing the possible cost, the time it could take, or difficulty to understand what is required of them. They may decide to avoid expanding their production or quit growing produce altogether just to avoid dealing with FSMA. While some farms are so small that the legislation exempted them from the rules (growing less than $25,000 in produce a year), some buyers—interested in protecting their customers' health and limiting their own liability—may nonetheless require these farms to show that they meet FSMA's standards.

Farms, both large and small, achieve food safety by creating and then following an on-farm Food Safety Plan (FSP). When the Ohio Ecological Food and Farm Association (OEFFA) set out to help produce farms develop food safety plans for their operations, we realized that—as much as we'd like to—we weren't going to be able to provide individual on-site visits and in-depth support for the many small farmers out there looking to understand, incorporate, and comply with the Produce Safety Rule (PSR). However, the strength of this community is learning by the example of others, and we knew we could find farms willing share their stories so that others may benefit. With gratitude, we present these farms' experiences.

The farms profiled are all certified organic operations. They begin with the advantage that they are already used to planning and documenting their production and harvesting practices. In addition, some organic certification requirements do contribute to food safety protocols, which give these organic farmers another leg up on meeting food safety rules. These farmers thus have the opportunity to connect the dots between organic certification practices (and documentation), and food safety processes (and documentation) in their day-to-day work. For them, rather than developing a completely separate system, this is an effective and efficient way to deliver organically and safely grown food.

These case studies highlight features of the farms profiled; they are not a comprehensive summary of all of their food safety practices. Rather, it identifies some concrete challenges they have faced and how they approached solutions. We expect that in these examples, other farms—certified organic or not—may see their own operations, and generate ideas for practices they can adopt to ensure that they are providing safe products to their customers. We hope that these stories will alleviate some of the fear related to addressing and incorporating food safety practices, and help farmers envision a path forward for their own operations.

This document is not meant to be an exhaustive resource on FSMA or on-farm food safety, nor does it provide a detailed explanation of the rules. Our intention is to help farmers navigate this brave new world of farm food safety, and perhaps take their next step towards it, by providing resources and assistance, of which this publication is one. In fact, various resources are referenced throughout the case studies. The OEFFA binder of resources mentioned in this document includes:

- FSMA quick facts and FAQ summaries
- Harmonized Food Safety Standard
- Field operations and harvesting compliance checklist
- Post-harvest operations compliance checklist
- Audit verification checklist
- Risk-based compliance checklist
- Narrative Food Safety Plan template and example
- Formula model Food Safety Plan template and example

KEY CASE STUDY TERMS:

Agricultural Water: Any water that comes in contact with Covered Produce. It is regulated in two parts: production use, including irrigation and sprays; and post-harvest contact, including ice, rinsing, hand washing, surfaces, and cleaning.

Covered Produce: Produce that does not meet one or more of the following criteria: grown for personal or on-farm consumption; is cooked or in any other way not a "raw agricultural commodity;" will be processed in a way that reduces microorganisms of public health concern, such as a "kill step," or is on the "rarely consumed raw" list, such as beets, sweet corn, and potatoes.

Exempt Farm: A produce farm growing Covered Produce that has grossed less than $25,000 annually during the prior three-year period.

Farm Food Safety Plan (FSP): A written document containing the farm's policies and procedures that address concerns and issues that would be reviewed during a food safety audit.

Flow Zone: Areas that a product moves through.

Food Safety Modernization Act (FSMA): Regulated by the Food and Drug Administration, this is the first reform of federal food safety laws in more than 70 years and shifts the focus from responding to contamination to preventing it in our food supply.

Good Agricultural Practices (GAP): Specific methods and procedures used on a farm to keep products safe and free from contamination.

Julian Date Lot Coding: A coding system used to trace back produce to its harvest or packing date. To set up the code: Take the last number of the year and list that first; then take the Julian number of the current date (that is, the actual continuous counting of days from January 1 until the current day) and list that number; finally, add a two-letter code identifying the product. Example: if your product is bib lettuce (using your own code designation of "BL") and the date of harvest is September 15, 2017, the code would be 17258BL. (September 15 is the 258th day of the year.)

Produce Safety Alliance (PSA) Grower Training: is the standardized FDA approved training curriculum that satisfies requirements outlined in § 112.22(c) of the Produce Safety Rule (PSR).

Produce Safety Rule (PSR): Establishes science-based minimum standards for the safe growing, harvesting, packing, and holding of fruits and vegetables grown for human consumption.

Readiness Audit: A second-party review of a farm's food safety policies and procedures, used in many cases to prepare for a third-party food safety audit.

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

Well Established and Well Along the Way to Food Safety

GREEN EDGE GARDENS, AMESVILLE, OHIO

What strikes you when you arrive at Green Edge Gardens is the serenity of the valley where Becky and Kip Rondy's farm resides. Formally a dairy farm, located in the Appalachian foothills of southeast Ohio, the land is now sprouted with high tunnels for year around production, adjacent to fields that add to the farm's seasonal bounty. Buildings nestled in the surrounding hills offer production space for mushrooms and microgreens, and this is also where the harvested items are gathered to prepare for distribution to Community Supported Agriculture (CSA) share members, the farmers' market, restaurants, and other accounts. Green Edge's farm manager supervises all production, and the pack room manager is the farm's food safety officer.

GOALS AND MOTIVATIONS

Green Edge Gardens has created its market with specialty crops, specifically ones defined as Covered Produce in the Food Safety Modernization Act (FSMA). Roots, fruits, and greens all lend themselves to high tunnel season-extension production. This highly-evolved art form mastered by Green Edge Gardens is known as season creation. Fresh, local, and organic all converge, so it is of little surprise that Green Edge chooses to serve local direct markets that understand the true value of artisanal food.

Like most pioneers, Kip and Becky explored many distribution routes, including wholesale sales of heirloom tomatoes. Their heirloom tomato distributor asked the Rondys to obtain food safety certification, but the fees associated with this certification at the time were cost prohibitive, given the limited scale of this distribution option represented. As a result, Green Edge dropped that particular wholesale account. Currently, Green Edge distributes its production through its CSA, at the farmers' market, restaurants, and other direct marketing venues. But wholesale markets can be a profitable component of a diversified marketing plan, and so being compliant with FSMA will give Green Edge Gardens the option to incorporate wholesale marketing in the future.

CURRENT ON-FARM PRODUCTION

As a pioneering farm in the Ohio organic movement, Green Edge Gardens embodies the three pillars of agricultural sustainability: ecologically sound, socially just, and financially viable. Green Edge recognizes that farming takes many hands and has created year-round employment opportunities, contributing to a level of staffing stability. The farm's micro-enterprises of mushroom and microgreens production contribute to off-season cash flow. Through the years, the Rondys have established policy and trained employees on the farm's production and harvesting processes. The farm's thoughtful practices and procedures provide a great foundation to build a farm food safety plan.

Green Edge comprises 120 acres with production areas divided into 10 high tunnels, 24 raised beds, and 10 open-field parcels. The production fields in the valley are protected by an electric fence, deterring deer and other wildlife from feasting on the farm's maturing produce. This also provides a first line of defense preventing wildlife from contaminating the crops. A pre-harvest assessment for contamination is made of each crop production area immediately prior to harvest.

Green Edge Gardens invested in an ultraviolet (UV) water filtering system to filter its pond water, which is used to irrigate the fields and high tunnel production areas. The system is enclosed in a shed, and the filtered water is stored in a stainless steel tank. Drip tape irrigation is primarily used, and the lines are replaced every two to three years. Green Edge also uses the drip lines to apply fertilizer products.

Compost is applied in high tunnels when renovating beds between cropping cycles. The compost is made on site following the National Organic Program's (NOP) composting and application standards.

"Green Edge has created space for education and adaptation."

The farm has designated field-only and distribution-only containers, which are uniquely identifiable, cleaned after each use, visually inspected before each use, and cleaned again if necessary. Field containers receive a water rinse, and the packing house containers receive a bleach rinse.

The field totes have lids and each tote is marked with the crop and the date. For traceability purposes, each field is assigned a letter, and each bed has a number. A paper-based log is used to record product amount, date, and location of harvest. Traceability detail is also captured on the order sheets, and each delivery container (wax boxes or single use plastic bags) includes the customer's name, name of crop, amount of crop (weight), and harvest date. This information, if needed, would help during a recall event.

The farm's packinghouse has areas for storage, three walk-in coolers, and a wash room. Additional packing space is available in an attached area that is covered, and is used primarily for packing CSA shares. The pack room has a wash tank for greens, and only potable municipal water is supplied to the building. The wash tank and dunk tank water are changed between products being washed, or if the water becomes visibly dirty during the process, then it is changed at that time.

In a separate room, microgreens are grown and harvested with scissors. This enterprise center has sanitation criteria unique to its production and is compliant with FSMA's Produce Safety Rule (PSR) requirements. Additionally, in a separate production area, mushrooms are grown and harvested. At the end of the mushroom growing cycle, everything in the room is sanitized and the medium that the mushrooms are grown in is composted.

Green Edge has a rigorous cleaning and documentation schedule established for its packinghouse and field equipment.

FSMA CHALLENGES

Due to Green Edge's diversified enterprise centers, prior experience of being certified organic, and having established employee training and education programs, they had many, but not all, PSR-compliant systems in place and operational. As many farmers are learning, the PSR has many unique documentation requirements, such as rigorous testing of agricultural water. This and similar documentation was one area that was flagged for Green Edge to update in its current procedures. Other minor concerns identified that were not in practice include:

- Defining the harvest exclusion zone around contaminated produce in the field;
- Flushing drip irrigation lines of fertility residue after use;
- Documenting dunk tank water temperature prior to product contact;
- Adequately protecting distribution packaging and other supplies in storage from possible pest, insect, rodent, and bird contamination;
- Covering lights in the packing area (although shatterproof bulbs were in place), and
- Having a field sanitation unit (also known as a port-o-let) spill response plan on file.

CREATING AN ON-FARM FOOD SAFETY PLAN

Following its readiness audit, Green Edge codified a formal food safety plan that addresses the concerns disclosed during the audit. The corrective actions include:

- If any signs of wildlife have been found during pre-harvest assessment, marking the spot with a pin flag and excluding the harvest of crops within a two-foot radius of the flag;
- Measuring and documenting the dunk tank water temperature prior to cleaning Covered Produce, and verifying proper temperature/cooling range;
- Securing and closing off areas, and setting up appropriate pest traps around the area, in order to avoid the risk of potential contamination of storage areas where packing boxes, bins, and other supplies are kept;
- Establishing a policy to flush drip irrigation lines of fertilizer residue after use, and
- Creating an irrigation water sample collection and testing protocol in order to establish a baseline of water quality documenting compliance with PSR provisions.

FSMA FIELD OF VIEW: LESSONS LEARNED

Green Edge Gardens has a history of doing things right because it's the right thing to do: right for this valley, this farm, and this production zone. Becky and Kip have made a commitment of resiliency to their clients, their community, to their employees and to themselves. Resiliency is sometimes difficult to define, yet it begins with knowledge, education and preparation. By recognizing and removing itself from the changing dynamic of the wholesale market sector during a period of transition, Green Edge has created space for education and adaptation. With the confidence of having compliant systems in place, Green Edge Gardens can expand its wholesale account opportunities when the timing is advantageous for its marketing strategy. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

Growing the Farm Business and Meeting Food Safety

JORGENSEN FARMS, WESTERVILLE, OHIO

Located just outside Columbus, Ohio, Jorgensen Farms has a well-positioned market for the produce and herbs it grows. Farmer Val Jorgensen started the farm in 1992 for her family, and in 2002 the farm became certified organic. The farm has grown to also include events spaces, featuring a historic barn and open grounds ideal for weddings and other celebratory gatherings. Val's son, David Karakomi, is the farm manager, and as part of his duties, is the lead on the farm's food safety planning and implementation.

GOALS AND MOTIVATIONS

Historically a diversified farm with complementary production enterprises of pasture-based lamb, bulk culinary herbs, flowers, and specialty-crop vegetables, Jorgensen Farms recognized the changing dynamic of the surrounding community. The rural landscape is feeling the effects of suburban sprawl, bringing with it a population of potential clientele well-suited for agritourism activities. With its recent purchase of the adjoining farm, Jorgensen Farms has expanded its on-site event opportunities. This change toward a primarily agritourism focus has necessitated a revision of the farm's production enterprise goals. As the newly acquired timber frame barn was retrofitted to host events, orchards and paddocks were relocated to provide convenient parking, pollinator forage habitat has been augmented into oases of aesthetically-pleasing landscape features just ripe for photo opportunities, and on-farm production has now taken the supporting role in the greater farm business strategy. By focusing production on bulk herbs, flowers, and a limited variety of specialty crops in greater volumes, Jorgensen Farms attained the efficiency to maintain farm-scale production, serve their established client base, and position the business to grasp future opportunity, all the while preserving the pastoral environment that is ideal for agritourism.

CURRENT ON-FARM PRODUCTION

Assessing the components in place, serving the wholesale market appeared as a profitable choice for Jorgensen Farms. Two long-term clients were willing to work through the pains of transitioning to the wholesale market, anchoring the farm's bulk herb and heirloom tomato enterprises. Further, one client identified a need for cooking greens, which allowed for expanded production of a crop that contributes to a sustainable rotation. The farm also recognized the value of farm-to-table branding and established a catering service for their facilities and other events.

Converting pasture to cropland provided the initially sufficient foundational levels of fertility, soil organic matter and microbial activity, minimizing off-farm input costs. Through participation in the Natural Resources Conservation Service Environmental Quality Incentives Program (NRCS EQIP), five high tunnels are now in place, providing 7,680 square feet of production space. With the former infrastructure support buildings repurposed for events, there was a strong identified need to invest in post-harvest handling facilities. The farm's packing house was designed prior to the Food Safety Modernization Act (FSMA) and was under construction when the Produce Safety Rule (PSR) was finalized. In addition to the processing area, the building houses a walk-in cooler, the well-water filtration equipment, secured storage areas, and the maintenance shop, all of which are separated by impermeable walls. At the time of the visit, the produce handling area was a roof-covered concrete floor with two open sides. This design provides a comfortable and efficient venue for bringing in and processing the items grown on the farm. As with many farms, Jorgensen utilizes plastic folding tables in their product flow zones: they are lightweight, easy to move, and affordable. Product enters the building temporarily stored on pallets prior to handling and packaging. Climate-controlled storage is the rear quarter of the packinghouse with the temperature regulated by a "cool-bot"-controlled air conditioner.

With the diversified and interdependent operations of agritourism, private events, facilities and grounds maintenance, specialty crop production, and marketing, there are many moving parts on any given day at the farm, resulting in multiple crews being responsible for various aspects of the farm's

"Compliance with FSMA has led to a broader conversation about the basic employee training necessary for all staff."

operations. As with any farm operation, workers need to be trained, with each department supervisor responsible for crew training.

FSMA CHALLENGES

Certified under the National Organic Program (NOP) standards since 2002, Jorgensen Farms is no stranger to federal regulation compliance. Supplying wholesale accounts, which are one step removed from the final consumer, only intensifies the importance that all members of the value chain be dedicated to food safety. Having a common understanding among partners—a harmonized standard—clarifies expectations and provides defined benchmarks. The farm had the advantage of an established harvest and post-harvest system to measure against the standards established in FSMA. By conducting a readiness audit, areas of need and corrective action priorities are identified. The issues at Jorgensen Farms commanding attention include the following items:

- Pest and insect access, precipitation entry, and possible contamination of packaging material were identified as areas of concern with the open-sided packing house;
- Pack house material storage was identified as a concern. Distribution packaging was stored in a way that can lead to contamination. Cleaning and storage of harvest equipment was insufficient, and product flow zones were not protected from potential contamination;
- Standardizing operating procedures and documentation into the farm's existing harvest and handling system framework, and instituting a water testing protocol, and
- Annual training for Jorgensen Farm staff on personal health and hygiene, safety, and product handling procedures need to be developed and documented.

CREATING AN ON-FARM FOOD SAFETY PLAN

Jorgensen Farms understands that their competitive advantage is in freshness and quality, and documented compliance with FSMA supports the farm's vision to deliver this level of excellence. The results of the readiness audit indicated, in addition to the concerns outlined, an opportunity to create comprehensive written policies. Compliance with FSMA has led to a broader conversation about the basic employee training necessary for all staff, regardless of department affiliation. Detailed trainings specific to harvest and post-harvest handling are now planned for farm production and handling staff. Additional remedies include:

- To prevent pest access and reduce contamination risk, the open sides of the packing area were enclosed with ½ inch hardware cloth sides and doors. Further, sanitizing equipment and contact surfaces prior to use allows the farm to document sanitary conditions in this area;
- To protect product packaging and distribution containers from possible pest contamination, storage of these items was moved to the hoop house being used as a staff break room and is protected by a plastic covering. Harvesting tools are stored elsewhere in that hoop house and a documented sanitation schedule has been implemented, and
- To facilitate staff education and understanding of work expectations, harvest and post-harvest handling procedures standardization—including specific procedures for disposing of contaminated produce encountered during harvest or during handling—was initiated. This also helps the farm meet some of FSMA's recordkeeping requirements, which include the documenting of: staff trainings and topics covered; agricultural water processes, including test results, treatments, and corrective actions; biological soil amendment applications; sanitation of equipment, tools and buildings, and storage.

INDEPENDENT THIRD-PARTY AUDIT: PASSING THE TEST

Jorgensen Farm contracted with an independent agency accredited to provide auditing services under the United Fresh Harmonized Standard. The audit lasted approximately 90 minutes. The auditor initiated the audit checklist of questions, with staff referencing the farm's Food Safety Plan for the answers and documenting established procedures in place. The written plan was not read by the auditor, nor was the product flow procedures reviewed from field through handling and final distribution to end-user. Procedure documentation examples were requested and performance of a mock recall was verified by the auditor. The most beneficial portion of the audit was the exit interview where the auditor discussed concerns and corrective actions.

Points were deducted for these omissions: documentation of employee training; procedures for corrective actions; procedures for hazardous waste disposal; contingency policy for product contacting the ground or otherwise damaged; a comprehensive cleaning schedule, and a written description of the water system and management plan.

The audit resulted in a final grade of 89 percent and a temporary certificate was immediately issued.

FSMA FIELD OF VIEW: LESSONS LEARNED

The need to assess food safety practices and be compliant with FSMA also provides the opportunity to look at how effectively the farmer is managing all aspects of the farm, including staff, production, and time. After all, you can't manage what you don't monitor. Due to its diverse enterprises, it makes sense for Jorgensen Farms to assemble a staff training manual to be used by all departments. Company sick policy, break, and hand-washing expectations are human resource topics most efficiently presented to all. Specific harvest or handling policy on how to dispose of potentially contaminated produce is the role of the food safety plan and the procedure should be defined in that document. Conducting a readiness audit allows farms such as Jorgensen to identify its current practices and causes for concern, and devise corrective actions. This work provides the stepping stones to write a plan and conduct a self-audit, and ultimately, to have confidence in passing a third-party audit. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

Positioning for Market Advantage

BRICKEL CREEK ORGANIC FARM, JAMESTOWN, OHIO

If you can take your eyes off the gorgeously intricate woodwork of her restored farmhouse in west central Ohio, you can see pea shoots being grown in the next room as you sit at Sue Borton's dining room table. Sue started Brickel Creek Organic Farm in 2007 and the farm became certified organic in its first year of operation. While she can steward her microgreens from the greenhouse attached to her home, she just needs to step outside to reach her fields and hoop houses, where she grows herbs, greens, berries, and other delicious produce that she sells wholesale to grocery stores and a variety of restaurants. Sue is taking the lead on her farm's food safety planning and implementation, and she works closely with her farm manager, Hannah Ohl, on the farm's daily operations. Additional staff are added at peak season.

GOALS AND MOTIVATIONS

Brickel Creek distributes directly to restaurants and retail grocery stores in pre-packaged containers. The grocer displays the product as it is received, and is currently seeking assurances—through a documented Food Safety Plan (FSP)—that the farm's products are compliant with the Produce Safety Rule (PSR). The grocers are knowledgeable of the regulations and are not requiring third-party certification from growers until the Food Safety Modernization Act's (FSMA) implementation period is complete, which is a few years away. The farm's goal is to be in full compliance with the standard as soon as possible and be able to contract for third-party accreditation when required by the market.

CURRENT ON-FARM PRODUCTION

Brickel Creek grows produce that is covered by the FSMA regulation in 1 ½ acres of fields and in four high tunnels. One tunnel is dedicated to raspberry production and portions of the field are planted with perennial blackberries and herbs.

The farm's distribution strategy is to harvest directly into containers that are put onto shelves by the retailer, delivering those items to the market on the same day as harvest. This helps ensure the freshest product possible, and minimizes storage issues. Brickel Creek typically does not clean or rinse product harvested from its high tunnel production. While this saves time on the farmer's end, it also has the added benefit of avoiding contamination concerns that come with introducing water into the process. When water is used, it comes from a potable well that is tested on a quarterly schedule.

Harvest starts off with tools that have been cleaned and sanitized with a vinegar rinse. They have bins and totes that are specifically used for harvest, and in some cases, pack directly into plastic liners. In the case of berries, they are directly packed into clam shells.

The pack house was not initially designed for aggregating and handling produce. The floor is cobbled, which can cause water to collect, and can be a challenge to clean. In developing a food safety plan, Sue also developed individual Standard Operating Procedures (SOPs) for cleaning and sanitizing the various surfaces of the operation, including the floors. All workers are provided the detailed SOPs and are trained to properly clean and sanitize all product contact surfaces which, in addition to the floors, include tools, equipment, and containers.

Harvested items are not typically stored, but can be put in the "cool bot" climate-controlled storage to reduce the field heat. Storage areas are protected and cleaned on a regular schedule.

Brickel Creek maintains detailed production, harvest, and sales records as required under the National Organic Program (NOP) standards.

"…building a farm food safety plan in this manner gives the farm manager an intimate knowledge of the systems under her stewardship, which can be invaluable information."

FSMA CHALLENGES

Brickel Creek is an Exempt farm, which means it is not required to be audited to the FSMA PSR requirements. However, the farm's buyers have indicated that when FSMA is fully implemented, they will likely require Brickel Creek to undergo annual third-party food safety certification. Getting Brickel Creek's food safety plan in place and operating is a necessary and proactive effort, one that ensures nearby grocery stores will continue to offer the local and organic food this farm supplies to them.

The readiness audit helps by asking questions that are sometimes overlooked, and thinking through a farm's specific procedures, such as traceability of product. Certainly, the farm's Organic System Plan (OSP) can be used to trace back product to the field of production. Yet for a highly perishable product that is harvested and shipped daily, a lot code uniquely identifying product from the field is significantly more efficient when determining whether to recall one or three day's shipments, should a food safety concern arise.

Brickel Creek benefits from its experience managing a certified organic operation. Many PSR documentation requirements are already in place, necessitating only minor adjustments to its present systems. Testing protocols to develop baseline data on water quality have changed under PSR and the farm's testing schedule needs to be revised. The sanitation protocols and employee training in place just require documentation to establish the necessary record trail.

CREATING AN ON-FARM FOOD SAFETY PLAN

Farming is a humbling occupation: every season it shows our limits of knowledge. Brickel Creek embraced the readiness audit as an educational opportunity to learn what was unknown. Along with the readiness audit, a resource book containing templates and checklists sufficient to create an on-farm food safety plan was provided by OEFFA.

The ink was hardly dry on the audit before Brickel Creek set up a lot coding system: Each lot is given a unique lot number that identifies the field where grown, the harvest date, and packing date (if different than harvest). Each tote is labeled with the lot number. Lot numbers are included on all invoices. A list of the wholesale buyers was compiled to facilitate immediate contact in case of a recall or another concern. Brickel Creek now conducts an annual mock recall to ensure its tracing system works.

Any compliance concerns with the PSR are addressed in Brickel Creek's Food Safety Plan (FSP). New policies on lot coding, water testing, and employee training were enacted.

FSMA FIELD OF VIEW: LESSONS LEARNED

The strength of Brickel Creek's FSP is that the document defines the operation's specific procedures and is not about checking off boxes in order to demonstrate compliance. Further, building a farm food safety plan in this manner gives the farm manager an intimate knowledge of the systems under her stewardship, which can be invaluable information. Consulting a written plan during times of crisis is sometimes impossible. However, recognizing situations as they develop and initiating corrective actions in real time can sometimes avoid or minimize a crisis.

Every action on a farm requires a certain degree of risk management. Thinking through your systems, developing contingencies, testing assumptions, and reassessing results through feedback loops are the actions that prevent crisis. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

Food Safety Just Makes Good Business Sense

MAPLESTAR FARM, AUBURN TOWNSHIP, OHIO

It's no wonder chefs love sourcing organic produce from Jake and Dawn Tretheway's Maplestar Farm in northeast Ohio. They grow quality products and run a well-organized farm, which has been in Jake's family since 1940 and has been certified organic since 2004. Their cute roadside stand welcomes people to the farm, but customers can also find them at the nearby farmers' market, or join their CSA and receive a weekly share of the farm's produce. When you talk with Jake, you understand early on that he has done his homework, and has a plan for his farming operation. In addition to leading the farm's production management, Jake is taking on the farm's food safety plan development.

GOALS AND MOTIVATIONS

While its buyers may never require a third-party food safety audit, Maplestar Farm takes food safety seriously and believes that following Good Agricultural Practices (GAP) just makes good business sense. Rooted in organic certification is the concept of "continuous improvement," and Maplestar Farm extends this mindset toward farm food safety planning. Maplestar Farm holds itself to its own higher standard and is interested to learn how its systems measure up to outside scrutiny. Given that desire, Maplestar Farm eagerly embraced the educational opportunity of a food safety readiness audit.

CURRENT ON-FARM PRODUCTION

In the direct marketing industry, freshness is the key to quality. Controlling the value chain from production and harvest through handling and distribution assures that the quality of the product purchased by the consumer is exactly what the farmer envisioned. Creating efficiency throughout the value chain assures freshness. Maplestar Farm chooses to serve the time-sensitive direct market niche of on-farm sales, CSA subscriptions, and weekly farmers' markets because its systems can provide produce at the peak of freshness. Chefs know a good thing when they taste it, and many place weekly orders with the farm.

Each staff member receives one-on-one training when they begin work at the farm. With a limited number of employees, the owners work directly with seasonal staff, continuously learning and collaboratively refining processes.

Maplestar Farm relies on a dedicated bed production system that is mechanically planted and cultivated. All crops are hand harvested. Fields are irrigated via drip tape, with water coming from a 10 acre spring-fed pond. The packing room water is from the farm's well, which has a particulate filter. Both of these sources are annually tested for coliform and nitrates.

In the early season, fields are checked daily to assess soil planting conditions and germination rates. As the season progresses, fields are monitored for pests, such as the cucumber beetle and signs of wildlife damage, which would prevent harvesting from a particular spot. Rather than doing these as separate steps, Maplestar Farm is combining the work of production, harvest planning, and food safety monitoring.

The farm sells to various outlets, which means that harvesting is happening almost on a daily basis during the growing season. Staff is given a harvest list with volume needed; actual harvested amounts are documented. Harvest tools and equipment are sanitized on a weekly basis. The farm uses a Julian date code for traceability of product.

Containers used are dedicated for either harvest or storage and differentiated by color. Any damaged containers are discarded. The harvest containers are not covered when transported back to the packing house, but contents are inspected there and product is discarded if it has been contaminated by bird droppings or other foreign matter.

"Having policies and procedures codified in writing allows for efficient auditing by the farm itself."

The building that houses the produce handling area is designed for multipurpose use. Areas are also dedicated for: dry and cold storage; maintenance and shop work; equipment storage, and, once a year–right in the middle of the season–everything's moved out, the place is given a good cleaning and a general spiff-up to host a farm-to-table dinner for 100 friends.

The handling area consists of a sink, moveable stainless steel tables, shelving, and a walk-in cooler. Some of the farm's produce is in contact with water prior to packaging: a three-basin stainless steel sink is used as a wash station and is sanitized prior to use. The building has high walls and exposed pipes and wiring above the wash station, attracting dust and other debris.

Product is packaged in bags, clamshells, wax boxes, and plastic distribution containers, which, as mentioned above, are color-coded to differentiate from harvest containers.

Break and restroom facilities are located in the farmhouse. Staff can drive a golf cart to the farmhouse if their work takes them some distance from the restroom facility.

Most Maplestar Farm processes—from the daily cleaning schedule to employee training—was not documented or codified in writing.

The farm's 30 chickens (for egg production) are allowed to roam the yard, but they do not go into the production fields. When the chicken house is cleaned out, the manure is immediately spread on a fallow plot, or a plot that is not growing food that year.

FSMA CHALLENGES

If a farm is growing produce, it has a system in place that is working, typically in an efficient manner. Defining that system through written policy, procedure, and documentation is a generally overlooked component in approaching food safety planning. The simple step of writing down what is already being practiced would bring Maplestar Farm very close to meeting the food safety expectations under FSMA. Additional compliance concerns include:

- Agricultural water testing is not sufficient under FSMA's Produce Safety Rule;
- Distribution packaging is not protected from contamination;
- The zones that products move through are not protected from contamination, and
- Barriers to prevent domestic animals access to production areas are not in place.

CREATING AN ON-FARM FOOD SAFETY PLAN

Maplestar Farm welcomed the readiness review audit as an opportunity to compare the farm's management systems with the external expectation of food safety. The audit clearly showed that the farm's present systems are sound; what was missing was capturing those details in a written document readily available for audit. Obtaining the OEFFA resource book, which includes templates to use (and avoid recreating the wheel), provided Maplestar Farm with the confidence to move forward with developing a broader farm Standard Operating Procedure (SOP) policy, and the specifically-focused Food Safety Plan for the farm.

Creating time within the farm season to devote to planning is always a challenge for farm operations. However, understanding the benefit of establishing an overall increase in efficiency provided Maplestar Farm with the incentive to start the planning process. Corrective actions within the Food Safety Plan include:

- Instituting a scheduled water quality testing policy;
- Establishing and documenting a cleaning and sanitation protocol;
- Providing a secure dry storage area for packing materials and containers;
- Establishing a product recall system, and
- Limiting the range of the poultry forage area.

FSMA FIELD OF VIEW: LESSONS LEARNED

Investing in the efficiency of your systems—such as easily-sanitized surfaces or a water quality testing protocol—is the cost of doing business. Documenting procedures and keeping records is an investment in time, but also an investment in the farm. Knowing what data are important to capture, documenting the information efficiently, and being organized in a way that the information is readily auditable, takes some experience. Relying on various resources, such as what OEFFA provided, and going through the experience of an audit/readiness review, will help.

Maplestar Farm reaped the benefits of an external audit, which objectively analyzed the farm's management systems to a known standard that identified practices and omissions that are potential concerns. As the farm learned, having policies and procedures codified in writing allows for efficient auditing by the farm itself, or by an outside inspector. Establishing feedback loops creates the mechanism for continuous improvement, so having an annual employee training and conducting a self-audit to review the status of the farm's system is important, and just good practice. Informed management depends on accurate monitoring of the farming system. The more focused the information, the more accurate will be the corrective actions and improvements. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

The Customer is Always Right: Responding to Market Demand

JON SMITH ORGANIC FARM AND PRODUCE, RAVENNA, OHIO

If you've never seen muck soil in person, you might question what you are seeing: Can soil be that black? That rich? Jon's Organic Farm and Produce has been certified organic since 2009, and is a breathtaking five acre field that sits at the bottom of a hill in Ohio muck country just east of Akron. It grows some of the most gorgeous lettuces, which has made Jon's produce in high demand from area grocery stores. The soil is nutrient rich, because it is decomposed vegetation, also known as peat. As a retired greenhouse manager, Jon knew exactly how to use that medium to grow certified organic produce. Jon manages the farm and is its food safety coordinator. He has three employees through the growing season.

GOALS AND MOTIVATIONS

The customer is always right: A basic business mantra, and one that Jon's Organic Farm and Produce follows as it produces certified organic greens of a quality popular with shoppers of large national and mid-sized regional grocery store chains. The wholesale clients like the farm's products and, being aware of pending FSMA implementation, have concerns if the farm will be able to meet finalized compliance rules and continue to stock the shelves with Jon's beautiful produce in the future. The grocers have asked if Jon is "GAP certified;" that is, certified to meet Good Agricultural Practice (GAP) standards.

This is a dependable market that the farm would like to continue supplying, and so begins the journey towards food safety certification. In learning about Good Agricultural Practices, it became evident that what was actually being required of the farm was documented compliance with the "Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption" (21 CFR Part 112 to you and me), better known as the Produce Safety Rule (PSR). In Subpart C 112.22 (c), it directly states that to be compliant a "…responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate…" What can be clearer than that? It seems like a good place to start anyway.

CURRENT ON-FARM PRODUCTION

Jon's Organic Farm and Produce has five acres in a dedicated raised-bed system, all of it growing what the Food Safety Modernization Act (FSMA) defines as Covered Produce. An electric fence surrounds the field, which has been very effective in keeping wildlife out; groundhog and deer are the major pests in this area.

During harvest most products are field packed directly into the wax boxes that are then delivered to the stores. To save both on expense and to reduce waste, the farm reuses wax boxes provided by the stores. Harvest knives and tools are stored in the farm vehicles that are also used to transport product.

A carport awning set up at the east end the field offers some shelter as an area to store produce boxes prior to packing, and provides protected space to cure garlic. Some produce items, such as beets and other produce not covered by the PSR, are washed to remove excess soil using the water from a cistern located at the west end of the produce field.

Jon's Organic Farm and Produce is utilizing existing infrastructure as a sheltered post-harvest handling area. The handling area is also utilized for storage of harvest and distribution boxes, as well as tools and equipment. The cinderblock two-bay building serves both as the farm's machine shop and the pack house. While the space is large enough to accommodate both activities, they are not separated by a wall or other structure.

The standard procedure is to harvest and deliver on the same day. But every once in a while—say, with a big order, or when an overnight freeze is forecasted—packed produce will be stored in the walk-in cooler located in the pack house. Harvested product is recorded on a sales invoice and accompanies product in transport. A carbon copy is retained in the receipt book.

"The path lead Jon to a PSA training and an established food safety plan."

The only bathroom on site is located in the farmhouse, near the machine shed, and a short walk from the growing field.

FSMA CHALLENGES

Farming is sometimes seen as a lifestyle, a way of living. However, farming is also a business, a means of a livelihood. Is it easier to make your business a part of your life, or your life a part of your business? This is the crux of the farm's FSMA compliance conundrum. Under a sole-proprietorship structure, Jon's Organic Farm and Produce has considerable overlap between the personal and business. Personal lifestyle is a choice; business professionalism is a standard. The readiness audit disclosed multiple opportunities for improvement in the business' food safety management. The following outlines issues found:

- Cross contamination is a universal concern throughout the system;
- Policies on employee training and sanitation protocols are not established or documented;
- Agricultural water contacting product lacks testing documentation;
- Distribution boxes and harvest equipment are stored in exposed areas;
- The handling area is not enclosed and protected from workshop contamination;
- The climate-controlled storage area is in disrepair, including a not-functioning thermometer, and
- Pets in production areas are a contamination concern.

CREATING AN ON-FARM FOOD SAFETY PLAN

Farmers are doers; they get things done. In fact, the very word farming implies action. However, sometimes it's not about the do, but more about the how. Farms develop management systems by necessity and design those systems for convenience. As a sole-proprietor operation, Jon's Organic Farm and Produce has consistent and convenient systems for every process, but the written policy and documentation are limited to the Organic Systems Plan as part of its organic certification process. Learning how to put together a farm Food Safety Plan (FSP) was this farm's first step.

After learning of the requirement to complete a farm food safety training course, Jon's Organic Farm and Produce staff enrolled in a day-long grower training taught by the Produce Safety Alliance (PSA) and jointly hosted by the Ohio Department of Agriculture and the Ohio State University Extension. This "one and done" training accredits the individual (vs. the farm), and certification status follows the person to any farm operation.

Thus fortified with a PSA growers training, the results of a readiness audit, and the OEFFA food safety resource book, Jon's Organic Farm and Produce created its food safety plan. The plan addressed all compliance concerns disclosed in the readiness audit, including these corrective actions:

- Documented annual training was enacted for all employees, meeting requirements of § 112.22;
- Sanitation policy was enacted for all food contact surfaces, tools, and equipment;
- A tobacco use policy was enacted and areas of the farm were designated as off limits to smoking;
- Irrigation and water used in handling are tested on a scheduled basis;
- Distribution and harvest equipment are sanitized on a scheduled basis and stored in a secured area;
- Use of the climate-controlled storage and the handling area have discontinued until sufficient repairs have been made, and
- A policy and response plan was enacted to mitigate contamination concerns of domestic animal access to production areas.

FSMA FIELD OF VIEW: LESSONS LEARNED

Many farms like Jon's Organic Farm and Produce are asked "Are you GAP certified?" by potential buyers. The buyers seek to protect their customers from getting sick, and ultimately seek to limit their own liability. And, Good Agricultural Practices are indeed good practice. By responding to the needs of the market, a business can grasp the opportunity. In the case of Jon's Organic Farm and Produce, this story has a happy ending. By chasing the question of GAP certification, the path lead Jon to a PSA training and an established food safety plan. The farm is now positioned to attain third-party certification when requested by the market. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

Putting Experience to Work and Harvesting the Benefits

EARTH SOURCE PRODUCE, MORROW, OHIO

If you're not born into the culture, answering the call to farm is a courageous act. No land, housing, or established infrastructure will be bequeathed through inheritance. Matt Tomaszewski did not start out on a farm, and, in fact, farming was a career path change. With a degree in recreational wildlife/back-country horsemanship, Matt saw horse-powered farming as a way to apply his knowledge, support his values of an ecological lifestyle, and meet his farming interest. While the horse part has yet to come together, vegetable production definitely became Matt's calling, and he has worked on various organic and sustainable produce farms over the years. Having been employed as both farm labor and management, Matt launched his own farm, Earth Source Produce, in 2003 by leasing the land he needed.

GOALS AND MOTIVATION

Earth Source Produce landed at Big Tree Plantation in spring 2016 by leasing an isolated 7-acre field whose Conservation Reserve Program (CRP) contract was expiring. Land enrolled in CRP has limited management actions in order to stay eligible, and not being in production means that no prohibited substances had been applied for more than 10 years, making the land immediately eligible for organic certification.

Ten years of CRP management, however, is not conducive for vegetable production. Much of 2016 was spent remediating the field by removing sapling trees, interrupting weed cycles, establishing cover crops and raised-bed production areas, soil testing, and amending the soil. Recognizing 2016 as "year zero" allowed the focus to be on preparing for success: obtaining organic certification; establishing propagation and production zones; equipping a post-harvest handling area, and establishing marketing options. Investing time and resources in production, harvest, and handling efficiencies leaves little time to establish direct markets. Understanding this capacity limit, wholesale distribution appeared to be the viable option for Matt to pursue.

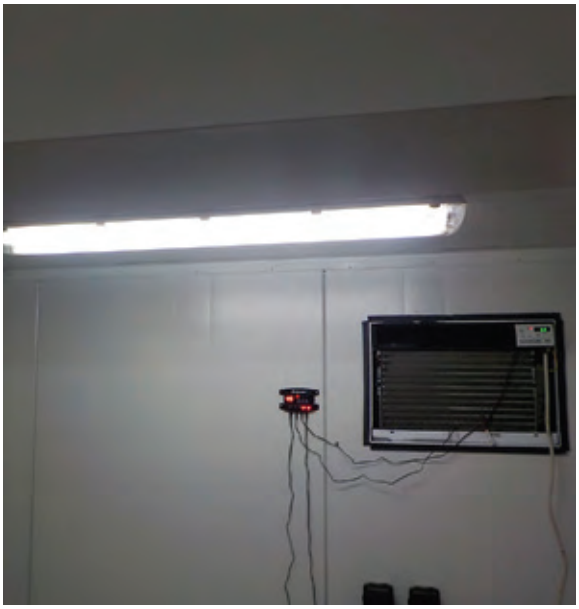
CURRENT ON-FARM PRODUCTION

Earth Source Produce production areas are surrounded by forest, providing a sufficient buffer for drift and other contamination concerns, except for wildlife. This is addressed through a 9-feet high perimeter fence. Presently, irrigation is managed by rainfall, and Earth Source Produce is developing a pond-sourced drip tape irrigation system.

The farm utilizes appropriate scale technology to manage precision-planted, precision-cultivated vegetables on a raised-bed system. Efficiencies of scale are implemented throughout the system. Crops are vacuum seeded into propagation trays filled with custom farm blend soil mixes specific to the crop. Trays are placed on heat mats in a germination chamber and moved to a solar-heated high tunnel when plants emerge. Seedlings are hardened off in the protected side of the propagation shed and transplanted with a water-wheel planter or by hand. Crops are mechanically cultivated with a variety of implements including sweeps and knives, basket and tine, and the ubiquitous scuffle-hoe weeders. All crops are hand harvested for quality assurance.

Harvest equipment is sanitized prior to use and crops are transported from the field in a covered vehicle to a post-harvest handling space Earth Source Produce leases from a neighboring farm. Exclusive use areas are designated within the shared building for each operation. Most crops are hydro-cooled in a dunk tank filled with water. Crops are packaged in sanitized, collapsible, reusable plastic containers and stored in dedicated area of the shared-use walk-in cooler. Earth Source Produce utilizes a Julian date-based lot coding system, which is attached to each distribution container.

Presently, the majority of the harvest is marketed directly through farmers markets. Earth Source Produce also supplies produce to a neighboring farm,



> " As the farm moves forward, codified procedures will be integrated and training will follow an appropriate timeline, making it ready for a third-party audit."

thereby increasing and diversifying the products available to that farm's restaurant clients. Earth Source Produce recognizes the efficiency of the wholesale market and sees this sector as having the most potential for growth.

FSMA CHALLENGES

Having the advantage of experience and exposure to various management systems on multiple certified organic farms can provide clarity of perspective, which has been the case for Matt. Knowing what the picture looks like before assembling the puzzle pieces is a definite advantage. Matt is well aware of the FSMA standard and what it takes to be compliant with the rule. Getting to the details of codifying systems in writing and documenting the testing and education requirements are planned and Matt will take full advantage of FSMA's implementation period. Finer nuances uncovered during the readiness audit include the need to:

- Start water testing prior to using the pond to irrigate crops
- Increase the effectiveness of packing house pest control measures

CREATING AN ON-FARM FOOD SAFETY PLAN

Procedures that the farm had in place were sufficient to pass all areas of the readiness audit. Codifying a written plan and the required documentation will take place during the FSMA implementation period. Earth Source Produce has benefited from attending an OSU Extension GAP training, and has accessed the templates and resources provided through this project. The farm is confident of its ability to meet the requirements of the FSMA standard within the allotted time period.

FSMA FIELD OF VIEW: LESSONS LEARNED

There really is no substitute for experience. Being directly responsible for food safety protocols on other farm operations over the years has made the procedures habit for Matt, and is why so many of the food safety practices were in place for Earth Source Produce's inaugural production year at the Big Tree Production location. As the farm moves forward, codified procedures will be integrated and training will follow an appropriate timeline, making it ready for a third-party audit, which the farm's wholesale buyers may demand, and, as the farm grows larger, will be required by FSMA. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

Incorporating Food Safety in Whole Farm Planning

LITTLE RILEY CREEK FARM, BLUFFTON, OHIO

The possibilities for Little Riley Creek Farm are exciting! This northwest Ohio farm was purchased in 2015 by Amanda Wischmeyer and Jon Tuttle, who have dedicated themselves to carry on organic farmer and stalwart conservationist Phil Kingsley's stewardship of the land. Amanda runs the farm, with help from Jon, father, Dale, and three children. Phil had the land in organic grain production, and the Wischmeyer-Tuttle family are at the beginning stage of expanding into vegetable, fruit, hay, livestock, and tree nut production, and deciding how exactly to diversify their operation. New beginnings mean assessing their current infrastructure and how to best use it, and to identify future needs.

GOALS AND MOTIVATIONS

Little Riley Creek Farm's vision is for a diversified sustainable homestead producing certified organic grains and also a market garden supplying vegetables to local retail outlets and farmers markets. A farm Food Safety Plan (FSP) is a foundational component of a sustainable operation. Designing harvest and handling systems with meeting food safety rules in mind at the outset saves correcting their farm plan later on.

CURRENT ON-FARM PRODUCTION

At the time of the OEFFA visit, Little Riley Creek Farm's basic infrastructure was still being set up. Production was limited the previous season, but with the plan to increase production, factoring in food safety is a timely consideration.

The farm has 1 ¼ acres designated for vegetable production, and an additional sweet corn patch is planned. To help fertilize the land, livestock have a prominent role in the farm's organic management goals, and a flock of chickens has been established. The chickens are managed in mobile cages, and some are allowed to roam free.

With such a small operation, produce has been harvested on market day—either going to the farmers' market, or to a small natural food store—so there has been no need for storage plans at this time. The equipment currently used, including harvest knives and containers, is stored in an open garage, co-mingled with other items stored in the building. Buckets are used for multiple purposes, without a clear delineation of which are used in the field and which are used for storage and distribution. Wooden baskets are used for market displays.

FSMA CHALLENGES

Farm ownership and specialty crop production are new endeavors for the Wischmeyer-Tuttle family. Every system is being designed afresh. The readiness audit conducted on the farm revealed the need for systems planning: product must move from field to market safely through flow zones. Flow zones, including tools and equipment, must be dedicated to specific tasks, and protected from contamination. Additional areas of concern include the following:

- Since handling and storage areas on Little Riley Creek Farm are yet to be constructed, all equipment is currently stored, mixed in with other items, in a non-secured area with evidence of pest and feral cat presence;
- Wooden baskets used for market are difficult to sterilize and are a cross-contamination concern;
- The family van is used to transport the farm's products to market, but does not have a regular clean out schedule to avoid possible cross contamination;
- Proximity of the chicken tractor use to production areas increases the chance of contamination, and
- Well water is planned for primary irrigation use, possibly supplemented by a rain-catchment system.

"While some farms, like this one, are exempt from the FSMA rules, no farm is exempt from producing and distributing safe food."

CREATING AN ON-FARM FOOD SAFETY PLAN

Yes, the farm has its work cut out for it, but with Little Riley Creek Farm just getting started in planning its farm production, harvest, and post-harvest set up, food safety considerations can be included in building construction, equipment acquisition, and production design. The priorities of a farm are determined by necessity. With the majority of cropland dedicated to grain production, Little Riley Creek Farm's first priority is cropping plans and rotations. Once the greater land management plan is determined—and vegetable production's role within it—then the focus can turn toward post-harvest infrastructure and establishing a market presence. For Little Riley Creek Farm, the initial path of direct marketing allows time to incrementally develop production and support systems. As the farm's capacity grows, wholesale distribution can be a consideration.

The farm's initial work on food safety planning has shown the need for a written policy and procedural documents, which will be kept in mind as the Wischmeyer-Tuttle family plan out the production and marketing systems, and incorporate staff into the farming operation. Little Riley Creek Farm is not quite ready to finalize a FSP, especially since a market-driven opportunity has not forced the situation, and they are an Exempt farm under the Food Safety Modernization Act (FSMA). Its produce will be direct-marketed during the FSMA implementation period and while the farm maintains Exempt status. Corrective actions taken as a result of the readiness audit include:

- Discontinuing the use of chicken tractors in production areas;
- Creating a dedicated use handling area with poured floors, custom drains and stainless-steel sinks and tables;
- Constructing a "cool-bot" climate-controlled storage area, and
- Obtaining uniquely identifiable harvest containers.

FSMA FIELD OF VIEW: LESSONS LEARNED

Little Riley Creek Farm generously shared its story, which shows what needs to be considered in the early days of a farm enterprise. For the Wischmeyer-Tuttle family, the demands of grain production and family life are taking priority, in the near term, over developing specialty crop markets. The farm has benefited, however, by beginning to factor in food safety planning and implementation as they work to diversify their operation. While some farms, like this one, are exempt from the FSMA rules, no farm is exempt from producing and distributing safe food. Little Riley Creek Farm is making the responsible and efficient management step of factoring in food safety into its farm from the start, rather than growing the farm, and then considering food safety practices and procedures. ■

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION

No Fuss, No Muss: Passing the Third-Party Audit with Flying Colors

MOTHER EARTH FARM, DUNDEE, OHIO

When Mike and Heather Malicky started Mother Earth Farm in 2009, they knew that soil fertility was key to their vegetable production goal, and initially built it by leasing their fields to a local dairy for hay production. In 2015, they raised their first vegetable crop, becoming certified organic right out of the gate. Mother Earth Farm, located in eastern Ohio, now produces approximately 10 acres of certified organic vegetables and herbs. This represents just a portion of the farm's 1000 acres, which are maintained as woodland, grassland, savanna, hay fields, and access roads. Mike serves as farm manager, and Heather is the farm's food safety officer. Their children join them during the growing season, with one additional employee, and sometimes that employee's family is hired to help out with harvest during especially busy times.

GOALS AND MOTIVATION

Typically, when opportunity comes knocking it's dressed in overalls and looks like work. The Malickys have made a career out of recognizing opportunities that others have overlooked. With a successful record of purchasing struggling businesses, instituting efficient management systems and turning them around toward profit, embracing a challenging opportunity is just part of the Malicky identity. When looking at the Mother Earth farmstead and planning for diversified complementary enterprises, they wisely began with a market survey. During fact-finding visits to regional markets, the Malickys were approached by a distributor with the offer to buy any and all certified organic vegetables they can produce. With a great opportunity to wholesale produce to a northeastern Ohio produce distributor, the Malickys quickly became vegetable growers.

CURRENT ON-FARM PRODUCTION

Mother Earth Farm started with a clean slate: the land under their management had previously sat fallow. This also meant that there was no established farm infrastructure or buildings. Constructing support buildings and acquiring production equipment was the first step.

Vegetable production was based upon succession plantings of single-seeded, single-harvest root crops like beets, turnips, onions, and garlic. To clean and handle harvested products, the couple went from a makeshift handling area outside under pop-up tents to building a hoop structure to serve as their packing house. Because they had developed their farm food safety plan prior to this transition, they were able to set up their processing line to meet food safety standards, as well as meet their need to efficiently run their post-harvest operation.

One of the benefits of a relationship Mother Earth Farm has with a wholesale distributor is the access to supplies and equipment. The distributor provides sanitized Reusable Plastic Containers (RPCs) for the farm to pack in its beets and other produce. The RPCs come wrapped in plastic, ready for use. The farm saves money by not having to invest in owning these units, and benefits from having ready-to-use bins to pack its produce.

Cooling down produce properly is important for the product's shelf life, as well as ensuring food remains safe. Irrigation and product wash water is from an on-site well. The well is on a monthly test schedule during the harvest season to establish a baseline of water quality. The ice used on harvested products, such as beets, is purchased from a local supplier that uses potable water to make its ice. The ice comes in bags, and is kept in a holding bin, which the supplier cleans and sanitizes on a schedule, and meets the National Organic Program (NOP) standards. Coolers are checked once a day Monday through Friday when packed produce is stored.

The farm does a great job with its traceability work. Harvest information is added to a log sheet, which captures the number assigned to that specific field and the date the product was harvested. The product containers or pallets

"The Malickys decided that the most efficient step was to hire a consultant to audit their farm, create a custom food safety plan, including all required documentation forms, perform and document all testing, perform mock audits and recalls, and stand in as their proxy during their third-party food safety audit."

are identified with the lot code. Mother Earth Farm uses the Julian dating code system, which works this way: Take the last number of the year and list that first; then take the Julian number of the current date—that is, the actual continuous counting of days until reaching today—and list that number; and a two-letter code identifying the product. Thus, Cherry Belle radishes harvested on July 10, 2017 would be coded as: 7191CB. The field of production is documented on the harvest sheet.

The farming operation is a bit spread out, so any employee that is more than a 10 minute walk away from a restroom facility has access to a farm vehicle to get to a facility. Mother Earth Farm contracts with a private company to service the port-o-let.

FSMA CHALLENGES

The Malickys have been capitalizing a vegetable and hay operation, managing planting timelines and harvest schedules, planning and developing the farm's infrastructure, while also working hard to be responsible parents. So it's not surprising that learning about the Produce Safety Rule (PSR) and crafting a Food Safety Plan (FSP) is a comparably unappealing priority. Given there are only so many hours in a day, the Malickys decided that the most efficient step was to hire a consultant to audit their farm, create a custom food safety plan, including all required documentation forms, perform and document all testing, perform mock audits and recalls, and stand in as their proxy during their third-party food safety audit.

CREATING AN ON-FARM FOOD SAFETY PLAN

Contracting out the planning work provided benefits beyond food safety. After holistically reviewing the farm, the consultant suggested production and post-harvest efficiencies, and identified potential marketing opportunities. Once the plan was complete, the consultant reviewed it in depth with the farmers, assuring their understanding of its details. All documentation forms were explained and an audit preparation checklist was provided.

INDEPENDENT THIRD-PARTY AUDIT: PASSING THE TEST

Mother Earth Farm contracted with an independent agency accredited to provide auditing services under the United Fresh Harmonized Standard. The audit lasted approximately two hours. The auditor reviewed the farm's Food Safety Plan for the first 90 minutes, and asked to see documentation related to: purchased ice water quality; the internal audit, performed five months prior to this audit; the cooler calibration schedule; manure use; transport cooling policy; glove use policy, and policy for use of protective equipment.

Points were deducted for: insufficient policy for glove and protective equipment use; internal audit failed to document corrective actions, and an ice quality certificate was not on file. The farm audit had a final grade of 97 percent, and a temporary certificate was issued on the spot.

FSMA FIELD OF VIEW: LESSONS LEARNED

There has been a mantra from the regulatory agencies of "education before regulation." Unlike organic certification, food safety standards do not prohibit an auditor or inspector from providing advice or consultation, and these actions are encouraged when the goal is safe and efficient food systems. Mother Earth Farm's audit, unfortunately, was a missed educational opportunity. The auditor did not share his observations or provide ideas for corrective actions that the farm could make in its quest to be food safety compliant. The farmer is purchasing the expertise of an auditor, seeking to learn as much from the test as from the studious preparation. The auditor is uniquely situated to encourage continuous improvement by recognizing and identifying the minor tweaks of corrective action. This kind of action is of great benefit to the industry and the people it serves. ■

HELPFUL RESOURCES

Note: Please contact the OEFFA office if you need assistance obtaining these documents.

FSMA Produce Safety Rule 21 CFR 112
https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfCFR/CFRSearch.cfm?CFRPart=112
Complete text of the Food and Drug Administration federal law.

Good Agricultural Practices (GAP)/Good Handling Practices (GHP) Harmonized Food Safety Standard
http://www.unitedfresh.org/content/uploads/2014/07/Combined-Harmonized-Standard-v.1.1-FINAL-7.27.17-copyright.pdf
One code of standards that is compliant with FSMA, with an established auditing process.

Ohio Ecological Food and Farm Association (OEFFA) Food Safety Webpage
http://policy.oeffa.org/foodsafety
Access resources utilized during this project.

National Sustainable Agriculture Coalition (NSAC) Food Safety Webpage
http://sustainableagriculture.net/our-work/issues/food-safety/
Helpful guidance documents and resources.

Food and Drug Administration (FDA) Guidance
https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/default.htm
Resources and update postings throughout the FSMA implementation period.

FDA FSMA Technical Assistance Network (TAN)
https://www.fda.gov/food/guidanceregulation/fsma/ucm459719.htm
Post questions and receive answers directly from FDA. The site includes an archive of previous answers and established precedents.

Produce Safety Alliance
https://producesafetyalliance.cornell.edu/
Accredited growers training classes and helpful resources.

North Central Region Center for FSMA Training, Extension, and Technical Assistance
https://ncrfsma.org/resources-topic
Connect with resources and food safety experts.

Local Food Safety Collaborative
https://localfoodsafety.org/
Accredited growers training classes and helpful resources.

USDA Harmonized Audit
https://www.ams.usda.gov/sites/default/files/media/GAPGHP_Checklist_no_spell_Checklist_Enabled%5B1%5D.pdf
Example of an audit review form aligned with the Harmonized Standard.

USDA Field Operations and Harvesting Checklist
https://www.ams.usda.gov/sites/default/files/media/ProduceGAPHarmonizedAuditChecklistFieldandHarvest3.pdf
Self-assessment checklist used in developing a Food Safety Plan covering production and harvest operations.

USDA Post-Harvest Operations Checklist
https://www.ams.usda.gov/sites/default/files/media/ProduceGAPHarmonizedAuditChecklistFieldandHarvest3.pdf
Self-assessment checklist used in developing a Food Safety Plan covering post-harvest operations.

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