



Fall 2025

Safe Wisconsin Produce

Members of Oneida Re-learning to Grow White Corn

Lea and her mom, Laura, wanted to re-learn how their ancestors grew corn, in the hope that future Oneida generations would know corn abundance. About 10 years ago, Lea, Laura, and their family tried and failed at growing corn.

Lea and her mom hoped to improve and wanted to meet with other Oneida corn growers for advice. They invited other corn growers to a gathering and conversation about soil health and best growing practices. They learned that other families were also struggling with growing corn. The farmland in the area was degraded from decades of commercial farming.

From that meeting, 10 families wanted to experiment with the ancestral practice of growing corn communally. Laura spoke with Oneida Nation and was able to lease nine acres of farmland. She and her husband, Robin, purchased basic farm equipment from auctions. They traded wild rice for corn seed with Onondaga Nation in New York. Having access to land, equipment, and seeds, the families were able to plant their first field just two months after their first meeting in 2016. They fundraised money and received grant funds to participate in research growing trials. True to their soil health roots, the research trials focused on using fish emulsion for nutrient applications. The fish emulsion added necessary nutrients to the degraded farmland and imitated the ancient practice of burying fish scraps in three sisters mounds of corn, beans, and squash.



Figure 1. White Corn

Eventually, they named their group Ohe-láku, meaning Among the Corn Stalks. They primarily grow Tuscarora White Corn, an heirloom variety that does not dent and sometimes produces three to four ears per stalk. It is very abundant, produces long ears, and can be used to make hominy, corn flour for bread, or milled for mush. Because of the corn's diversity, moisture content, and genetic variability, it is difficult to machine harvest without causing considerable damage.

Over the past decade, Ohe-láku has expanded to five acres of white corn, with a portion dedicated to the three sisters. New families have joined the effort, and Ohe-láku relies on about 15 families to exchange work hours for corn shares. Hand-harvesting the corn, husking, and braiding for drying requires more than 1,000 hours of labor per acre of corn. Because the corn is planted together, Ohe-láku uses an honor system where families report their hours worked to determine their corn share at distribution time.

Growing white corn with traditional methods is a communal effort and has taught Lea and Laura many valuable lessons. To be successful at growing corn, one must be aware of the health of the soil and water. It is important to maintain the natural ecosystem and know that a cornfield is also a habitat that can't be destroyed. When planting, there is an agreement with the environment, and one third of the corn is reserved for animals, one third for humans

to eat, and one third for seeds for the future. Most importantly, growing together builds community, a space for sharing traditional teachings and language, and creates space for intergenerational learning and relationships. As Lea and Laura’s Oneida elders say, “You can tell the health of a community based on the health of the corn field.”

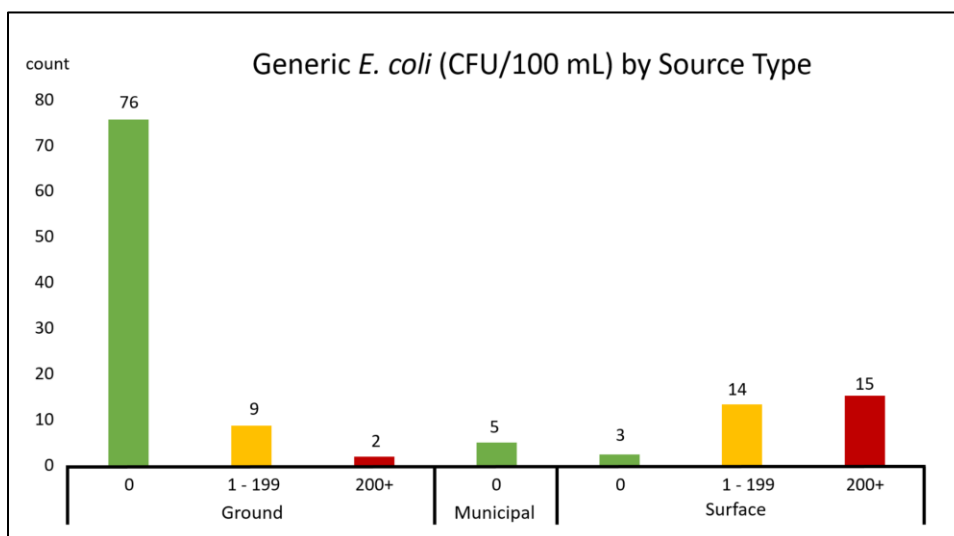


Figure 2. Oneida White Corn

Findings from Water Sampling

Now that rules have changed for agricultural water, the Department of Agriculture, Trade and Consumer Protection (DATCP) is looking at much more than bacterial counts during our regulatory inspections. Farms are to conduct their own agricultural water assessments and systems inspections annually but are not required to meet previous microbial quality criteria for water used during growing activities. However, water must still be safe and of adequate sanitary quality for its intended use. DATCP is also still interested in knowing the amount of *Escherichia coli* (*E. coli*) in various agricultural waters because it can indicate when and where there might be fecal contamination that could lead to foodborne illness.

Between August 15, 2024, and September 10, 2025, our sanitarians collected 124 water samples from groundwater, municipal, and surface water sources, and at various points of use. They were analyzed for the number of colony forming units (CFU) of generic *E. coli* 100 milliliters (mL.) About one in three samples had detectable levels and about one in six samples had over 100 CFU/100 mL. When looking at just surface water, over half of samples were greater than 100 CFU/100 mL. As expected, we found lower levels more often in groundwater and municipal sources compared to surface water, but there were a few surprises. A stream that appears crystal clear can have high levels of bacteria, and a cloudy dunk tank might be unclear but not unsafe. Below is a graph of the results.



Our results are only a snapshot in time and show there is a lot of variability in the quality of surface water. Regardless of source, when the water is used for harvest and post-harvest activities, the Produce Safety Rule requires that there is no detectable *E. coli* in a 100 mL sample. Especially for recirculated water and reused water, such as water in produce wash tanks, it is critical that farmers establish water change schedules, check temperatures, and visually monitor the quality. Infiltration of bacteria into produce from the water and spreading to food contact surfaces are just a couple of ways that contamination can occur. While not a requirement, having a detectable residual sanitizer level can help minimize the spread of contamination. We take a closer look at bleach, chlorine sanitizer, and other sanitizers used for this purpose in the next article of this newsletter.

Bleach and Chlorine Sanitizer: What's the Difference?

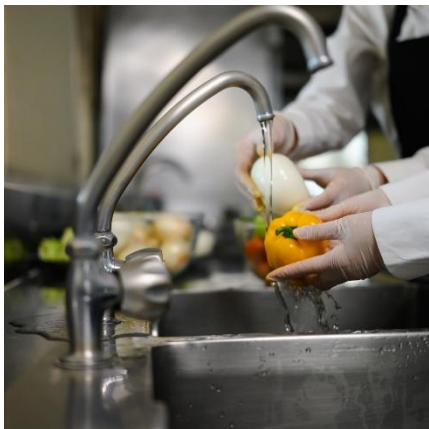


Figure 3. Washing Produce

There are many formulations of bleach in the marketplace, but not all are intended for sanitizing. Understanding what you are trying to accomplish and how to read a sanitizer label are important elements of ensuring that your produce is safe. In this article, we'll explore the difference between chlorine-based bleaches and chlorine sanitizers and provide some broader considerations for use of chemical sanitizers in your operations.

Bleach is a generic name for a solution of sodium hypochlorite, which is the active ingredient, and water. Bleach typically ranges from 3.0% to 12.5% potency. Not all bleach products are safe to use with food since they may contain fragrances, thickeners, and stabilizers that are unapproved food additives.

According to the Environmental Protection Agency (EPA), chlorine sanitizers are technically a type of antimicrobial pesticide intended to kill at least 99.9% of bacteria on surfaces. Some chlorine bleach products are labeled for use to clean, sanitize, and disinfect surfaces, but the difference in how to do these comes down to concentration and contact time. Cleaning must be done before sanitizing, often with a detergent. Bleach cannot effectively sanitize a surface that is not clean. Disinfection can kill bacteria **and** viruses but requires greater concentrations and/or contact times than sanitizing and may leave residual chlorine at levels that are not safe for contact with food.

What to Look for on a Sanitizer Label

- EPA Registration Number: This ensures that when using the product correctly, it will be effective as a sanitizer and will limit the product's risk to humans, wildlife, and the environment.
- Directions or Instructions for Use:
 - Look for the words "sanitize" and "food contact surfaces." Many products are labeled to disinfect kitchens and food businesses, but these could include non-food contact surfaces.
 - Concentration and contact time: Use a clean measuring tool and add bleach to water—not water to bleach—to avoid splashing concentrated solution or pure chemical. Contact time is the minimum duration that surfaces must stay visibly wet. Air dry unless otherwise directed.
 - Verify uses: Virtually all chlorine sanitizers are intended for non-porous food contact surfaces, but only some are also listed for irrigation water systems and/or fruit and vegetable wash water.
- Efficacy statement: Sanitizers used by produce growers must be specifically labeled to control public health organisms such as *Salmonella enterica* or *Listeria monocytogenes* when used to meet regulatory requirements for sanitizing.

- Instructions for storage and disposal: Chlorine sanitizers are highly reactive oxidizers which makes them very effective at killing bacteria, but this also makes them degrade faster if left in direct sunlight, exposed to high temperatures, or with the container open.

Other Tips

- Use color-changing test strips within their expiration date to verify chlorine levels.
- Change solutions as necessary to maintain appropriate levels. Chlorine is consumed by organic material and cannot be effective in dirty produce wash water or solutions with excessive residue.
- Do not mix chemicals unless indicated on the label. Chlorine bleach or sanitizer combined with ammonia, vinegar, and certain other substances can produce poisonous chlorine gas.
- Consider other sanitizers: Peroxyacetic acid, quaternary ammonium compounds, and other categories of sanitizers each have their own advantages and disadvantages. Some are more stable, more compatible with certain materials of tools and equipment, or can be used in organic operations.
- Train your workers on the proper use of chemicals and restrict access to those who have been trained.
- Label any containers that aren't original with the active ingredient and keep safety data sheets accessible.
- Verify that the chemical you are using is registered for use in Wisconsin.

The Produce Safety Alliance has a [listing of sanitizers](#) that are intended for use in produce operations and a [fact sheet](#) about EPA registration numbers and sanitizers. Note that establishing and keeping documentation of the date and method of cleaning and sanitizing certain equipment is a requirement of the Produce Safety Rule.

DATCP maintains a [listing of sanitizers and other pesticides](#) that businesses have registered for use and sale in Wisconsin.

Meet Lavern Zeist and the Central Wisconsin Produce Auction

Lavern Zeist is a member of our Produce Safety Advisory Council (PSAC) as a plain community representative. Mr. Zeist has been farming for 23 years, and he is heavily involved in the Central Wisconsin Produce Auction. This facility is open to the public and serves over 150 producers and sells wholesale to buyers. Lavern has acted as an order buyer at the auction for the past three years. Lavern is also a member of the national Plain Communities Food Safety Education Team (FSET) out of Ohio, representing the states of Wisconsin and Minnesota, and the northern part of Iowa. Through a recent interview, Safe Wisconsin Produce had an opportunity to learn more about Lavern's background and his involvement with the Produce Auction.

How did you start farming?

My father farmed for 50 something years and had a roadside stand. I didn't want a roadside stand because of how much work it was.

I started farming in 2003 with a half-acre of sweet corn and a tomato greenhouse. Then I expanded into two acres of corn and started growing squash and cucumbers and such.

How did you become involved in the Produce Auction?

The Produce Auction started in 2000. I live down the road from it, so I watched it be built. I was one of the beginning growers at the auction. The connections I've made at the auction have gotten me involved in PSAC and FSET.

Have you learned any important lessons from the Produce Auction?

The demand for safe, fresh produce is high. We always have buyers looking for good produce. We need to have a food safety plan in place to increase efficiency, grower support, and sales.

I want to see the produce auction grow for future growers and generations. There is a need for multiple farms to come together and have a place to sell safe produce. Land is so expensive and small acreage produce farms are an entry point for new farmers. The local, small-scale movement supports the auction.

What do you love most about the auction?

I love socializing at the auction. I also love being involved with food safety and quality as a farmer and an order buyer.

Why are you passionate about produce safety?

I think it's important to have good, clean product, especially within plain communities. I feel personally responsible for teaching produce safety to other growers.

I've seen the demand and supply see-saw, and when demand is bigger than supply, bad produce gets sold at the auction house.

Flooding In Fields: Are You Prepared?



Figure 4. Field Flooding

Flooding is becoming a more frequent issue for farmers in Wisconsin. The U.S. Department of Agriculture (USDA) Forest Service has found that a majority of Wisconsin is at least moderately vulnerable to increased flood flows due to landform characteristics. For produce farmers in particular, this means that preparing and having a plan to respond to flooding are necessary to help mitigate the risks to your crop and public health.

The Food and Drug Administration (FDA) describes flooding as the flowing or overflowing of a field with water outside a grower's control. Standing water that pools on the surface after a heavy rainfall, from intentional flood irrigation, or from other irrigation is not considered a high risk to produce safety. The flooding events of most concern are more severe, higher risk events from water runoff or overflow of rivers, lakes, or streams into fields. These flooding events

can be harmful to the health of humans and animals by spreading pathogenic microorganisms from animal waste and septic systems as well as pesticides, fuel, other chemicals, and heavy metals.

If flood waters (e.g., breached or overflowing streams, lakes, other water sources) contact the edible portion of a crop, it is considered adulterated by the FDA and cannot be sold or used as human food. Unfortunately, there is no practical method of reconditioning the edible portion of a crop that will provide reasonable assurance of safety for use as human food. Even crops such as watermelons and winter squash cannot be rendered safe by washing with adequate certainty. Contaminants can be moved to the edible part when cut or prepared or internalized into the edible portion through bruised or damaged areas which are not easily seen.

Evaluating Food Safety

Growers should evaluate crops that were in or near flooded areas but where flood waters did **not** contact the edible portion on a case-by-case basis for possible adulteration and consider the following factors in their evaluations:

- Sources of flood waters and potential contaminants

- Duration and depth of exposure including splashing
- Type of crop and potential to absorb contaminants
- Movement of livestock
- Stage of growth
- Speed of drying from soil type, topography, and drainage
- Potential to harvest without cross-contamination

Have a Plan to Reduce Food Safety Cross-Contamination Risks After Flooding

- **Before taking action:** Be sure to document and photograph for insurance purposes and contact your county Farm Service Agency. This can help the agency compile estimates for use in disaster declarations.
- **Sequence:** Conduct activities in unaffected fields first before proceeding to flooded fields.
- **Flagging or marking fields:** A buffer zone of 30 feet or greater is recommended to accommodate the turning radius of farm equipment and maintain separation between flooded and non-flooded areas.
- **Provide additional worker training:** Consider how workers' activities will need to change to avoid cross-contamination. You may need to train workers to utilize different routes, limit them to specific areas, specify different times to clean and sanitize, and how to properly use protective clothing.
- **Protective clothing, tools, and equipment:** Rubber boots, rubber gloves, aprons, tools, and other items used in flooded fields or with flooded crops should be cleaned and sanitized before use in unaffected fields or with unaffected crops. This may include tractors, plows, harvest knives, and harvest bins.
- **Segregation:** Crops that are adulterated or might be adulterated pending a disposition should be handled and stored separately so that they do not contaminate or become mixed with unaffected crops. Locate cull piles where runoff or leachate will not contaminate unaffected fields.
- **Destruction and replanting:** Tilling the crop under is often a relatively safe way of destroying an adulterated food crop in the field. However, re-entering a field too early may increase the risk of cross-contamination, getting equipment stuck, or compacting the soil.
- **Ensure that sewage and septic systems continue to operate as intended:** Septic tanks and pump chambers can sometimes fill with silt and debris, so use caution when pumping. Pumping during flooding or saturated conditions could cause the tank to float which may damage inlet and outlet pipes and become a source of contamination.

Although spring is months away it is never too early to develop a plan to reduce the food safety risks of flooding. You might come up with ways to quickly move or relocate sources of contamination such as portable toilets and stored chemicals. Consider avoiding growing food crops in fields that are prone to flooding. Write a plan to follow when flooding happens again. A flood can be devastating to not just crops, but also to entire communities, and by mitigating food safety risk you can ensure that produce entering commerce and your community is safe. For more information, view [FDA guidance](https://www.fda.gov/food/food-safety-guidance) at FDA.gov.

Annual Survey

REMINDER: If you move farm locations, please contact DATCP with your new farm address.

After years of diligent work—including on-site visits, phone interviews, multiple iterations of our annual survey, and various other data collection methods—Safe Wisconsin Produce (SWP) has developed a **comprehensive Farm**

Inventory database. With growing confidence in the accuracy and completeness of the data, the program is now transitioning from the development phase to ongoing maintenance.

With that, SWP has adjusted the frequency at which farms will receive the “annual” survey. Moving forward, surveys will continue to be distributed on an annual basis to operations that are currently covered by the Produce Safety Rule. Other operations will still receive the survey, but on a less frequent basis—typically once every two or three years depending on farm status. This targeted approach allows the program to keep the most relevant data up to date without overburdening growers.

Your response, regardless of how often you’ll now provide it, is extremely important. However, we may convert a farm’s status to covered if we do not receive a response. Current and accurate data helps ensure that the program is well-prepared for inspections and supports an ability to identify and address educational and resource needs. The survey format is unchanged by this update, noting that the renewal version will continue to be utilized whenever and wherever possible.

Welcome to Our Newest Staff!

Nichole Kirk joined our Safe Wisconsin Produce team as a Program and Policy Analyst June 2025. She works with farms to update our extensive inventory database and assists with the Produce Safety Advisory Council (PSAC).

Nichole’s educational background is in Geology, and she began her career working as a field geologist throughout the Midwest in the environmental consulting industry. She also has experience teaching high school agriculture in Indianapolis and working on urban, small-scale, and specialty-crop conservation projects with the Natural Resource Conservation Service (NRCS) in Wisconsin. Nichole lives in Madison and loves to travel, hike, try new restaurants, tend to her garden, and volunteer with school education gardens since she’s recently become a Master Gardener through the UW-Extension program. Welcome, Nichole!

Upcoming Training

The Safe Wisconsin Produce team is providing grower training on Sunday, January 18, 2025, at the Kalahari Resort (1305 Kalahari Drive, Wisconsin Dells, WI) as part of the Growing Wisconsin Conference. This course is free to attend and includes a PSA Grower Training Manual. There is a \$35 processing fee to provide a certificate for attending and completing the course. The training is recognized by the FDA as one way to satisfy the training requirement of the FSMA Produce Safety Rule, outlined in provision 112.22(c) that requires "At least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration." Use the [PSA Course Registration Form](#) to register today!

Contact Us

As always, the Safe Wisconsin Produce team welcomes your feedback and engagement. If you would like to share your produce safety story to be featured in the next newsletter, or if you have other questions, please send us a note at safeproduce@wi.gov or call (608) 224-4511.

Resources

SWP Webpage Updates: [Safeproduce.wi.gov](https://safeproduce.wi.gov) contains tons of helpful information for growers. If there is something you would like to see on the website, let us know. The page is intended to be a resource for growers, buyers, and consumers, and we appreciate your perspective.

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