HACCP Implementation in a Shared Kitchen Environment

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Purpose

This document examines the challenge of HACCP implementation in a shared kitchen environment. The first half of the paper discusses the feasibility and plausible use-cases of HACCP programs in shared kitchens. The second half of the paper offers recommendations for how a shared kitchen operator may align their operations to support HACCP implementation.

Preface

In the last decade shared kitchens have become an increasingly popular venue for food production. The volume of food produced in these spaces has grown as new facilities launch and individual processors continue to grow sales in existing shared kitchens. While use of a shared kitchen can lower the financial barrier to starting a food business, it does not lower the consumer or regulator's expectation for safe manufacturing processes. And so far, the shared kitchen operating model has presented a challenging environment for the implementation of industry-standard food safety systems, notably Hazard Analysis and Critical Control Points (HACCP) and Hazard Analysis and Risk-Based Preventive Controls (HARPC).

In order to glean the most from this paper, the reader will benefit from a basic understanding of HACCP principles. For a quick and compelling introduction to HACCP, consider reading *A Dividend in Food Safety*.

A final note to the reader: throughout this paper I use the term "HACCP" while also advocating for the risk-based approach that is more reflective of the HARPC framework. I recognize that the two frameworks, while similar, are not identical. However, I expect that the reader has a stronger familiarity with HACCP and so, for the sake of simplicity, I exclusively make use of that term.

Terminology

1. **Shared Kitchen**: Despite a wide range of shared kitchen models, this paper has adopted a broad definition: a commercial food processing space where multiple food businesses operate using some shared infrastructure. This may encompass concepts such as "incubator kitchens" "commissary kitchens" and "licensed commercial kitchens".

2. **Shared Kitchen Operator** - This refers to the host of the shared kitchen. The "operator" is the lessee or owner of the entire space and is commonly responsible for the facility layout, operating structure, and the maintenance of facility-wide systems. Typically, the operator does not conduct any food processing activities.

3. **Shared Kitchen User** - This refers to the business conducting food processing operations inside the shared kitchen. Shared kitchen users are also referred to as "members", "tenants", "clients", or simply "users". Shared kitchen users represent a wide variety of food businesses, including: bakers, food truck operators, delivery-only restaurants, meal kit services, food processors, beverage processors, caterers, and pet food processors.

A Quick Primer on HACCP

Hazard Analysis and Critical Control Points (HACCP) is a framework used in food processing that aims to protect consumer health by systematically identifying and minimizing hazards that may occur throughout the production process. To achieve this, the food processor must identify each point where something could go wrong and impact food safety. Next, they must define a process for addressing each of those possible deviations. This collection of written documents is called a *HACCP plan*. The food processor's enactment of this plan and maintenance of industry-aligned practices— known as prerequisite programs— is collectively referred to as a *HACCP program*.

It is easiest to construct a HACCP plan for a simple production process taking place in a stable environment. With a limited number of variables, there are fewer things that can go wrong and fewer contingency plans to outline.

A less controlled environment requires a more in-depth HACCP plan. Specifically, as uncertainty increases, so does the number of "what-if" scenarios where something could go wrong— and each of these requires a written procedure describing how to restore control in the process. At a certain point, the plan may become so complicated that it cannot be implemented consistently. And unfortunately, a HACCP program is a meaningless exercise unless it is enacted exactly as written in the plan.

The Feasibility of HACCP Implementation in a Shared Kitchen

There are numerous reasons why a business would choose to operate inside a shared kitchen. Most notably, shared kitchens drastically reduce the startup costs associated with launching a food business. Other perks include access to shared equipment, a cohort of like-minded food entrepreneurs, and dynamic workspaces that support flexible operations. However, the business model's prototypical emphasis on shared resources and fluid use of space undermines a fundamental principle of modern-day food production— that a processor must maintain total control over their process and surroundings in order to consistently produce safe food.

Below are some common features of shared kitchens which can create complexity in HACCP implementation.

◈ The use of shared equipment and limited physical separation between users increases the risk of cross-contamination and allergen hazards.

◈ A lack of agreement between operator and users about who is responsible for maintaining prerequisite programs (e.g. sanitation activities or equipment calibration) leads to sub-standard facility conditions. When these activities are provided by the operator as a service, they may be conducted in a way that does not meet HACCP standards.

◈ Users are powerless to address hazardous facility conditions (e.g. a crumbling ceiling) and the operator may be unwilling to remedy these conditions.

◈ Turnover of users means that new hazards are continuously emerging as new businesses cycle into the space.

Is it possible to enact a HACCP plan in a shared kitchen? Yes. A HACCP program can be designed and implemented in any shared kitchen— it is simply a matter of assessing the food safety risks and implementing controls to mitigate them. In fact, the format of the HACCP plan will include the exact same components as a plan designed for a food processor in a conventional facility. However, there are additional factors an operator should consider before supporting HACCP implementation in their facility.

When is a HACCP Plan Required?

At a certain point in any food business's growth cycle, management will face pressure from buyers and regulatory agencies to adopt industry standards for food safety. Typically, the first step in this process is the adoption of HACCP principles or the full-scale implementation of a HACCP program. There are two common scenarios when a shared kitchen user would consider taking these steps:

1. The user wishes to perform a high-risk process, such as vacuum packing, sous vide cooking, cook-chill, juice production, fermentation, smoking, curing, or seafood processing. These processes demonstrate such a major food safety risk that regulators universally require a HACCP program, regardless of the scale of production.

2. As the user increases production output and begins working with mainstream retailers, those buyers will demand assurance that the products are produced safely— even if the food processor doesn't perform one of the high-risk processes described above. At minimum, the processor may provide this assurance in the form of a written HACCP plan or Food Safety Plan[1] along with the records demonstrating the program's proper implementation.

It is possible that a shared kitchen operator doesn't host any users whose process requires a HACCP program. If this is the case, and if the operator has no plans to host these members in the future, then the operator will face a lesser burden to maintain the strict programs and food safety records required by HACCP.

On the other hand, a shared kitchen operator may already host or expect to host the types of businesses which require a HACCP program. In this case, the operator should ensure their infrastructure and systems are aligned with HACCP principles. Further, the prudent operator will assess each prospective HACCP plan on a case-by-case basis to confirm that the hazards specific to that process can be effectively mitigated in the shared kitchen. In order to understand the importance of this last step, the next section describes how breakdown in food safety systems would impact more than just one shared kitchen user.

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[1] A Food Safety Plan is the term favored by the FDA. It describes a company's collection of food safety documents and encompasses the principles of Hazard Analysis and Risk-Based Preventive Controls (HARPC). HACCP and HARPC are similar frameworks and a HARPC-aligned food safety plan will be accepted by FDA regulators as a satisfactory substitute for a HACCP plan.

Liability

A shared kitchen operator may be tempted to ignore the question of whether their facility is suitable for HACCP implementation. After all, it is the food processor's responsibility to develop and implement the HACCP plan, not the shared kitchen operator. Many shared kitchens already host users who have some sort of HACCP documentation or program in place. And when a prospective or a current user asks whether it's possible to enact a HACCP plan in the facility, the answer is often— why not?

Let's revisit why HACCP exists in the first place: to ensure safety in the food supply. When a HACCP plan is required, it means that there is a substantial enough food safety risk that the processor must prove each batch is safe for consumption.

It's important to note that the responsibility to follow a HACCP program rests squarely with the food processor— not the shared kitchen operator. However, if a foodborne illness outbreak were traced to a shared kitchen, the implications would be disruptive— if not catastrophic— for both the operator and other users working in that space.

Consider this: a foodborne illness originating from a pathogen found in a shared kitchen would likely prompt the recall of all products produced in that facility since the last scientifically validated deep-clean. If no environmental monitoring program is in place (i.e. if the operator is not routinely swabbing surfaces to check for the presence of pathogens) the FDA could demand the recall of all products ever produced by any user in that facility.

Recommendations for Shared Kitchen Operators

Unfortunately, there is no simple dichotomy which defines some shared kitchens as "HACCP aligned" and others as not. The shared kitchen operator should focus on the specific risks presented by food processing activities conducted in their space. In other words, an operator only needs to address the hazards that are present in their facility.

With this in mind, the recommendations below reflect conditions commonly observed in shared kitchens. Upon reading this section, the shared kitchen operator may find that only a limited number of these recommendations apply to their facility. The operator may also recognize that their facility can accommodate only certain high-risk activities or a limited number of high-risk businesses operating at one time. This is fine— we recommend that the shared kitchen operator approach these recommendations with a candid assessment of their space and an honest consideration of their ability to maintain new systems.

General

Comply with applicable regulations The first step in supporting HACCP programs is to comply with all applicable health regulations (federal, state, local). If there are outstanding health-code violations, the operator should consider addressing those first.

Understand HACCP Principles The simplest way to do this is to take a HACCP course (they are available online) and read through several HACCP plans. It is absolutely critical for an operator to have a thorough understanding of HACCP so that they can assess the plans and practices of shared kitchen users.

User Relationships

Set expectations with prospective users An operator should set clear expectations about how their shared kitchen may (or may not) be able to support HACCP implementation. A comprehensive tour of the space and candid explanation about how operations are conducted will support a prospective user in assessing the site's suitability for their HACCP implementation. If an operator already has HACCP programs operating in their space, they may be able to offer more practical details about how those programs are effectively managed.

Assess each case individually Since each production process entails unique food safety risks and HACCP supports a risk-based approach, the shared kitchen operator must consider each prospective HACCP program individually. At minimum, the operator should consider the final product, the process steps and the associated hazards. Then, the operator will be able to assess whether effective HACCP implementation is feasible in their facility. Note that this oversight is meant to reduce the shared kitchen's liability exposure, not to micromanage the user's operations.

Protect public health and liability If a user is producing illegally *without* a HACCP plan or is implementing their HACCP program improperly, the operator should immediately suspend that processor's use of the space until they are able to faithfully enact their HACCP program. This should not be viewed as punitive but rather as an effort to protect the shared kitchen and all of the users operating in the space.

Operations

Good news! HACCP is most easily implemented in shared kitchens where the operator has a "hands off" approach. Here's why: HACCP requires the food processor to maintain tight control over their process steps and keep records proving that those processes were performed correctly.

If the shared kitchen operator provides services that are related to food safety— for example, cleaning processing areas on a recurring basis— the user working under a HACCP plan cannot (legally) trust that those activities are being performed properly. Instead, the user must confirm that those cleaning activities are effective, verify that they are being performed according to schedule, and keep records to prove it. Maintaining this kind of coordination with the shared kitchen operator is sufficiently difficult that most users implementing a HACCP program choose to conduct all sanitation activities themselves— even if the operator is already providing those services. Below are some specific recommendations for building HACCP-aligned operations in shared kitchens:

Define who is responsible for maintaining prerequisite programs (PRPs) Operators should define who is responsible for maintaining prerequisite programs and share this information with users before they begin operating in the space. This way, both the operator and user understand what systems they are accountable for maintaining and where they can demand accountability. PRPs may be grouped into three broad categories:

1. *Operator's responsibility:* This refers to prerequisite programs which the operator is responsible for maintaining and documenting. These programs typically favor centralized management, and may include:

   ◈ Pest control
   ◈ Maintenance of shared equipment
   ◈ Waste management
   ◈ Clean water supply

2. *User's responsibility:* This refers to PRPs which the user must enact and maintain on their own. Typically, these programs are unique to each food processor and may include:

   ◈ Product traceability
   ◈ Supplier verification
   ◈ Food handling practices

3. *Overlapping Responsibility:* This refers to PRPs that may be maintained by both the operator and the user. For example,

◈ Control of employee health -- both the operator and user have employees who must comply with employee health policies.

◈ Allergen control -- The operator may control allergens through the structural zoning of space while users must maintain allergen control through their production process and storage methods.

◈ Sanitation activities -- The operator may offer a basic sanitation program while the user conducts additional sanitation activities on their own.

By defining responsibilities and enforcing accountability (even among their own staff), the operator protects the kitchen from a "tragedy of the commons" scenario where facility conditions deteriorate over time.

Allow users to retain process control Users should be allowed to pursue a high degree of autonomy so that they can maintain total control of their process and ensure their pre-requisite programs are effective. Any "concierge" services or prerequisite programs offered by the shared kitchen operator should be structured so that a business can "opt out" and conduct those activities themselves, according to their HACCP plan.

Make food safety records available: When the operator performs a prerequisite program related to food safety, a record of that activity should be produced and made available for users to access. This may include:

◈ Sanitation records
◈ Records of equipment maintenance and calibration
◈ Refrigeration logs
◈ MSDS records and product specs for all chemicals/consumables onsite
◈ Pest control reports
◈ Receiving logs (if raw ingredients are received by the operator on behalf of the user)

Strive for operational consistency and communicate changes A processor's HACCP plan will define not only the details of their specific process but also details pertaining to the overall facility and the prerequisite programs applied by the operator. In the same way that a change to the business's production process would

require them to update their HACCP documentation, so would operational changes implemented by the shared kitchen operator at the site level.

While it is important for operators to continuously improve their systems, it is also important to acknowledge that each user's HACCP documentation must reflect these changes once they occur. For this reason, the operator should communicate any upcoming changes to food safety systems with the entire user base. This will give users an opportunity to consider those changes and adjust their HACCP plans accordingly.

Facility Layout

The arrangement of workstations, storage, and utility areas in a shared kitchen can be optimized to support HACCP implementation. While it may be prohibitively expensive to undertake large scale infrastructure improvements, an operator may be able to address hazards in the facility layout by adjusting the use-of-space. Fortunately, HACCP is a flexible system that allows a processor to minimize hazards using any method that is safe and effective. An operator may consider the following strategies:

Offer dedicated access processing spaces If possible, an operator should offer dedicated-access processing spaces that a single business can occupy long term. This arrangement allows users to operate with high levels of process control, favoring a simpler HACCP program.

Use distance and barriers to minimize contamination risks in shared spaces If businesses operate in a shared space, an operator can structurally mitigate contamination risk through physical barriers (e.g. partitions) or a buffer zone between processing areas. Avoid layouts where prep tables are directly adjacent to each other and where cross contamination may easily occur.

Zone food processing and storage activities based on risk profile An operator may zone the space based on the types of risks presented by processing activities. This structurally minimizes opportunities for contamination. Types of zoning include:

- ◈ Allergen-based zoning: This may confine certain allergens to specific zones
- ◈ Hygienic zoning: Higher risk processing activities are confined to areas where higher standards of hygiene and sanitation are in place.
- ◈ Ingredient-based zoning: The use of certain ingredients are confined to specific zones, based on associated microbiological hazards

Offer dedicated-access storage spaces An operator may offer dedicated-access storage spaces to protect stored goods from interference or contamination. Possible solutions may include individually lockable storage closets or cages. In cold storage, dedicated reach-in refrigerators allow for individual temperature control, product security, and minimization of contamination risk from other users' products.

Facility Maintenance

Implementing a HACCP program requires the food processor to assess any risk that may occur— including hazards that originate from the building itself. Even in a conventional food processing facility, it is common for the renter to assess a hazard that the only the building owner can repair, such as a leaky roof. In the shared kitchen environment, the user has even less control over facility conditions than a food processor operating in a conventionally rented space, and this may be the cause of some anxiety. Below are some ways that a shared kitchen operator can support HACCP programs through effective facility maintenance.

Conduct professional repairs Repairs should be conducted by professionals and DIY-fixes (e.g. duct-taped pipes) should be avoided. Because these types of temporary repairs may introduce a food safety hazard, users operating under a HACCP plan will be unable to use that piece of equipment until it is completely repaired and the hazard is eliminated.

Align facility conditions with cGMPs In order to create a safe environment for food processing, operators should meet the Current Good Manufacturing Practices outlined in the Code of Federal Regulations. Regardless of whether the users in the space are FDA-regulated, this section provides a widely accepted set of standards for safe food processing. Below are several linked guides and the original text of the regulation:

FDA Reader Guides:
    Plants & Grounds
    Sanitary Operations
    Equipment & Utensils
    Regulation Summary

Source Texts:
    Code of Federal Regulations §117 CGMPs

Conclusion

After assessing the guidelines in this document, some shared kitchen operators may find themselves ready to support HACCP program implementation. Their next step is to meet with those eager users and begin to understand their processes. Likewise, some operators will find that they are not yet ready to support HACCP implementation and they may consider implementing some of the changes proposed above. Finally, some operators may decide not to accommodate HACCP programs in their space at all. Whether due to limited resources or a lack of perceived need, there are many good reasons to arrive at this conclusion and it would be foolish to ignore the liabilities and complexities that accompany HACCP implementation in a shared kitchen.

Appendix 1: Common Process Steps and Associated Hazards

The table below aims to identify the specific hazards that a food processor might encounter while developing a HACCP plan in a shared kitchen space. A shared kitchen user can integrate these considerations into their own hazard analysis and the structure of their operations. A shared kitchen operator may also reference this section so that they can make their space more conducive to effective HACCP implementation.

This table is meant to cover a broad range of food processors and is by no means comprehensive in assessing the hazards that may be found in a shared kitchen.

Process Step	Condition	User Mitigation Strategy
Receiving	Items are received in the facility by a 3rd party who does not complete the required temperature and process checks for incoming product	◈ Communicate to your suppliers that all product must be received by a specific individual within your staff. Have the supplier contact you upon arrival so that you can conduct your checks ◈ Cluster incoming deliveries to a narrow time window so that you can receive them easily and according to your requirements.
Cold Storage	Temperature is inconsistently monitored by the operator	◈ Keep your own temperature monitoring records for all refrigeration units that you use.
General Storage	Raw ingredients/in-process products are stored beneath other users' product, creating cross-contamination and allergen cross-contact hazards	◈ Keep your storage in a way that protects it from cross contamination (e.g. on the top shelf or protected with a physical barrier) ◈ Store your product in a storage space devoted exclusively to your business. ◈ Structure production so that no onsite storage is required
General Storage	Raw ingredients/in-process products are unsecured and kept where they could be manipulated or contaminated by other people with access to that space.	◈ Store your products in a secure container (e.g. a lockable cage) that restricts access while maintaining airflow.

		◈ Store your products in a manner that evidences any tampering.
Passive Processes	Passive processes (e.g. fermentation, proofing, dehydrating, tempering) which are long in duration may be left unsupervised	◈ Actively supervise this process step or develop a system of monitoring so that you will know if it has been interrupted or completed unsatisfactorily. ◈ Secure your product and equipment so that there is no risk that this process may be disrupted or contaminated.
Wash Raw Ingredients	Raw ingredients are washed in shared food prep sinks that may harbor environmental pathogens	◈ Pre-clean and sanitize and food-prep sinks used for washing raw ingredients. Keep a record of those pre-operations checks. ◈ Avoid washing product directly in the sink. Instead soak and wash items in a washable basin placed in the sink.
Food Prep	Close proximity between food processors and lack of physical barriers creates cross-contamination and allergen cross-contact hazards	◈ Assess nearby contamination threats prior to working with exposed products. ◈ Install a temporary barrier to protect exposed product from contamination.
Food Prep	Unacceptably high temperature of the processing area (particularly during warmer months) can create unsafe conditions for extended periods of food handling.	◈ Set strict time limits for how long products can remain outside of refrigeration. Enforce and record these at all times.
Food Prep	Unsatisfactory equipment upkeep creates risk of foreign object contamination (e.g. loose screw falls into mixing bowl of product)	◈ Conduct a pre-check of equipment used in your process to confirm it is in acceptable condition and that no foreign-object hazards exist.
Cooking	Cooking equipment and temperature monitoring devices (e.g. thermometers) may not be routinely calibrated	◈ Conduct your own thermometer calibration and maintain records of this activity. ◈ Use your own manual thermometer to verify the accuracy of ovens, warmers, and other equipment.
Cooking	Use of shared cooking equipment (e.g. oven, warmer, fryer) may create cross-contamination and	◈ Inspect and clean all shared equipment prior to use to eliminate possible allergen cross-contact.

	allergen cross-contact hazards	
Passive Cooling	Recently cooked product which is exposed and cooling to room temperature (e.g. on a speed rack) may be exposed to environmental contamination / allergen contamination from surrounding food processing activities.	◈ Physically separate exposed product from areas where food processing is occuring.
Active Cooling	Cooling equipment (e.g. blast chillers) supports multiple users simultaneously, creating a possible cross-contamination/allergen cross- contact hazard.	◈ Supervise the cooling process to ensure that no other product poses a contamination risk to your cooling product.
Food Prep	Generally Inadequate level of cleanliness in food processing areas	◈ Pre-clean your station and document these sanitation activities.
Food Prep	Use of common utensils and equipment (e.g. spoons, tongs, mixer, dough sheeter) may create cross-contamination and allergen cross-contact hazards	◈ Inspect and clean all shared equipment prior to use to eliminate possible allergen cross-contact. ◈ Inspect, wash, rinse, and sanitize all shared equipment to reduce pathogen contamination. ◈ Use your own utensils/equipment where there is a strong risk of allergen cross contact (e.g. you create a gluten-free product and use a common dough-sheeter used with gluten-containing products).
Sanitation	Chemical sanitizer for dishwashing and surface cleaning is provided but the chemical concentration / effectiveness is not verified.	◈ Conduct your own verification activities of chemical sanitizers using the appropriate method (e.g. test strip). ◈ Provide, mix, and document the effectiveness of your own sanitizer.