ABC Restaurant

**123 Nicollet Street**

**Minneapolis, MN 55414**

# HACCP Plan

# for pickling vegetables

## General SOPs

Cleaning and sanitizing

Employee practices

Acidification procedures

Training program

## HACCP based SOPs

Cold storage procedures

**(Month, day, year)**

For reasonable accommodations or alternative formats please contact Environmental Health at [health@minneapolismn.gov](mailto:health@minneapolismn.gov) or 612-673-2301. People who are deaf or hard of hearing can use a relay service to call 311 at 612-673-3000. TTY users call 612-263-6850.    
Para ayuda, llame al 311. Rau kev pab 311. Hadii aad Caawimaad u baahantahay wac 311.

# Acidification (pickling) of vegetables

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| **Products:** | Raw vegetables |
| **Ingredients:** | Raw vegetables with vinegar, water, sugar, salt and spices |
| **Intended use:** | Served in restaurant to diners |
| **Time/shelf life:** | Hold product under refrigeration (41°F); Shelf-life: N/A |

## Process description

ABC Restaurant’s vegetable pickling processes are limited to certain vegetables which are packaged for in-house restaurant use only for the purposes of preserving vegetables for extended use. We purchase all vegetables and other ingredients from approved and licensed suppliers. We inspect them during receiving for temperature (41\*F or below) and quality. The handling, preparation, storage and monitoring of acidified products are conducted by employees who:

* have thorough understanding of this HACCP plan
* are trained in the acidification processes.

The pickling operations are conducted only in the designated areas of the kitchen.

Equipment list **(Include make, model and specification sheet)**

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| **Equipment** | **Make and model** |
| * pH Meter (include specification sheet) |  |
| * Thermometer |  |
| * Refrigerator |  |

### HACCP team members

|  |  |
| --- | --- |
| **Name** | **Title or role** |
| 1. |  |
| 2. |  |
| 3. |  |

# Recipes

# Flow diagram

Service (8)

Preparation #2

cold storage (7)

Acidification / pickling (6) **CCP**

Preparation #1, washing, seasoning & labeling (5)

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Dry storage (4)

Cold storage (3)

Receiving vegetables

(1)

Receiving of additional materials (2)

## Hazard analysis

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| **Process steps** | | | | | |
| **Process step** | **Potential hazards**  (B) Biological  (C) Chemical (P) Physical | **Is this hazard significant?** | **Justification of decision** | **Preventative measures** | **Is this step a CCP?** |
| Receiving raw vegetables  (1) | (B) Pathogens, Salmonella, and E. coli 0157:H7, L.monocytogenes, yeast and mold (C) (mycotoxin) (P): none identified | No | Raw vegetables may contain pathogens, yeast and mold growth spores but normally should not be at levels hazardous to public health | Vegetables will be purchased from approved suppliers and received at proper temps. List approved suppliers here: | No |
| Receiving vinegar, salt, sugar, spices (2) | (B) None identified  (C) Deleterious chemicals  (P) Foreign material | No | Dry goods may have foreign materials not safe for the acidification process | Visual inspection of ingredients to make sure no foreign material is present. | No |
| Cold storage of raw vegetables (3) | (B) Pathogens, Salmonella, and E. coli 0157:H7, L.monocytogenes, yeast and mold (mycotoxin) | Yes | Potential growth of pathogens | All vegetables will be immediately stored in coolers. | No |
| Dry storage of vinegar, salt, sugar, spices (4) | (P) Foreign Material. | No | Visible foreign material that could compromise product safety; rodent droppings, insects, etc. | Visual inspection of ingredients to make sure no foreign material is present. | No |
| Preparation #1, Washing, Seasoning & Labeling (5) | (B) Pathogens, Salmonella, and E. coli 0157:H7, L.monocytogenes, yeast and mold (mycotoxin) | No | Potential growth of pathogens due to cross-contaminations is likely  Improperly labeled products will result in outdated or unsafe products | Time product will be in the temp. danger zone during assembly will be minimized and monitored.  Each container with be properly labeled with product name and production date. | No |
| Preparation #2  Pickling & pH monitoring  CCP (6) | B) Pathogens, Salmonella, and E. coli 0157:H7, L.monocytogenes, yeast and mold (mycotoxin) | Yes | Potential growth of pathogens if proper pH is not achieved and maintained | Pickled vegetables will be monitored and pH will be maintained at < 4.2. | Yes |
| Cold storage (7) | B) Pathogens, Salmonella, and E. coli 0157:H7, L.monocytogenes, yeast and mold (mycotoxin) | Yes | Potential growth of pathogens proper temperatures are not maintained. | Pickled products will be monitored for temperature control. | No |
| Service (8) | B: Cross contamination with pathogens: E. coli, Salmonella, Shigella, Norovirus, Hepatitis A from handling. | No | Following SSOP, employee health and hygiene policies prevent cross contamination at time of service. | Employee health and hygiene  SSOPs  Use of gloves to limit bare hand contact with RTE foods | No |

## HACCP form

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| **CCPs** | | | | | | | | | |
| **(1)**  **Critical Control Point** | **(2)**  **Hazard description** | **(3)**  **Critical limits** | **Monitoring** | | | | **(8)**  **Corrective action** | **(9)**  **Verification activities** | **(10)**  **Record-keeping procedures** |
| **(4)**  **What** | **(5)**  **How** | **(6)**  **Frequency** | **(7)**  **Who** |
| Acidification / pickling | Pathogens | **pH Levels:**  < 4.2 after incubating for a maximum of 3 days (72 hours) | pH levels will be checked | Use of pH meters by recording the pH levels.  Calibrating pH meter with 4.0 and 7.0 buffer solutions before testing | Each batch | Designated food worker | If the product does not meet the critical limit within 24hrs, continue to allow the batch to acidify, then retest in 12 hour increments.  Discard the entire batch if the finished product pH critical limit is not met within 3 days. Identify and retrain employee(s) on how to ensure that critical limits are met. | pH log will be reviewed daily by the executive chef or the manager on duty. | pH Log  pH meter calibration log |

## Vegetable pickling procedures

Only foodservice employees shall conduct ROP operations who:

* Are trained in the use of the reduced oxygen packaging equipment
* Have a thorough understanding of the HACCP plan

1. **Receiving raw vegetables**

Inspect raw vegetable products upon receiving:

* For temperature and quality
* Verify product temps are at or below 41ºF

1. **Receiving Dry Goods:** Inspect the condition of dry goods and packaging materials upon receipt. Verify products are in good condition.
2. **Cold Storage:** Immediately store all perishable products in the designated coolers. Coolers must have a temperature at or below 41°F.
3. **Dry Storage:** Store non-perishable products in a clean location that is separated from any potential sources of contamination.
4. **Preparation #1: Washing, seasoning, and labeling**: Team members will use gloves to handle all ready-to-eat products (RTE):

* During the preparation phase, and
* As often as necessary to make sure no bare hand contact with RTE foods takes place throughout the entire process from production to serving

**Assemble products, ingredients, labels, etc. necessary to the operation.**

* + Assemble products that are to be washed
  + Make sure products remain at room temperature no longer than 1 hour during the washing process.
  + Place washed product in the container. Season product with salt.
  + If brining, submerge product in water for 2 hours. Press product down until it is submerged. Drain. Label product.

1. **Preparation #2 Pickling and pH Monitoring (CCP)** Add remaining seasoning and ingredients. Press until product is submerged in vinegar. Cover tightly and allow to pickle for set time. Check every 24 hours to ensure product is completely submerged and no mold or scum is growing. When flavor is right and pH is < 4.2, refrigerate product.

* **Critical limit:** Products must be below a pH of 4.2 after 72 hours
* **Monitoring:** At least once a day, the designated employee must check the pH of products and record the pH in the pH log.
* **Corrective Action:** If product is above pH 4.2 after 72 hours, discard the product and notify the Manager on Duty. Record corrective actions on the pH Log.
* **Verification**

Manager on Duty must:

* + Visually monitor employees during their shift to verify designated employees are checking and recording pH of the products
  + Review and sign the pH log and pH calibration log daily

**Proper pH testing steps for acidified vegetable products:**

* Mash up or blend vegetable, adding small amounts of deionized water as needed until a thin paste is made. Take the pH in the container it was mashed/blended in.
* Submerge bottom of probe into the product.
* Make sure that the probe is:
  + not touching the bottom of the container
  + is completely covered by-product.
* Slowly stir pH probe in vegetable paste until pH is stabilized.
* After taking the reading, rinse with deionized water into a waste container. Be sure that no clumps are caught underneath the plastic guard.
* Blot with lint-free, soft tissue.

**7. Cold Storage:** Refrigerate product at 41 degrees or below after 72 hours and desired flavor and pH level is reached.

* The final product is not considered shelf stable due to lack of process authority review of the submitted recipe.
* Product must be maintained under refrigeration (≤41°F) to ensure two hurdles are effectively in place.

**8. Serving:** Portion and serve as ordered by patrons. Limit bare hand contact with ready to eat foods by using gloves or other acceptable means.

## Sanitation standard operating procedures (SSOPs)

### Employee hygiene and practices

1. Hands are to be thoroughly washed in a designated hand sink with soap and water paying particular attention to:

* Underneath the fingernails and between the fingers
* Dry with single use towels

1. Handwashing is to be done at the following times:

* After using the toilet, in the toilet room
* After coughing, sneezing, using a tissue, using tobacco, eating, or drinking
* After handling soiled equipment or utensils
* Immediately before engaging in food preparation activities
* During food preparation as necessary to remove soil and prevent cross contamination
* When switching between raw and ready-to-eat foods
* Other times as needed to maintain good sanitation

1. Fingernails must be kept:

* Trimmed
* Filed
* Free of nail polish
* Maintained so the edges are cleanable and not rough

1. Make sure employees are preventing cross contamination of ready to eat foods with bare hands by using deli tissue, spatulas, tongs, single-use gloves, or proper dispensing equipment
2. Eating and drinking is prohibited in areas where contamination could occur of:

* Exposed food
* Clean equipment
* Utensils
* Unwrapped single service
* Single use articles

A food employee may drink from a closed beverage container in a food prep area as long as it is handled to prevent contamination.

1. Effective hair restraints must be worn in processing areas.
2. Smoking and other uses of tobacco are prohibited.
3. Clean outer clothing must be worn each day and changed as often as necessary throughout the day.
   1. For example, when moving from a raw food operation to a ready-to-eat food operation.
4. Aprons used by employees are to be hung in a designated area when not in use. They are not to be worn in the:
   1. Toilet area,
   2. Eating areas
   3. Locker rooms
5. Foot wear is to be kept clean.
6. No jewelry may be worn during handling of food, except for a wedding band or other plain ring.
7. Food Employees with a symptom caused by illness, infection or other source must report it to the Person in Charge. Report symptoms that are:

* Associated with diarrhea, vomiting or other acute gastrointestinal illness
* Jaundice
* A boil, infected wound or other lesion on the hands or wrists containing pus that is open or draining unless:
  + A finger cot or other impermeable cover protects the lesion, and
  + A single use glove is worn
  + If the wound or lesion is on an exposed portions of the arms, the lesion must be protected by an impermeable cover.

**The Person in Charge shall impose the proper restrictions and exclusions according to rule.**

## Cleaning and sanitizing

### Equipment Food Contact Surfaces

Properly cleaned and sanitized food contact surfaces are critical to making sure you have a safe, sanitary operation. Using approved cleaners and sanitizers will reduce levels of pathogenic organisms to prevent cross contamination of the product.

* Detergent cleaners suspend and help remove various food soils
* Chemical sanitizers (chlorine, quaternary ammonia, etc.) reduce the numbers of pathogens and other microorganism to insignificant levels

**The cleanup process must be completed in accordance with following procedures:**

* **Pre-cleaning**

Equipment and utensils shall be pre-flushed, presoaked, or scraped as necessary to eliminate excessive food debris.

* **Washing**

Equipment and utensils shall be effectively washed to remove or completely loosen soils using manual or mechanical means. Only approved chemicals are to be used in this process.

* **Rinsing**

Washed utensils and equipment shall be rinsed to remove abrasives and to remove or dilute cleaning chemicals with water.

* **Sanitizing**

After being washed and rinsed, equipment and utensils must be sanitized with an approved chemical by either:

* Immersion
* Manual swabbing
* Brushing
* Pressure spraying methods

Exposure time is important to ensure effectiveness of the chemical.

Ensure that an appropriate chemical test kit is available and routinely used to make sure accurate concentrations of the sanitizing solutions are being used.

**Cleaning frequency of food contact surfaces and utensils:**

* Before each use with a different type of raw animal food, including beef, fish, lamb, pork, or poultry
* Each time there is a change from working with raw foods to working with ready to eat foods
* Between uses with raw fruits or vegetables and with potentially hazardous foods
* At any time during the operation when contamination may have occurred
* If used with potentially hazardous foods, throughout the day at least once every four hours
* Utensils and equipment that are used to prepare food:
  1. In a refrigerated room that maintains the utensils, equipment, and food under preparation at 41°F or less,
  2. Are cleaned at least once every 24 hours

**Cleaning frequency of other thermometers and other equipment:**

* Before using or storing a food thermometer
  1. Equipment used for storage of packaged or un-packaged food, including coolers is cleaned at a frequency necessary to eliminate soil residue. The equipment must be cleaned often enough to eliminate soil residue
* Ice bins must be cleaned often enough to prevent accumulation of soil or mold
* Food contact surfaces of cooking equipment must be cleaned at least once every 24 hours.

Non-food contact surfaces of equipment must be cleaned often enough to prevent accumulation of soil residues.

## HACCP Training for employees

### Understanding the potential hazards associated with acidifying (pickling) vegetables.

While the process of acidifying (pickling) vegetables extends the shelf life, it also can pose a serious public health threat. Generally, bacteria survive under conditions where:

* Oxygen is present (aerobic conditions), or
* Oxygen is not present (anaerobic conditions).

Some bacteria have the ability to adapt to either condition.

Under traditional storage, spoilage bacteria would normally thrive. This may cause the product to spoil before the more hazardous types of bacteria might become a problem.  During the process of acidification, acidic conditions are created. This changes the types of bacteria that can survive. Spoilage organisms are eliminated. However, several types of pathogenic bacteria survive and actually thrive under these conditions.

The pathogens of concern are:

* Salmonella
* E. coli 0157:H7
* L. monocytogenes
* Yeast
* Mold (mycotoxin)

**Concepts required for a safe operation**

To produce a safe, acidified product in a restaurant, there needs to be:

* A thorough understanding of this HACCP plan
* Proper calibration and use of pH measuring equipment
* The HACCP based standard operating procedures

Areas to focus on include:

* Products that can be pickled or acidified safely
* Time, temperature, and pH control
* Prevention of cross contamination
* Health and personal hygiene of food handlers

**Products that can be acidified (pickled)**

State of Minnesota regulations limit the types of foods that can be pickled. ABC Restaurant’s HACCP plan defines the foods that can be pickled.

**Only the specific products on this list can be pickled.**

Any addition to the above list must first have the approval of the manager on duty or executive chef.

Changes must be noted in the HACCP plan.

Foods to be acidified (pickled) must be limited to vegetables that do not support the growth of pathogenic bacteria due to of one of the following requirements:

1. Has a water activity of < 0.88
2. Has a pH of < 4.2

By limiting the types of food that can be acidified (pickled) to those that meet the requirements above, an additional barrier to the growth of pathogenic bacteria is provided. This helps to ensure a safe product.

**Temperature Control**

Temperature control is an important factor in keeping all potentially hazardous foods safe. To reduce the potential for growth of pathogens, products must be stored at a temperatures of 41o F or less unless approval is granted by the health department.

**Preventing cross contamination**

To avoid cross contamination, raw foods should be handled separately from cooked and ready to eat foods.

Clean and sanitize utensils, equipment and work surfaces used for raw foods before using for cooked or ready-to-eat foods.

Make sure ready-to-eat foods are stored so that blood or juices from raw products cannot drip or come into contact with them.

Food handlers can be a source of cross contamination through:

* Improper handwashing
* Soiled clothing or aprons

**Employee health and hygiene**

The health and personal hygiene of food handlers play a critical role in producing safe acidified food. It is vital that employees working in this business follow the Employee Hygiene and Practices guidelines in the Sanitation Standard Operating Procedures (SSOPs).

All food handlers must limit bare hand contact with ready to eat foods as required under the retail food code.

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| **pH meter calibration log**  **Instructions**: The designated foodservice employee(s) must record the calibration of each pH meter and any corrective action taken daily. Calibration should be done using buffer solutions of 4.0 and 7.0. The designated chef or manager must verify that foodservice workers are calibrating pH meters correctly. This is done through visual observations of employee activities during all hours of operation.  The manager must review and initial the pH calibration log weekly.  This log should be kept for a minimum of 6 months. | | | | | | | |
| **Date and time** | **pH meter**  **ID#** | **pH meter**  **reading 4.0** | **pH meter reading 7.0** | **Accurate**  **(yes /no)** | **Corrective action** | **Initials** | **Verified by** |
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| **pH Log**  **Instructions**: The designated foodservice employee(s) must record the pH level and corrective action taken each time an acidified product is tested.  The designated chef or manager must verify that foodservice workers are testing pH correctly. This is done through visual observations of employee activities during all hours of operation.  The manager must review and initial the pH log weekly.   This log should be kept for a minimum of 6 months. | | | | | | |
| **Item** | **Batch** | **Date** | **pH reading**  **(Must be < 4.2)** | **Corrective action** | **Initials** | **Verified by** |
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| **Updates and edits to HACCP plan log**  **Instructions**: All edits or changes to an approved HACCP plan must be logged. Tracking changes helps during the inspection and the facility’s annual review. **Significant changes to a HACCP plan must be approved by the City of Minneapolis prior to changing**. Contact a member of our HACCP team to determine if additional approval requirements are necessary for proposed changes. | | |
| **Date** | **Initials** | **Summary of changes** |
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