GROWING SPROUTS

HACCP GUIDANCE

This guidance is for food service operators who want to grow their own sprouts and do not already have an approved Hazard Analysis Critical Control Point (HACCP) plan.

For Retail Operators
Rev 2.0-5/23

Carson City Health & Human Services
Environmental Health Division
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Tel: (775) 887-2190
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Growing Sprouts Guidance for Food Service

Background Information

Eating sprouts can help promote good health; unfortunately, they can also cause food poisoning when consumed raw or even lightly cooked. This is because bacteria can thrive in a warm, humid environment and sprouts are grown in these conditions. In fact, between 1996 and July 2016 in the United States, there were at least 46 reported outbreaks associated with sprouts, accounting for 2474 illnesses, 187 hospitalizations, and three deaths. Most of these outbreaks were caused by *Salmonella* and *E. coli*. The seed itself is typically the source of the harmful bacteria.

There are a number of approved techniques to reduce the amount of harmful bacteria that may be present on seeds and even pathogen tests for seeds during sprouting; however no amount of treatment and testing is guaranteed to eliminate all harmful bacteria. People with weakened immune systems, including children, older adults and pregnant women, should not eat any variety of raw or lightly-cooked sprouts.

How to Obtain a Waiver to Grow Sprouts

A food service establishment must have a plan approved by the health department before they can grow their own sprouts. The plan must identify basic food safety practices such as seed chlorination monitoring.

Your establishment must be in good standing and demonstrate control of food safety risk factors in order to qualify for a waiver approval.

1. A **Waiver Request Application Form** must be completed and submitted to your local health inspector for review and approval.
2. If you do not already have a written HACCP plan developed to submit with the waiver, a **Growing Sprouts HACCP Supplemental Information Form** may be completed and submitted to help you document the necessary information. The supplemental form completed in detail may be sufficient to function as your food safety "HACCP" plan; however large operations may require full HACCP plans.
3. Employees must be properly trained on your process. Training procedures should be included with your submission.
4. Treatment records and temperature logs must be maintained. Copies of the records you will use should be included in your submission.

Sprout Production

All stages of sprout production must be conducted indoors in a sanitary facility

Seed Receipt and Storage

- It is important to purchase seeds from a reputable supplier. Suppliers who are willing to provide a Certificate of Analysis (COA) should ideally be selected. COA's should contain negative test results for E.coli, Salmonella, and Listeria.
- Seeds must have been produced for the intended purpose of sprouting.
- Examine seeds for upon receipt for signs of contamination and store seeds off the ground in covered containers to prevent contamination.
- Containers should be labeled to maintain the identity of the seed lot and whether the seeds have received prior treatment by the supplier.

Initial Seed Rinse and Seed Treatment

- Rinse seeds in potable water before treatment to remove dirt, and to increase the efficiency of the treatment.
- Treatment options:
    1. You may treat the seeds using science based methods prior to sprouting at your operation, or
    2. You may rely on prior treatment of seeds conducted by a supplier. If you rely, **in whole *or in part*, on prior treatment** by the grower or supplier of seeds, you must obtain documentation such as a **Certificate or Statement of Conformance** from the manufacturer stating that the prior treatment was conducted using a scientifically valid method to reduce microorganisms of public health significance, and that the treated seeds were handled and packaged following the treatment in a manner that minimizes the potential for contamination.

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Seed Treatment – continued

- Seed types can vary in sensitivity to antimicrobial agents and other types of treatments, which can affect treatment efficiency and how well the seeds germinate and grow after treatment. If you utilize a seed treatment described in scientific literature, you should take into account the parameters used in the study and determine whether they are compatible with how you will be applying the treatment at your operation. For example, if the treatment you are considering has only been tested on alfalfa seeds, and you plan to use the treatment on mung beans, you should not assume that the treatment will be equally effective on mung beans.
- Methods used must be scientifically validated to achieve a 4 to 5 log reduction which may be difficult for smaller operations to achieve while maintaining seed viability. When reviewing the options available for seed treatment, especially if you plan to treat seeds at your operation **(as opposed to, or in addition to, purchasing pre-treated seeds)** you should consider the feasibility of correctly applying the treatment at your operation.
- If applying a validated chemical seed treatment such as **calcium hypochlorite at 20,000 ppm for 15 minutes**, the treatment should be prepared correctly to ensure the chemical is present at the desired concentration. After mixing, you should verify the treatment solution concentration according to the label directions, since the concentration can impact treatment effectiveness.
- When treatment is conducted at the supplier and adequate documentation is maintained. It is highly recommended to still use an antimicrobial treatment prior to sprouting, however much milder treatment methods may be utilized.

Pre-germination Seed Soak and Germination and Growth

- Containers and other tools or equipment used for soaking must be cleaned and sanitized prior to contact with seeds used to grow sprouts.
- For both seed soaking and any additional rinses you may conduct after soaking, you must use water that meets the microbial quality.
- Growing units should be cleaned and sanitized before starting each new production batch.
- Sprouts must be protected from all sources of contamination including dripping condensate.
- All irrigation water must be from an approved potable source.

Harvest Washing Draining, and Cooling

- You must handle harvested sprouts in a manner that protects against contamination.
- Tools and equipment used in harvesting sprouts should be cleaned and sanitized at least daily, and before starting to harvest each new production batch of sprouts.
- Wash sprouts with cool water to remove hulls and to help lower the temperature of the sprouts.
- All wash water must be from an approved potable source
- Sprout spinning and/or drying equipment must be inspected, maintained, cleaned, and sanitized as frequently as reasonably necessary to protect against contamination and prior to contact with sprouts.

Packaging, Labeling, Storage, and Service

- You must use food-packing material that is adequate for its intended use.
- Store packaged sprouts off the ground and protected from contamination.
- Store packaged seeds **< 41°F for 7 or fewer days** (Label packaged sprouts with the discard date)
- Label packaged sprouts with a consumer advisory or post a consumer advisory on a menu or menu or menu board if served directly.

    - *"Consuming raw or undercooked sprouts could increase your risk of foodborne illness, especially if you have certain medical conditions"*

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Special Processes - Additional Requirements

If supplier treatment documentation is adequate and/or you are following the calcium hypochlorite treatment described in this document, no additional scientific literature is typically required for growing sprouts. Reference: (https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ucm510578.htm)

If utilizing another validated method submit supporting scientific literature / studies.

Facilities submitting processes that do not follow existing validated methods may work with a process authority and/or conduct challenge studies to verify adequate pathogen reduction. Contact info for several process authorities is available at: (http://www.afdo.org/foodprocessing.)

The Carson City and Douglas County Public Health Regional Partnership reserves the right to require full HACCP and/or process authority review and approval for any process when they deem is necessary. Large operations may be subject to pathogen testing requirements in accordance with the FDA's Produce Safety Rule.

PUBLIC HEALTH
REGIONAL PARTNERSHIP
Carson City · Douglas County

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CARSON CITY
HEALTH & HUMAN SERVICES
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Growing Sprouts HACCP Supplemental Information Form

Any alterations, modifications or changes to an approved HACCP, must be resubmitted for review and approval of the Environmental Health Division.

General Information		
Name of Owner & Title:	Phone:	
Establishment Name:	Email:	
Mailing Address:	City:	Zip Code:

HACCP TEAM Members	
Name	Title / Role

1) List sprouting equipment to be used (such as containers, irrigation equipment, etc.) Or attach manufacturer's specification sheets. Record NA if not applicable.

Sprouting containers: trays, boxes, jars, sacks, etc.	
Irrigation systems	
Lighting systems	
Sprouting machines	
Refrigeration equipment	
Straining and spinning equipment	
Other	

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2) Identify the seeds you plan to sprout and methods used	
Product / Seed Type	Sprouting Method
i.e. Alfalfa sprouts	Sprouting trays
i.e. Mung beans	Cloth sprouting sacks

Definitions

Control Points in the sprouting process are the steps in the flow of production from receiving to service.

Critical Control Points are steps that, when done correctly, can reduce the possibility of a food borne illness outbreak. For sprouting treatment and temperature control are typically the CCPs

Critical Limits are the maximum or minimum value to which physical, biological or chemical parameters must be controlled at a CCP to minimize the risk of a foodborne illness outbreak. (i.e. minimum calcium hypochlorite concentration, storage ≤ 41°F)

Corrective Actions are what is done to correct a step that's gone out of control. For example if calcium hypochlorite is not high enough, the operator may add additional chemical. Sprouts that have been exposed to temperatures above ≤ 41°F for more than 2 hours shall be discarded.

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3) Process flow

- Examine the example process flow provided at the end of this document. You can make a copy of it for practice is desired.
- Use a highlighter or other pen to show the actual process flow you use for each product. Cross out any steps you don't use. Mark directional arrows as necessary to make the process clear.
- Add any other processing steps not already shown.
- Once you have determined your flow steps, you should be able to draw out your process flow.

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4) Process steps and critical control points
Where will your seeds be purchased from and have the seeds been grown and processed for the purpose of sprouting?
How will you ensure that seeds are properly treated to achieve a 4-5 log reduction in harmful bacteria?
Describe the water supply that will be used for sprout rinsing, soaking, irrigation etc. Potable water must be used for all sprout and sprout contact surface applications.
How will sprouts be stored? Sprouts must be and must be stored refrigerated ≤41°F. Storage conditions must protect sprouts from contamination.
How will sprouts will be packaged and labeled?

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List the critical limits (CCPs) for your product
How will the monitoring actions be conducted, by whom, and how often?
What corrective actions will be taken if critical limits are exceeded? How will the corrective actions be documented?
5) Records: Attach copies of all logs to be used for record keeping
Who verifies that records for monitoring steps are properly maintained and how often do they review the records?
Where will your records be kept and for how long?

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6) Describe or attach operational procedures for the following subjects
Describe the work area for growing and processing sprouts and describe the methods that will be used to prevent cross contamination (A picture may be attached for reference if desired)
Describe how growing sprouts will be limited to responsible trained personnel who understand the risk involved
Describe your procedures regarding operator hygiene and prohibiting bare hand contact with ready- to-eat foods

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6) Describe or attach operational procedures for the following subjects - continued
Describe your cleaning and sanitizing procedures for food contact surfaces
Describe or attach your training program that ensures that staff involved in growing sprouts understand the concepts required for a safe operation
Describe or attach any additional information relevant to your process as needed

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All sprout growing waiver applications must be submitted to your health inspector for review and approval prior to manufacturing sprouts in your establishment. Applications will be denied if the inspector believes the proposed HACCP plan does not take the proper precautions to keep the public from harm.
By signing and submitting this form to the permit issuing official you are requesting a waiver and establishing a plan to comply with the above requirements as conditions to growing sprouts. Failure to implement the process as described is subject to enforcement. Any additions or modifications to this plan must be reviewed and approved by the permit issuing official prior to being implemented.
I certify that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief.

Signature:	**Date:**

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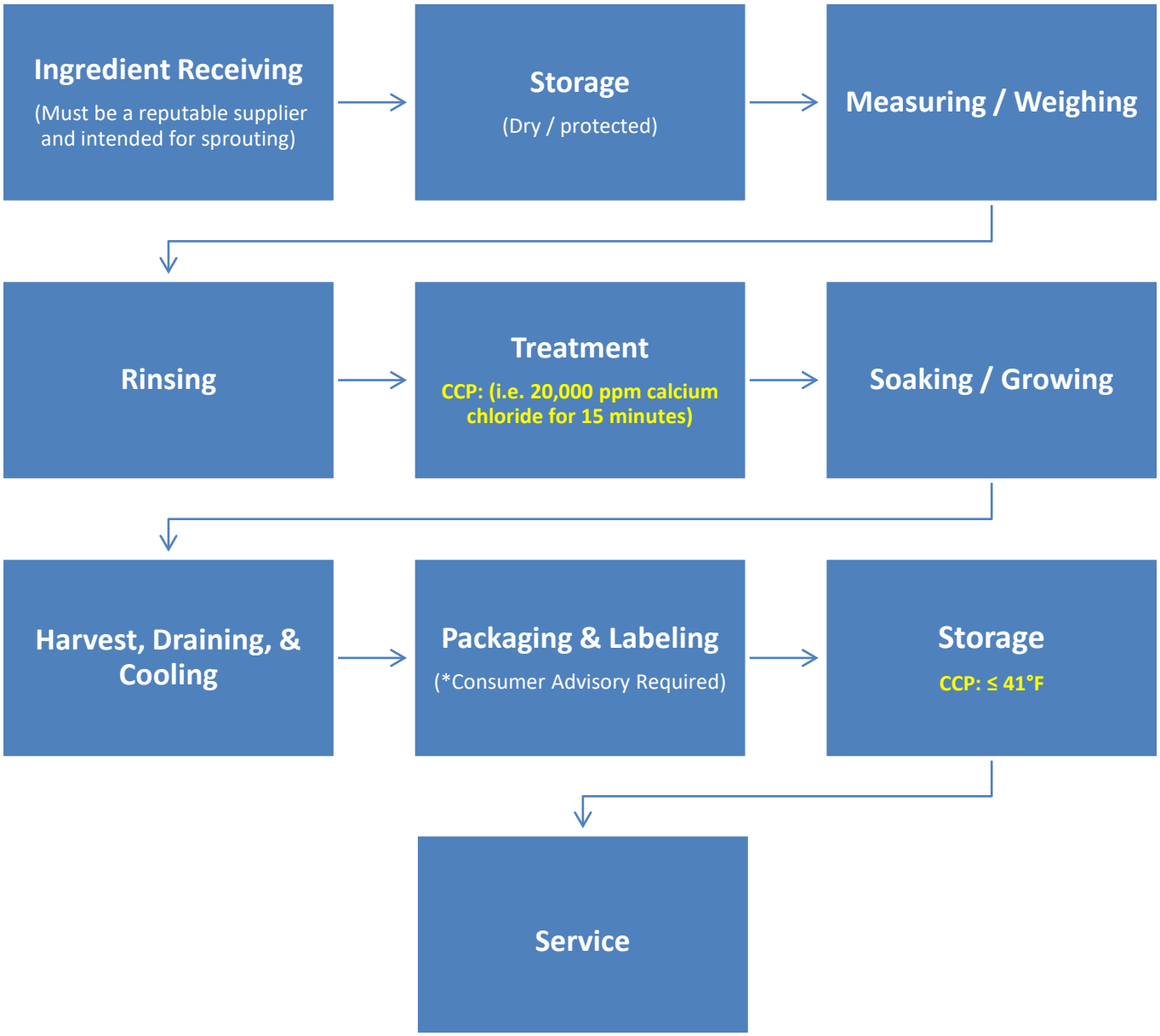
Growing Sprouts HACCP Flow Example



Due to the prevalence of foodborne illness (particularly Salmonella and E.coli 0157:H7) associated with the consumption of raw or undercooked sprouts a consumer advisory must be either on the package or on the menu as applicable.

Warning: ***"Consuming raw or undercooked sprouts could increase your risk of foodborne illness, especially if you have certain medical conditions"***

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Sprout Seed Treatment Log

Seed Type:

Batch / Lot ID	Date / Time	Supplier Treatment		Weight / Measurement			Post-Processing				
		Treated? Yes / No	Documentation on file? Yes / No	Seed	Calcium Hypochlorite	Initials	*Calcium Hypochllorite Spec	Calcium Hypochllorite Concentration	Treatment Time (# of minutes)	**Corrective Action Needed? Y/N	Initials

* If seeds are not previously treated by a reputable method by the grower or supplier and/or adequate documentation is not maintained on file. The Calcium hypochlorite concentration must be ≥ 20,000 ppm for a minimum of 15 minutes. (Milder Calcium hypochlorite solutions may be utilized prior to sprouting if treatment was previously performed and documentation is on file.)

**** If corrective actions are necessary, record the details of the actions taken on the back of this sheet**

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Employee Training Log

Employee: _____

Description of Training	Date	Trainer Initials

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Equipment Unit:_____

Food Temperature Log

- Internal temperature of **Cold Foods → 41°F or below**
- Internal temperature of **Hot Foods → 135°F or above** (if reheated for hot-holding, must be reheated to 165°F first)

Date	Time	Food	Temperature	In Spec Y or N	Corrective Action	Initials

Return this sheet to the owner / manager when completed

Verified by: _____ Date:_____

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REQUEST FOR FOOD ESTABLISHMENT WAIVER

As defined by NAC 446.039, a health hazard or nuisance may not result from the granting of the waiver in the opinion of health authority.

General Information			
Name of Person Requesting Waiver:	Title:	Establishment:	
Phone:	Cell:	Email:	
Street Address:		City:	Zip Code:
Mailing Address:		City, State:	Zip Code:

Type of waiver requested (Check one)		**HACCP** Food Safety Plan Required?
◯	Smoking food as a method of food preservation rather than as a method of flavor enhancement (NAC 446.183(1)).	YES
◯	Curing food (NAC 446.183(2)).	YES
◯	Using food additives or adding components, including, without limitation, vinegar: (a) As a method of food preservation rather than as a method of flavor enhancement; or (b) To render a food so that it is not potentially hazardous (time/temperature control for food safety) (NAC 446.183(3)).	YES
◯	Packaging food using a reduced oxygen packaging method, except as specified in this chapter, where a barrier to *Clostridium botulinum* in addition to refrigeration exists (NAC 446.183(4)).	YES
◯	Operating a molluscan shellfish life-support system display tank used to store and display shellfish that are offered for human consumption (NAC 446.183(5)).	YES
◯	Custom processing animals that are for personal use as food and not for sale or service in the food establishment (NAC 446.183(6)).	YES
◯	Preparing food by another method that is determined by the health authority to require a waiver (NAC 446.183(7)), including but not limited to raw animal foods pursuant to NAC 446.164(4)(b).	YES
◯	Sprouting seeds or beans (NAC 446.183(8)).	YES
◯	Other – Rule modification or waiver request for items not involving specialized processes. *(Attach additional information)*	To Be Determined

Justification:

Attach written justification for why you believe the issuing of a waiver will not expose consumers to adverse environmental health conditions; will not create any health hazards; will not create a nuisance; and will protect the health and safety of the public and food service workers.

Check the applicable types of supporting documents you have attached.

☐	Operational plans	☐	Scientific study	☐	Monitoring logs	☐	Validation study
☐	Labeling/disclaimers	☐	HACCP plan	☐	Written procedures	☐	Other

I certify that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief.

Signature:	**Date:**

SECTION BELOW FOR OFFICIAL DEPARTMENT OF HEALTH USE ONLY

Action taken by the Public Health Authority:	
◯ Granted	Denied ◯
Attach reasons for denial or the approval with waiver conditions and effective dates are attached.	
REHS reviewer:	Date:
Manager, EHS:	Date: