

**Monitoring** - Check internal temperature at 1 hour and 45 minutes, at 2 hours, and again at 6 hours. Record internal temperature on batch record.

**Corrective Action** - If the temperature taken at 1 hour 45 minutes is at 75° or greater, notify the Person in Charge and take immediate action to reduce the temperature. This can be accomplished by showering with cold water or if a greater temperature reduction is necessary, product could go into a water bath. If product does not meet the critical limits at 2 and 6 hours, it must be discarded.

1. **Packaging/Labeling** - if product is packaged by a Reduced Oxygen packaging method, refer to Standard Operating Procedures for ROP. If product is packaged by over-wrapping, ensure that packaging materials (trays, wrap) are in a sanitary condition and do not subject the food to cross contamination. Food employees must limit direct hand contact with exposed ready to eat food. Products be labeled with mandatory labeling requirements.
2. **Storage/Display** - Place packaged food into refrigerated storage, either retail display cases or cooler storage at 41°F or less.

# Smokehouse Operations

J's Market  
505 Saratoga St. W  
Anytown MN 55555

## Batch Record

Required to be completed for each product made as official record of monitoring critical control points.

PRODUCT \_\_\_\_\_ PRODUCTION DATE \_\_\_\_\_ CODE/LOT ID \_\_\_\_\_

### FORMULATION:

Beef: \_\_\_\_\_ LBS      Water: \_\_\_\_\_ LBS

Pork: \_\_\_\_\_ LBS      Other: \_\_\_\_\_

Turkey: \_\_\_\_\_ LBS      \_\_\_\_\_

Veal: \_\_\_\_\_ LBS      \_\_\_\_\_

Seasonings: *Contents and Weight* \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

### CURING AGENT: *Critical Control Point*

Type \_\_\_\_\_ Weight \_\_\_\_\_ Signature \_\_\_\_\_

How incorporated (mix, injected, soak, etc.) \_\_\_\_\_

Cure Lot Number \_\_\_\_\_

Other Processing \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

### SMOKE/COOK: *Critical Control Point*

Temperature Checks: \_\_\_\_\_

FINAL INTERNAL TEMPERATURE\* \_\_\_\_\_ °F *\*Minimum cook temperature of 155°F*

Signature \_\_\_\_\_ *(165°F for poultry)*

### COOLING: *Critical Control Point*

Temperature Checks \_\_\_\_\_

Temp at 2 Hours\* \_\_\_\_\_ *\*Must be 70°F or less*

Signature \_\_\_\_\_

Temp at 6 Hours\* \_\_\_\_\_ *\*Must be 41°F or less*

Signature \_\_\_\_\_

All CCP's Met?     Yes     No

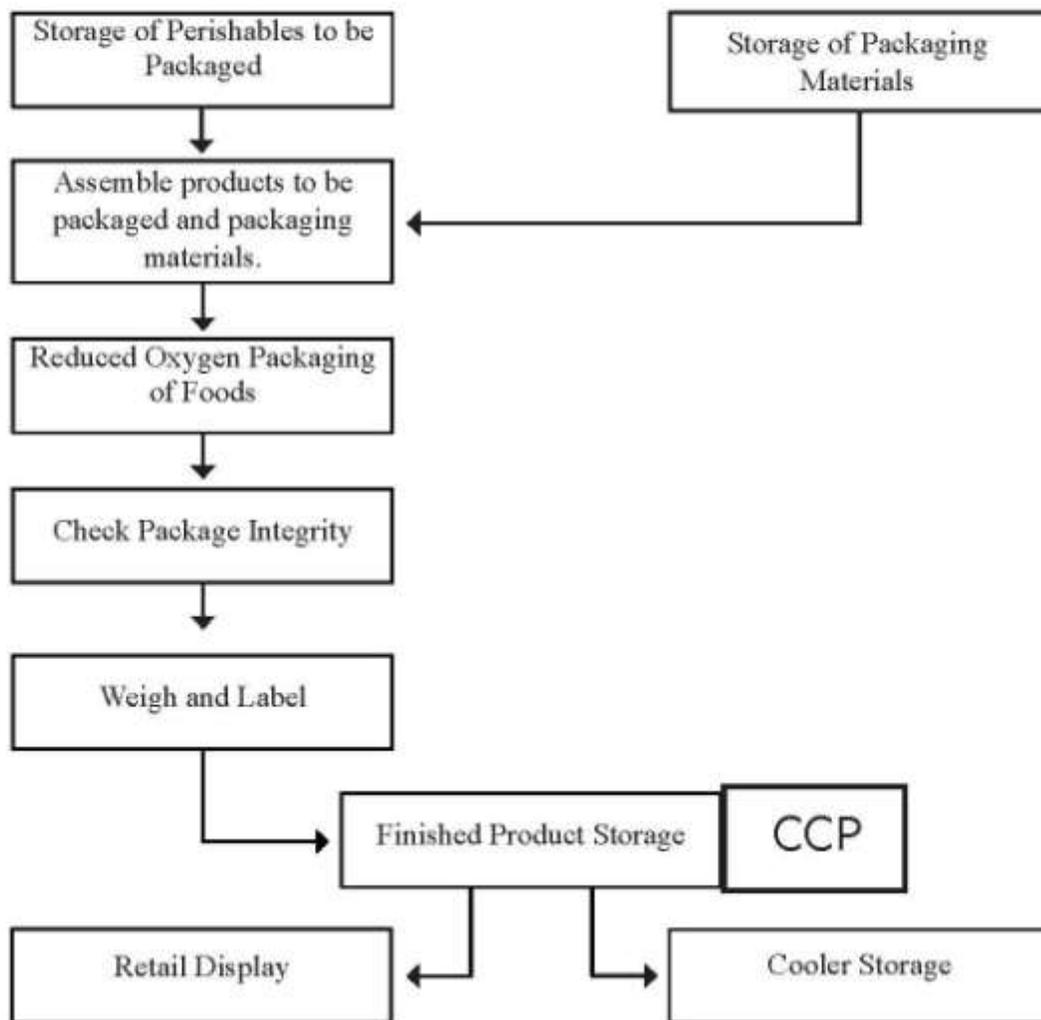
Signature \_\_\_\_\_

# Reduced Oxygen Packaging

## Equipment List

- Slicer - brand \_\_\_\_\_
- Vacuum Packaging Machine - \_\_\_\_\_
- Digital Thermometer
- Assorted knives, tongs, trays, lugs/totes, hand utensils

## Flow Diagram



## Reduced Oxygen Packaging Standard Operating Procedures

*Only food handlers that are trained in the use of the reduced oxygen packaging equipment and process of reduced oxygen packaging and have a thorough understanding of the HACCP plan shall operate or conduct ROP operations.*

1. Ensure that facilities in the area where ROP operations are to be conducted are clean and sanitary and are in good physical condition. ROP operations must only be conducted in the designated area in the meat department. No packaging of ready to eat foods can be conducted while raw foods are present or are being processed in the same room. Only properly cleaned and sanitized equipment is to be used in the operation.
2. Ensure that all equipment is operating properly and safely. Ensure that equipment involved in the ROP process has been properly cleaned and sanitized according to regulation and store policy. This equipment includes (but not limited to): tables, cutting boards, slicer, knives, tongs, trays,
3. Ensure that food handlers are in compliance with Employee Practices requirements in the Good Manufacturing Practices. This includes employee hygiene, handwashing, clean clothing, etc.
4. Assemble packaging materials, labels, etc. necessary to the operation.
5. Assemble products that are to be packaged.
  - Products to be ROP shall remain at room temperature no longer than 30 minutes during the packaging process, therefore, only remove sufficient quantities so that this is managed.
  - Products that can be ROP are limited to list provided.
6. Place foods in the packaging materials. Food Employees must limit direct hand contact with exposed, ready-to-eat food when deli tissues, spatulas, tongs, dispensing equipment, or other utensils can be used.
7. Place bags in vacuum machine ensuring that adequate space is provided around each package. Ensure that machine settings are appropriate for product being packaged. It is important that a full vacuum is provided or if using gas displacement, that the equipment is working properly. Start the machine and wait for the lid to open indicating that the process is complete
8. Remove packages from the machine. Visually check the seal to ensure that it is tight and that there are no food materials in the seal. Make a note of any indicators of a faulty seal such as wrinkles or an incomplete seal. Packages with a faulty seal should be re-packaged. Trim excess packaging as required.
9. Weigh and label each package. Ensure that all required information is provided on the label. Ensure that the shelf life is no longer than 14 days.
10. **\*Critical Control Point \*** Place packaged food into refrigerated storage, either retail display cases or cooler storage.

**Critical Limit** -Temperature in storage must be 41°F or less. Products will be considered to be temperature abused if they are exposed to temperatures above 41°F for more than 4 hours.

**Monitoring** - The designated employees of the meat department will check and record the actual temperature in both the walk-in cooler and retail case that contains in-store packaged products at intervals not to exceed 4 hours. If temperatures are out of range, notify the Person in Charge and move products to other approved

storage location that does meet temperature requirements. Record temperature on cold storage log.

**Corrective Action** -Discard temperature abused products. Make necessary adjustments or repairs to cooler or case prior to restocking. Document any corrective actions on the log.

11. Visually check ROP products on a daily basis in the retail case or as products in reserve storage are brought out to the retail case and check the package integrity (faulty seals, 'puffy' packages, holes, tears, or packages that may have otherwise lost their 'vacuum') and contents of the package (slime, mold, discoloration). Packages that do not meet the requirements should be destroyed. Also check for products that have passed their 'use by' date.

# Cold Storage Log

Store Name \_\_\_\_\_

Store Address \_\_\_\_\_

Month/Year \_\_\_\_\_ Cooler/Location \_\_\_\_\_

DATE	TIME	TEMP.	S	TIME	TIME	S	DATE	TIME	TEMP.	S	TEMP.	TEMP.	S
1							17						
2							18						
3							19						
4							20						
5							21						
6							22						
7							23						
8							24						
9							25						
10							26						
11							27						
12							28						
13							29						
14							30						
15							31						
16													

**S= signature of person taking/recording temperature**

If air temp is more than 45°, check product temperature;

If product temp is more than 41° but less than \_\_\_°, move product to another cooler, cool to 41° within 4 hours and make necessary repairs to case;

If product temperature is higher than \_\_\_°, discard product and make necessary repairs to the case

Any record noted above 41°F, must have explanation/corrective action noted below:

*For example:*

*5/4 – temp at 45° – case on defrost – product temp - 39° - OK or*

*5/5 – temp at 50° – product temp 50° – 100 pounds of sausage product destroyed*

Records Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: \_\_\_\_\_

# Labeling

## Mandatory Labeling Information

1. Name of Product
2. Name, address including zip code of store
3. Net weight statement
4. Complete and detailed ingredients statement
5. On fresh/raw meat products, the Safe Handling Statement must be included
6. Nutrition facts may be required, contact the Minnesota Department of Agriculture

## In addition, Reduced Oxygen packaged food labels must also include:

1. The Statement: **Keep Refrigerated or Frozen**
2. Instructions to discard the food if within 14 days of its packaging if it is not consumed
3. The shelf life must not be longer than 14 days from packaging to consumption or the original manufacturers "sell by" or "use by" date, whichever occurs first.

## Shelf life for various products will be as follows:

All in-store smokehouse products	XX days
Sliced cold cuts (ham, smoked turkey, salami, etc.)	XX days
Cheese (block or sliced)	XX days
Raw meats or poultry	XX days

## Sample Label

J's Market  
Axytown, MN 55331

**Sliced Ham**

INGREDIENTS: Pork cured with Water, Salt, Dextrose, Sodium Phosphate, Sodium Erythorbate, Sodium Nitrite

**KEEP REFRIGERATED OR FROZEN**

Packed On	Use By	\$
Net Wet	Unit Price	

**DISCARD IF NOT CONSUMED BY  
USE BY DATE**

# **Training Program - For Food Handlers Conducting Reduced Oxygen Packaging**

## **Understanding the potential hazards associated with reduced oxygen packaging**

While the process of packaging foods using a reduced oxygen method extends the shelf life, it also can pose a serious public health threat.

Generally, bacteria survive under conditions where there is oxygen is present - aerobic conditions - or where oxygen is not present anaerobic conditions. Some bacteria have the ability to adapt to either condition. Under traditional packaging conditions (aerobic conditions), spoilage bacteria would normally thrive and the product would spoil before the more hazardous types of bacteria might become a problem. During the process of 'vacuum packaging' or 'reduced oxygen packaging', the air inside the package (which is approximately 21 % oxygen) is eliminated, creating anaerobic conditions and thereby changing the types of bacteria that can survive in the package. Spoilage organisms are eliminated, but several types of pathogenic bacteria survive and actually thrive under these conditions. The pathogen of greatest concern is *Clostridium botulinum*. While botulism bacteria will normally be killed in a cooking step, spores of the bacteria may survive and could grow and produce toxin if the conditions are right. These conditions are similar to those that occur in a vacuum/reduced oxygen package. Other pathogens of concern may be *Listeria monocytogenes*, *Yersinia enterocolitica*, *Campylobacter jejuni*, and *Clostridium perfringens*.

## Concepts Required for a Safe Operation

A thorough understanding of the of the HACCP plan, the use of the reduced oxygen packaging equipment, and the standard operating procedures are critical to a safe operation. Areas to focus on include: products that can be packaged, temperature control, prevention of cross contamination, and health and personal hygiene of food handlers.

### ***Products that can be packaged by ROP***

State regulations limit the types of foods that can be packaged. This store's HACCP plan defines the foods that can be packaged using reduced oxygen packaging. **Only specific products on this list can be reduced oxygen packaged.** Any addition to the above list must first have the approval of the PERSON IN CHARGE. Changes must be noted in the HACCP PLAN. Foods to be reduced oxygen packaged at the retail level must be limited to one that does not support the growth of Clostridium botulinum because of one of the following requirements:

1. has a water activity of 0.91 or less
2. has a pH of 4.6 or less
3. is a food with a high level of competing organisms, including raw meat, raw poultry, or a naturally cultured standardized cheese
4. is a meat or poultry product that was cured at a USDA meat plant and received in an intact package or cured using approved substances (nitrates/nitrites).

By limiting the types of food that can be ROP to those on the list, an additional barrier to the growth of Clostridium botulinum is provided and thereby helps to ensure a safe product.

In addition, except for fish that is frozen before, during, and after packaging, a food establishment shall not package fish using a reduced oxygen packaging method.

Following are examples of foods that do not meet the above requirements and therefore may NOT be reduced oxygen packaged: Cooked turkey (including whole or sliced turkey breast), cooked roast beef, sandwich spread (including ham salad, chicken salad, etc.), cooked fresh sausage (not cured/smoked such as bratwurst), fresh salads.

### ***Temperature Control***

Temperature control is a very important factor in keeping all potentially hazardous foods safe. But the extended shelf life and decreased oxygen concentration allows certain pathogens to multiply in reduced oxygen conditions. To reduce the potential for growth of these pathogens, products (packaged and unpackaged) must be stored at cooler temperatures of 41° F or less. Employees must monitor the cooler temperatures at least every 4 hours to ensure that foods are not allowed to be out of the temperature requirements for extended periods of time.

### ***Preventing Cross Contamination***

Raw foods should be handled separately from cooked and ready to eat foods to avoid cross contamination. Utensils, equipment and work surfaces used for raw foods should be thoroughly cleaned and sanitized prior to using for cooked or ready-to-eat foods. In addition, ensure that ready-to-eat foods are stored so that blood or juices from raw products cannot drip or otherwise come into contact with them. Food handlers can also be a source of cross contamination through improper handwashing, or soiled clothing or aprons.

### ***Employee Health and Hygiene***

The health and personal hygiene of food handlers can also play a critical role in producing a safe ROP food. It is vital that employees working in this operation follow the Employee Practices guidelines in the Good Manufacturing Practices. (See Page xx). Particular attention should be paid to #1 - Handwashing procedures, #6 Clean Outer

Garments, and #1 0 - Food handling.

## Cleaning and Sanitizing Procedures - Equipment Food Contact Surfaces

Properly cleaned and sanitized food contact surfaces are critical to ensuring a safe, sanitary operation. Use of 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, iodine, acid, or quaternary ammonia types) reduce the numbers of pathogens and other microorganism to insignificant levels.

**The clean up process must be completed in accordance with the following procedures.**

- **Pre-cleaning** - Equipment and utensils shall be pre-flushed, pre-soaked, 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. Approved chemicals for WASHING are: \_\_\_\_\_
- **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 immersion, manual swabbing, brushing, or pressure spraying methods. Exposure time is important to ensure effectiveness of the chemical. Approved chemicals and exposure times for SANITIZING are:  
\_\_\_\_\_  
\_\_\_\_\_

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

## Frequency of Cleaning

**Equipment, food contact surfaces and utensils shall be cleaned in a time frame as follows:**

1. Before each use with a different type of raw animal food, including beef, fish, lamb, pork, or poultry;
2. Each time there is a change from working with raw foods to working with ready to eat foods;
3. Between uses with raw fruits or vegetables and with potentially hazardous foods;
4. At any time during the operation when contamination may have occurred.
5. If used with potentially hazardous foods, throughout the day at least once every four hours
6. Utensils and equipment that are used to prepare food in a refrigerated room that maintains the utensils, equipment, and food under preparation at 41°F or less and are cleaned at least once every 24 hours
7. Before using or storing a food thermometer.
8. For equipment used for storage of packaged or un-packaged food, including coolers, and the equipment is cleaned at a frequency necessary to eliminate soil residue.
9. For ice bins, at a frequency necessary to preclude accumulation of soil or mold.
10. Food contact surfaces of cooking equipment shall be cleaned at least once every 24 hours.

Non-food-contact surfaces of equipment shall be cleaned at a frequency necessary to prevent accumulation of soil residues.

## Good Manufacturing Practices - Employee Practices

1. Hands are to be thoroughly washed in a designated hand sink with soap and water, paying particular attention to the areas underneath the fingernails and between the fingers by scrubbing thoroughly with a using a fingernail brush. Dry with single use towels. 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
2. Fingernails must be kept trimmed, filed, free of nail polish, and maintained so the edges are cleanable and not rough.
3. Eating and drinking is prohibited in areas where contamination of exposed food, clean equipment, utensils, unwrapped single service and single use articles could occur. A food employee may drink from a closed beverage container in a food prep area as long as it is handled to prevent contamination.
4. Effective hair restraints must be worn in processing areas.
5. Smoking and other uses of tobacco are prohibited.
6. Clean outer clothing must be worn each day and changed as often as necessary throughout the day (when moving from a raw food operation to a ready-to-eat food operation).
7. Frocks and aprons used by employees are to be hung in a designated area when not in use. They are not to be worn in the toilet area, eating areas and locker rooms.
8. Foot wear is to be kept clean.
9. No jewelry (except a wedding band or other plain ring) is allowed during handling of food.
10. Food Employees shall report to the Person in Charge when they have a symptom caused by illness, infection, or other source that is:
  - associated with diarrhea, vomiting or other acute gastrointestinal illness
  - jaundice
  - a boil, infected wound or other lesion containing pus that is open or draining unless if on the hands or wrists, unless a finger cot or other impermeable cover protects the lesion and a single use glove is worn if on exposed portions of the arms, the lesion is protected by an impermeable cover.

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



# Flow Diagram for HACCP Category: Fully Cooked, Not Shelf Stable Whole Muscle Products

Example Product(s): Hickory Smoked Bacon, Hickory Smoked Boneless Ham

