**Facility:**

**Other retail facilities, farmer markets, etc.:**

**Purpose:**

This HACCP plan describes processing and re-packing process used for Pickled Bologna. The establishment has a Specialized Meat Processing at Retail Food Establishment Variance that contains Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs) which are followed.

The product is still classified as Time / Temperature Control for Safety - Food

**Ingredients:** Bologna, Vinegar, Water, (insert other ingredients)

**Process Flow Diagram:** see below

**Facility Layout:** on file at Michigan Department of Agriculture and Rural Development, Food and Dairy Division

**Equipment used:**

* Cooler

**Food employee and supervisory training plan addressing food safety issues of concern:** Employees are trained in proper good manufacturing practices of raw and cooked foods. This includes preventing cross-contamination throughout processing and packaging by doing cooked foods before raw food, properly cooling cooked foods, and storage after packaging. Employees will be observed to make sure they follow practices.

**Standard Operating Procedures (SOP)**

Product processing:

* Prepare flavoring solution
* In container, place bologna, add flavoring solution and vinegar
* Cover container, label and store in cooler at 41F or less for up to 3 weeks
* Remove bologna, portion and place in labeled self-service container
* Add flavoring solution
* Transfer to other company location and / or display in refrigerated case at 41F or less for 60 days

There will be no cross contamination between ready to eat (RTE) food products and raw food products.

Flavoring solution pH will be less than 4.6, which is recognized to control spore forming microorganisms. Confirmation of pH will be based on flavoring solution recipe.

Product label will include **“Keep refrigerated at 41°F”**.

Product transport from processing facility to other company owned facility or farmer’s markets under refrigerated and/or frozen transportation. Product remains refrigerated during transportation.

Pickled Bologna will be discarded if it is not sold for off-premises consumption or consumed within 60 calendar days of its packaging.

**Each Critical Control Point (CCP)**

Temperature monitoring of food products in refrigerated storage

**Critical Limits for each Critical Control Point**

Food product temperature is less than or equal to 41°F.

**Method and frequency for monitoring and controlling each CCP and who**

Contact tip or equivalent calibrated thermometer used to measure a minimum of one randomly selected food product temperature a minimum of once per day of operation day by designated employee.

**Corrective actions**

If the product temperature is greater than 41°F, determination of the cause of refrigeration malfunction, corrected, or repaired.

Product temperature is measured and action as followed:

|  |  |
| --- | --- |
| Product Temperature | Actions |
| > 41°F ≤ 48°F | Refrigerate product and sale within 7 days. |
| > 48°F  | Hold and dispose product. |

**Records**

Food temperature log example attached. Facility may use alternate log.

*Process Flow Diagram*

***2.*** *Prepare flavoring solution*

***3.*** *In container, place bologna, add flavoring solution and vinegar*

***4.*** *Storage (Refrigerated) at 41F for up to 3 weeks*

***5.*** *Remove bologna, portion and place in labeled self-service container*

***7.*** *Add flavoring solution*

***1.*** *Receiving Packaging Materials*

***6.*** *Storage of Packaging Materials*

***8.*** *Transfer to other company location and / or retail sales display*

CCP < 41°F

|  |  |  |
| --- | --- | --- |
| **(Facility Name)** |  | **Refrigeration Food Temperature Log** |
| **(Facility Address)** |  |
|  |  |  |  |  |  |  |
| **Product Name** | **Date / Time** | **Temperature (°F) Max. 41°F** | **Initials** |  |  |  |
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**Additional scientific data / supporting documentation as required**

**Tompkin paper**, Bruce Tompkin Ph.D. Armour Swift-Eckrich

Table 1. Minimum growth temperatures for selected foodborne pathogens.

 Minimum Growth

 Temperatures\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| Salmonellae1 | 7C | 44.6F |
| Pathogenic *E. coli* | 7-8C | 44.6-46.4F |
| *L. monocytogenes* | -0.4C | 31.3F |
| *Y. enterocolitica* | -1.3C | 29.7F |
| *Campylobacter jejuni* | 32C | 89.6F |
| *Staphylococcus aureus* | 7C | 44.6F |
| *Bacillus cereus*2 |
| psychrotrophic strains | 4C | 39.2F |
| *Clostridium perfringens* | 12C | 53.6F |
| *Clostridium botulinum* |
| nonproteolytic | 3.3C | 38F |
| proteolytic | 10C | 50F |

• 1One report of initial growth on bacon at 5C but then the population decreased.

• 2While growth of *B. cereus* occurs in milk at refrigeration temperatures (e.g., <7C), there is no evidence for this in meat and poultry. One study reported death of vegetative cells in ground beef at 12.5C (54.5F) and below.

• Parasites (e.g., *Trichinella spiralis*, *Taenia* spp., *Toxoplasma gondii*) and viruses do not multiply in meat or poultry products.

Source: International Commission on Microbiological Specifications for Foods. 1996.

Microorganisms in Foods: Microbiological Specifications of Food Pathogens. Blackie

Academic & Professional, New York.

Table 2. Estimated time (hours) for a ten-fold increase at 50, 60 and 70F.

Estimated Time (hours) to increase from 10 to 100 CFU/ml

|  |  |  |  |
| --- | --- | --- | --- |
|  | 50F (10C) | 60F (15.6C) | 70F (21.1C) |
| Salmonellae | 107 | 24 | 9 |
| *E. coli* O157:H7 aerobic | 50 | 21 | 9 |
| anaerobic | 123 | 38 | 16 |
| *L. monocytogenes*aerobic | 38 | 16 | 8 |
| anaerobic | 58 | 27 | 16 |

 *Y. enterocolitica* 68 31 16

Source: USDA ARS Pathogen Modeling Program Version 4.0.

Conditions: broth medium, pH 6.0, salt 0.5%, sodium nitrite 0.0%

### A Report of the Institute of Food Technologists for the Food and Drug Administration of the United States, Department of Health and Human Services, December 31, 2001

### <https://www.fda.gov/media/103613/download>

### Comprehensive Reviews in Food Science and Food Safety

### Chapter III Factors that Influence Microbial Growth

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