STANDARD OPERATING PROCEDURE

Cheese Brine Creation, Storage and Maintenance

FILE NAME: Location on your computer/company network

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EFFECTIVE DATE: Date of Approval

APPROVED BY: _____

The following individual is responsible for implementation of this SSOP and has overall authority on-site:

Name: _____ Title: _____

Date: _____

SECTION 1: OVERVIEW

1.1 Purpose

To provide information on proper brine makeup, storage and maintenance for use in brined cheese production.

1.2 Scope

Cheeses that require salt during production can be salted in two ways: directly applied salt or brining. Creating a brine that is properly balanced for the cheese, and well maintained to avoid quality or environmental contamination is important. This SOP applies to any cheeses produced that require brining.

1.3 Other Applicable References

Good Manufacturing Practices
General Cleaning and Sanitation Standard Operating Procedures

SECTION 2: MATERIALS

2.1 Supplies

Warm, clean water; Non-iodized, food grade salt; Calcium Chloride; Vinegar or citric acid solution.

A clean, sanitized, non-porous, food grade container to hold the brine, plus a sanitized stainless steel stirring tool

Measuring equipment: pH meter; salinity measurement tool (salometer)

SECTION 3: SAFETY/ENVIRONMENTAL CONCERNS

3.1 Safety Considerations

Use care with the salt and Calcium Chloride needed to create brine. Use appropriate personal protection (ie gloves) to avoid coming into contact with harsh brine water or chemicals. If the brine is created in a moveable container, use extreme caution when moving the brine container, so it doesn't spill.

SECTION 4: FREQUENCY

4.1 Creation of Brine/Testing of Brine

Brine will be first made when a cheese is produced at the plant that requires brining. Cleaning and maintaining brine should be done after each batch of cheese is removed from the brine, and anytime it is deemed necessary. Salinity testing should be performed monthly to ensure salt content is consistent. Brine can be sampled for microbiological makeup twice per year or whenever a problem is suspected.

SECTION 5: RESPONSIBILITY

5.1 Task

Creating, maintaining and sampling brine are performed by the cheesemaker responsible for the brined cheese.

5.2 VERIFICATION

Assistance will be provided by the Plant Manager/PPS to ensure brine is of proper salinity and cleanliness.

5.3 PAPERWORK REVIEW

Records will be kept of brine testing and any corrective actions necessary. These will be used for review when required by regulatory agencies, or for quality purposes as needed.

SECTION 6: PROCEDURE

6.1 Brine Creation

Making a new brine requires adding the right amount of salt to warm water to dissolve the salt, as well as adding Calcium Chloride and acid to properly balance the pH

6.2 Brine Recipe

Brine for cheese is made in the range of 18-23lbs of salt per 100lbs of brine. .1%CaCl liquid is added, and enough vinegar or food grade citric acid or food grade lactic acid to bring pH to equilibrium of cheese entering the brine (usually between 4.9-5.3).

Slowly dissolve salt into warm water, stirring constantly. Add CaCl. Measure pH, then add citric acid or vinegar to bring pH of the brine to 4.9-5.1

Cool brine before use. Check salinity before first use. 18-23% salt concentration is desired, depending on which style of cheese you're brining. This equates to 70-88% saturation.

6.3 Brine Storage

Store brine in a cool room, ideally between 10-14°C (50-60°F). Usually brine is stored in the aging room.

6.4 Brine Use/Cleaning

Stir brine before use with stainless steel paddle.

Once cheese is placed in brine, sprinkle exposed surfaces with salt. When ready to remove cheese, dip the cheese below the surface of the brine, to allow excess dry salt to dissolve back into the brine. This helps replace the salt that is taken up by the cheese.

After use, use a stainless steel colander and small pail to strain out any pieces of curd that were left behind after brining. Then use a clean cloth or scrubber with a small container of sanitizer. Wipe down the exposed sides and top lip of the brine container with sanitized cloth or scrubber. When finished, the brine should be clear and there should be no pieces of curd or soil on the walls or top of the brine container.

6.5 Brine replacement

Brine that is clean and well-maintained can be used for a long period of time. It is properly balanced for pH/minerals and shouldn't be discarded unless a problem is seen.

It is possible to pasteurize or treat brine with UV in order to clean and continue using old brine.

If brine is found to contain pathogens or is excessively dirty, and pasteurization or other treatment is not possible, the brine should be discarded and replaced with new brine. Ensure the new brine is carefully pH balanced so that the cheese entering the brine is the same pH as the brine itself. Rind problems will occur if pH isn't balanced.