

**SAMPLE DOCUMENTATION
PRODUCTION OF DAIRY PRODUCTS IN FOOD SERVICE
ESTABLISHMENTS**



Ministry of
Health

Production of Paneer in Food Service Establishment

Paneer is a fresh cheese that is a common ingredient used in northern Indian (as well as other nearby countries') cooking. Paneer is a fresh cheese so it's somewhat like other fresh cheeses like ricotta, quark and cottage cheese. It's got a milky flavour and a lovely texture a bit like firm ricotta. It's unsalted so quite bland and not very creamy in flavour. It is an unaged cheese that doesn't melt. Some foodservice operations deep fry and freeze paneer for ease of use in operations. This additional process step is included in the process flow diagram in this procedure. The additional food safety hazards are identified and methods to control the additional hazards are included. The use of vacuum packaging significantly increases the shelf life of paneer.



STANDARD RECIPE

10 Litres of pasteurized milk (whole milk).

350 ml Lemon juice

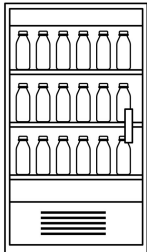
Flour for coating paneer before frying (optional)

Acidulant like lemon juice/ vinegar is added at a 3.5% use rate based on amount of milk.

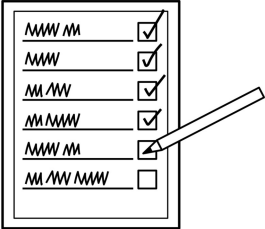

Equipment List

Thermometer	Long handled metal spoon	Measuring spoons	Kettle/Pot
Colander	Catch bowl for whey	Cheese cloth	String
Curd knife	Cheese press	Cheese Molds	Deep fat fryer

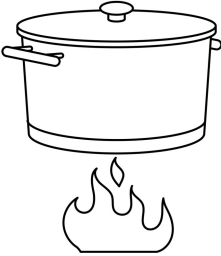

PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
1	Purchase and refrigerate milk 	<p>Biological</p> <p>Pathogen contamination due to using product that is past best before date.</p> <p>Pathogen growth due to time/temperature abuse.</p> <p>Pathogen contamination due to condensation falling onto/into uncovered product.</p>	<ul style="list-style-type: none"> • Purchase and use only pasteurized dairy ingredients from approved sources. • Keep pasteurized dairy ingredients in original commercial packaging, as purchased, until use. • Store at 4°C or colder. <p style="text-align: center;">Do not use products where the best before date has expired.</p>

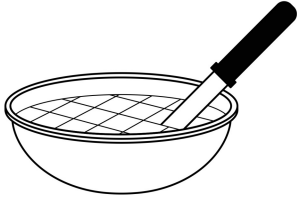
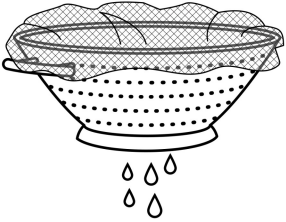
PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
2	<p>Preoperational Checks</p> 	<p><u>Biological</u></p> <p>Pathogen contamination due to condensation falling onto/into uncovered product.</p> <p>Pathogen contamination due to incomplete sanitation procedures.</p> <p>Pathogen growth due to inadequate freezing (e.g. time/temperature abuse, improper air flow, space between packages, stacking procedure).</p> <p><u>Chemical</u></p> <p>Cross contamination due to improper separation of activities.</p> <p>Contamination with non-food chemicals due to residual cleaners or sanitizers.</p> <p>Contamination with non-food chemicals due to mishandling of sanitizer spray bottles during use or filling.</p>	<ul style="list-style-type: none"> • Inspect, clean and sanitize designated work area. • Inspect equipment, utensils, and processing areas (clean and sanitized). • Use written recipe each time you make the product to ensure consistency of measurements and that all steps in the production process are followed. • Label the sanitizer spray bottles to indicate the content (non-food chemical).
3	<p>Stage Ingredients</p> 	<p><u>Biological</u></p> <p>Pathogen growth due to time/temperature abuse.</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p>Pathogen cross-contamination due to improper employee handling practices.</p> <p><u>Chemical</u></p> <p>Contamination with non-food chemicals due to residual cleaners or sanitizers.</p> <p><u>Allergens</u></p> <p>Allergen cross contamination due to improper separation of activities.</p>	<ul style="list-style-type: none"> • Paneer is a fresh cheese made by curdling milk using an acid such as lemon juice, vinegar, or citric acid solution. The acidulant used can affect flavour. Too much acidulant may make the product grainy. • Paneer is pressed to develop texture and remove whey. • Calcium chloride is added to milk to promote curd formation. • The ratio of butterfat to milk solids not fat (SNF) in the milk determines the yield.

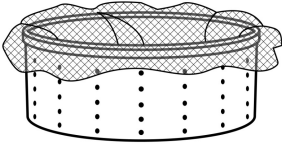
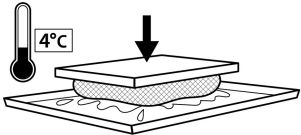
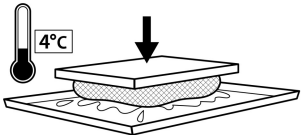
PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
4	Heat Milk 	<p><u>Biological</u> Pathogen growth due to time/temperature abuse (too slow heating rate, incorrectly calibrated thermometer). Pathogen contamination due to unsanitary equipment. Pathogen contamination due to improper employee hygiene practices.</p> <p><u>Chemical</u> Contamination with non-food chemicals due to incomplete sanitation procedures.</p> <p><u>Allergens</u> Contamination by allergens due to improper separation of activities.</p>	<ul style="list-style-type: none"> • Heat milk to desired temperature (about 80 to 82°C) as per your recipe (reach temperature within 1 hour) • Stir constantly to avoid burning the milk. Use of a water bath or double boiler is recommended. • Turn off heat when temperature is reached. <p style="text-align: center;">Check temperature with clean and sanitized probe thermometer</p>
5	Add Acidulant 	<p><u>Biological</u> Pathogen contamination due to improper employee handling practices. Pathogen growth due to time/temperature abuse.</p> <p>Pathogen contamination due to unsanitary equipment. Pathogen growth due to improper acidification.</p>	<p>CRITICAL CONTROL POINT (CCP1B)</p> <ul style="list-style-type: none"> • Acidulant (lemon juice or vinegar) is added at a 3.5% use rate based on amount of milk. • Add the acidulant (lemon juice/vinegar) and gently stir with a whisk just to combine. • The milk will begin to coagulate immediately, and the solids will separate from whey. The whey should look clear, not milky. It will have a yellowish or green colour. • Curd will begin to form after about 2 minutes. • Measure pH with a calibrated pH meter. Record on batch report. The pH will drop to 5.4.

PROCESS BASED FOOD SAFETY PLAN

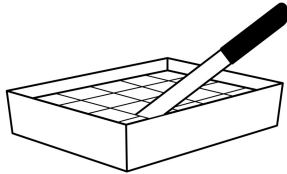
Step #	Process Step	Potential Hazards	Instructions and Outcomes
6	Form Curd 	<p>Biological</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p>Pathogen contamination due to improper employee handling practices.</p>	<ul style="list-style-type: none"> • Slowly raise the temperature to 90°C while gently stirring with a spatula. The curds and whey will begin to separate. • Continue to stir until the majority of floating cures have attached to the larger mass of curds. This will take about 10 minutes. • Remove from heat and gently stir around the edge of the curds with a rubber spatula. • Cover and allow the milk to rest for 5 minutes. <p>Corrective Action: If milk does not coagulate return to heat and continue to boil until solids separate completely. Additional acidulant may be required. Turn off heat as soon as you see it curdle. Too much heat at this point will cause paneer to become hard and grainy.</p>
7	Drain (curd separation) 	<p>Biological</p> <p>Pathogen growth due to time/temperature abuse (process step not done in cooler).</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p>Pathogen contamination due to use of non food grade or unapproved chemical.</p> <p>Pathogen contamination due to improper employee hygiene practices.</p>	<ul style="list-style-type: none"> • Wash hands and wear gloves before handling paneer at this step. • Prepare a cheese cloth lined colander. Place a catch bowl underneath to collect the whey as it drains off • Use a ladle or spoon to cut slices out of the curd and scoop it straight into the strainer for draining. • Tie the four corners of the cheese cloth into a knot and squeeze to remove whey. Hold the paneer for 30 minutes so the excess whey drains. Drain longer if a dryer paneer is desired. • Monitor temperature during this step. Paneer may be drained at room temperature until 60 °C is reached. Move to a 4°C cooler If more draining time is desired.

PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
8	Hoop (mold)	<p><u>Biological</u></p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p>Pathogen growth due to time/temperature abuse (process step not done in cooler).</p> <p><u>Physical</u></p> <p>Hazardous extraneous material contamination due to reusing worn out cheese cloth.</p>	<ul style="list-style-type: none"> Place the knotted bag of curd on a cookie sheet or mold of desired shape. Hold in cooler.
			
9	Press	<p><u>Biological</u></p> <p>Pathogen contamination due to unsuitable pressing equipment.</p> <p>Pathogen growth due to time/temperature abuse (process step not done in cooler).</p>	<ul style="list-style-type: none"> Place a heavy board such as a sanitized cutting board on the bag. Place a weight on top of the board (e.g. large jar filled with water). Use clean and sanitized weights to reduce the risk of contamination. Pressing procedure and equipment must be approved by EHO when food safety plan is submitted.
			
10	Cool	<p><u>Biological</u></p> <p>Pathogen growth due to time/temperature abuse.</p> <p>Pathogen contamination due to improper cooling procedure</p>	<p>CRITICAL CONTROL POINT (CCP 2B)</p> <ul style="list-style-type: none"> Leave the paneer to drain and firm in the cooler. Monitor cooling rate. Cool to 4°C before packaging. <ul style="list-style-type: none"> Ensure proper cooling rate: Cool down to 20°C within 2 hours, and 20°C to 4°C within 4 hours. Total cooling time not to exceed 6 hours.
			

PROCESS BASED FOOD SAFETY PLAN

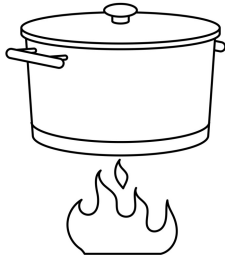
Step #	Process Step	Potential Hazards	Instructions and Outcomes
11	Portion	<p><u>Biological</u></p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p><u>Chemical</u></p> <p>Contamination with non-food chemicals due to residual cleaners or sanitizers.</p>	<ul style="list-style-type: none"> • Once it is firm, cut the paneer out of the mold or remove from cheese cloth using a knife. • Ensure all utensils are sanitized and employees have washed hands and are wearing gloves.
12	Package/Label/Store	<p><u>Biological</u></p> <p>Pathogen growth due to improper storage conditions (freezer malfunction, improper air flow).</p> <p>Pathogen growth due to poor inventory control (use of FIFO for frozen paneer on hand).</p> <p>Pathogen growth due to time/temperature abuse.</p> <p>Pathogen growth due to improper sealing of package.</p>	<ul style="list-style-type: none"> • Use immediately or store in the refrigerator and use within three days. • Label container with product date or use by date. • Consult supplier of packaging materials if using vacuum sealer for this product.



PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
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13 Deep fat fry (optional step)



Biological
Pathogen survival due to improper heat treatment.

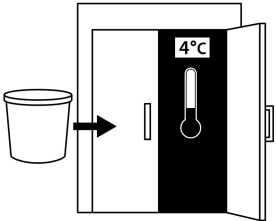
Allergens
Allergen cross contamination due to allergen containing food previously fried in same oil.

CRITICAL CONTROL POINT (CCP 3B)

- The paneer may be lightly coated with flour before frying to develop a crispy outside texture. Deep frying gives the paneer a crisp texture on the outside while the inside is a fluffy texture.
- **Shallow frying:** Heat oil in a pan. When the oil turns hot, add the paneer cubes to the oil one after the other. Do not disturb for one minute then flip and fry until golden. Drain on paper towel lined tray in cooler.
- **Deep frying:** Use a deep fat fryer on medium heat. Fry until crisp. Drain on paper towel lined tray in cooler. Use fresh oil in fryer if it has been previously used for a product that contains an allergen. (e.g. fish)
- The temperature of the oil when frying should be 177°C (350°F). The internal temperature of the paneer pieces should be 74°C.

Check temperature with clean and sanitized probe thermometer

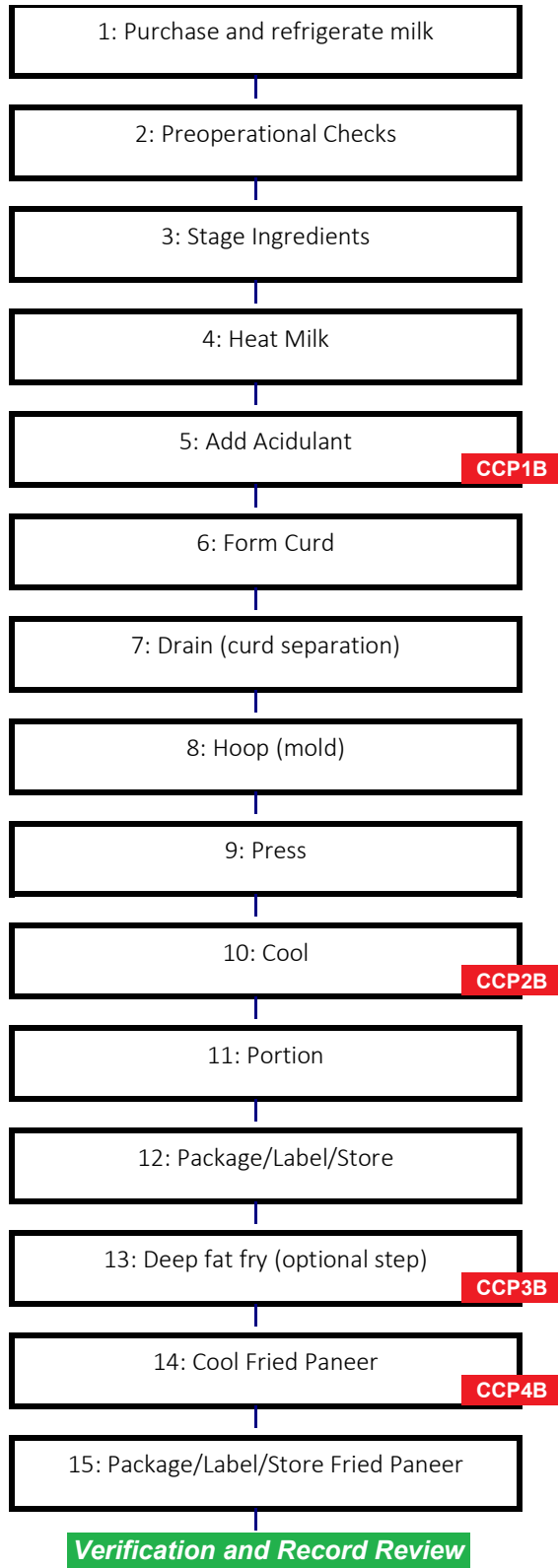
PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
14	Cool Fried Paneer	<p><u>Biological</u></p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p>Pathogen growth due to time/temperature abuse (too slow cooling rate, incorrectly calibrated thermometer).</p> <p><u>Chemical</u></p> <p>Contamination with non-food chemicals due to residual cleaners or sanitizers.</p>	<p>CRITICAL CONTROL POINT (CCP 4B)</p> <p>Cool to 4°C after frying and before packaging.</p> <p>Ensure proper cooling rate: Cool down to 20°C within 2 hours, and 20°C to 4°C within 4 hours. Total cooling time not to exceed 6 hours.</p>
			
15	Package/Label/Store Fried Paneer	<p><u>Biological</u></p> <p>Pathogen growth due to improper storage conditions (freezer malfunction, improper air flow).</p> <p>Pathogen growth due to poor inventory control (use of FIFO for frozen paneer on hand).</p> <p>Pathogen growth due to time/temperature abuse.</p>	<ul style="list-style-type: none"> • Use immediately or store in the refrigerator and use within three days. • Label container with product date or use by date. • Consult supplier of packaging materials if using vacuum sealer for this product.

Product Description Form (Foodservice)

Product Category	Paneer
1. What is your product name and weight/volume?	Paneer
2. What type of product is it (e.g. raw, ready-to-eat, ready-to-cook, or ready for further processing)	Ready to Eat (RTE), ingredient in meal preparation. May be deep fat fried and stored in freezer.
3. What are your product's important food safety characteristics (e.g. acidity, water activity, salinity, etc.)?	Direct acidification, pH 5.4 ± 2 , stored in refrigerator or freezer.
4. What allergens does your product contain?	Milk
5. What restricted ingredients (preservatives, additives, etc.) does your product contain, and in what amounts e.g. grams)	None
6. How do you store your product e.g. keep refrigerated, keep frozen, keep dry) in your establishment and when you ship your product?	Store in lidded container in refrigerator. (4°C).
7. What is the shelflife of your product under proper storage conditions?	Refrigerated product must be used within 3 days. Frozen product may be held in freezer for 2 weeks (<-18°C).
8. Who will consume your product (e.g. the general public, the elderly, the immunocompromised, infants?)	Food Service customers.
9. How might the consumer mishandle your product and what safety measures will prevent this?	Mishandled in kitchen. Poor inventory control of frozen product.
10. Where will the product be sold?	At own facility
11. What information is on your product label?	Keep refrigerated or frozen, production date (lot code)

Paneer
Process Flow Table



Critical Control Points Table: Paneer

1. Identifying Hazards	2. Identifying Critical Control Points (CCP)	3. Establishing Critical Limits:	4. Establishing Monitoring Procedures (who, what, how and when)	5. Establishing Corrective Actions:	6. Establishing Verification Procedures (who, what, how and when)	7. Keeping Records
Pathogen growth due to time and temperature abuse during production.	CCP1B Add Acidulant	Product temperature must remain above 60° C	<ol style="list-style-type: none"> 1. Production worker monitors temperature during coagulation step. Use a clean and sanitized thermometer. 2. Check pH with clean and sanitized calibrated pH meter. pH will drop to 5.4. 3. Record on batch report. 	<p>When critical limits are not being met for one or more sample.</p> <ol style="list-style-type: none"> 1. If product temperature falls below 60°C add heat. If it is impossible to raise temperature due to equipment malfunction the product must be disposed of. our. 2. Discard the batch if temperature drop can not be corrected within two hours. The batch may be contaminated and should not be used. 3. 2. Discard the batch if temperature drop can not be corrected within two hours. The batch may be contaminated and should not be used. Record as corrective action on batch report. 4. Clean and sanitize utensils, containers and equipment before reusing. 	<ol style="list-style-type: none"> 1. Operator reviews and signs batch reports at end of production day to ensure that it has been properly completed. 2. Once per week, the Operator ensures that the temperature monitoring and pH checks follow the procedure (observes production worker in their task). 3. If a non-conformance is found during the verification procedure, immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 4. Record all observations on the batch report, including the date, the time and initials. 	Paneer Batch Report Thermometer Calibration Log pH Meter Calibration Record
Pathogen growth due to improper cooling procedures.	CCP2B Cool	Cool down to 20 °C within 2 hours and from 20 to 4 °C within 4 hours. Total cooling time not to exceed 6 hours.	<ol style="list-style-type: none"> 1. Production worker checks temperature with clean and sanitized probe thermometer. 2. Check temperature every hour until 4 °C is reached. 3. Record on batch report 	<p>When critical limits are not being met for one or more product samples.</p> <ol style="list-style-type: none"> 1. Report slow cooling to Operator. Check cooler and determine if maintenance is required. 2. Place product on hold. Discard paneer if time limit has not been met. 3. Immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 4. Record all non-conformances and corrective actions on batch report. 	<ol style="list-style-type: none"> 1. Operator reviews and signs batch reports at end of production day to ensure that it has been properly completed. 2. Once per week, the Operator ensures that the temperature checks follow the procedure (observes production worker in their task). 3. Operator reviews and signs cooler temperature once per week. 4. If a non-conformance is found during the verification procedure, immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 5. Record all observations on the batch report, including the date, the time and initials. 	Paneer Batch Report Cooler Temperature Log Thermometer Calibration Log

Note: CCPs are points in the your process where controls are essential to preventing hazards or reducing them to acceptable levels. You may not be able to prevent or reduce the risk of the hazard at any later step. A CCP is measureable. Some examples of measureable CCPS in dairy processing are the time and temperature of pasteurization, the pH of a fermented dairy product and the water activity of a dried product such as skim milk powder. Foodservice establishments may include additional preparation steps as CCPs particularly when there is no cook step in the operation. These additional CCPs control the hazards associated with crosscontamination due to sanitation and personnel.

Critical Control Points Table: Paneer

1. Identifying Hazards	2. Identifying Critical Control Points (CCP)	3. Establishing Critical Limits:	4. Establishing Monitoring Procedures (who, what, how and when)	5. Establishing Corrective Actions:	6. Establishing Verification Procedures (who, what, how and when)	7. Keeping Records
Pathogen survival due to improper frying treatment.	CCP3B Deep fat fry (optional step)	Internal temperature of paneer cubes must reach 74 °C. Oil temperature of 178 °C (350 °F).	<ol style="list-style-type: none"> 1. Production worker checks temperature with clean and sanitized probe thermometer. 2. Record on batch report 	<p>When critical limits have not been met for the batch of paneer.</p> <ol style="list-style-type: none"> 1. Continue frying batch of product. Monitor temperature. Record on paneer batch report. 2. If problem is due to malfunctioning equipment (stove) report to Operator. Place product on hold (in cooler) until equipment can be fixed. Record on ice cream batch report. 3. If frying process can not be completed and temperature has not been met, discard the batch of paneer. 4. Immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 5. Record corrective action on paneer batch report. 	<ol style="list-style-type: none"> 1. Operator reviews and signs batch reports at end of production day to ensure that it has been properly completed. 2. Once per week, the Operator ensures that the temperature checks follow the procedure (observes production worker in their task). 3. Operator reviews and signs cooler temperature once per week. 4. If a non-conformance is found during the verification procedure, immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 5. Record all observations on the batch report, including the date, the time and initials. 	Paneer Batch Report Thermometer Calibration Log
Pathogen growth due to improper cooling procedures after frying.	CCP4B Cool Fried Paneer	Cool down to 20 °C within 2 hours and from 20 to 4 °C within 4 hours. Total cooling time not to exceed 6 hours.	<ol style="list-style-type: none"> 1. Production worker checks temperature with clean and sanitized probe thermometer. 2. Take two samples from different areas of the tray. 3. Insert the thermometer into the centre of the paneer cube and wait until the thermometer reading is steady. 4. Record on batch report 	<p>When critical limits are not being met for one or more product samples.</p> <ol style="list-style-type: none"> 1. Report slow cooling to Operator. Check cooler and determine if maintenance is required. 2. Place product on hold. Discard paneer if time limit has not been met. 3. Immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 4. Record all non-conformances and corrective actions on batch report. 	<ol style="list-style-type: none"> 1. Operator reviews and signs batch reports at end of production day to ensure that it has been properly completed. 2. Once per week, the Operator ensures that the temperature checks follow the procedure (observes production worker in their task). 3. Once per week, the Operator reviews cooler temperature log. 4. If a non-conformance is found during the verification procedure, immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 5. Record all observations on the batch report, including the date, the time and initials. 	Paneer Batch Report Cooler Temperature Log

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Paneer Batch Report

Date Made: 4/27/2022
Best Before Date: 5/4/2022
Lot Code: 22117
Cheesemaker: Joe
Preoperational checks done Yes, JG

Ingredients Used

Ingredient	Amount	Code/Lot	Supplier
Homo Milk (3.25%BF)	10 Litre	MA 22	Saputo
Lemon Juice	350 mL	2022 AU 25	Real Lemon

Process Step	Time	Temperature (°C)	pH	Comments
Heat Milk	8:00 AM	82	6.3	
Add Acidulant	8:45	82	5.4	
Form Curd	8:50	90	5.4	
Cut Curd	9:00	90		
Drain	9:30	65		
Press	9:45	63		
Cool				
After 2 hours	12:00	19		
After 6 hours	16:00	4		

Frying Record		Cooling Record	
Oil Temperature (°C)		After 2 hours	After 6 hours
Batch	Temp (°C)	Temp (°C)	Temp (°C)
1	74	48	4
2	74	43	4
3	74	52	4

Observed Deviations and Corrective Actions

Date of Record Review: 6-May-22 Verification by: M. Smith