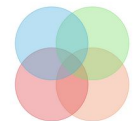


Two yellow circles of different sizes are positioned in the upper right area of the slide. The smaller circle is on the left, partially overlapping the text 'New'. The larger circle is on the right, partially overlapping the text 'development for' and 'cheesemakers'.

New product development for cheesemakers



Food Safety Guides

PRESENTER



Michael Kalish

Managing Member, **Food Safety Guides**

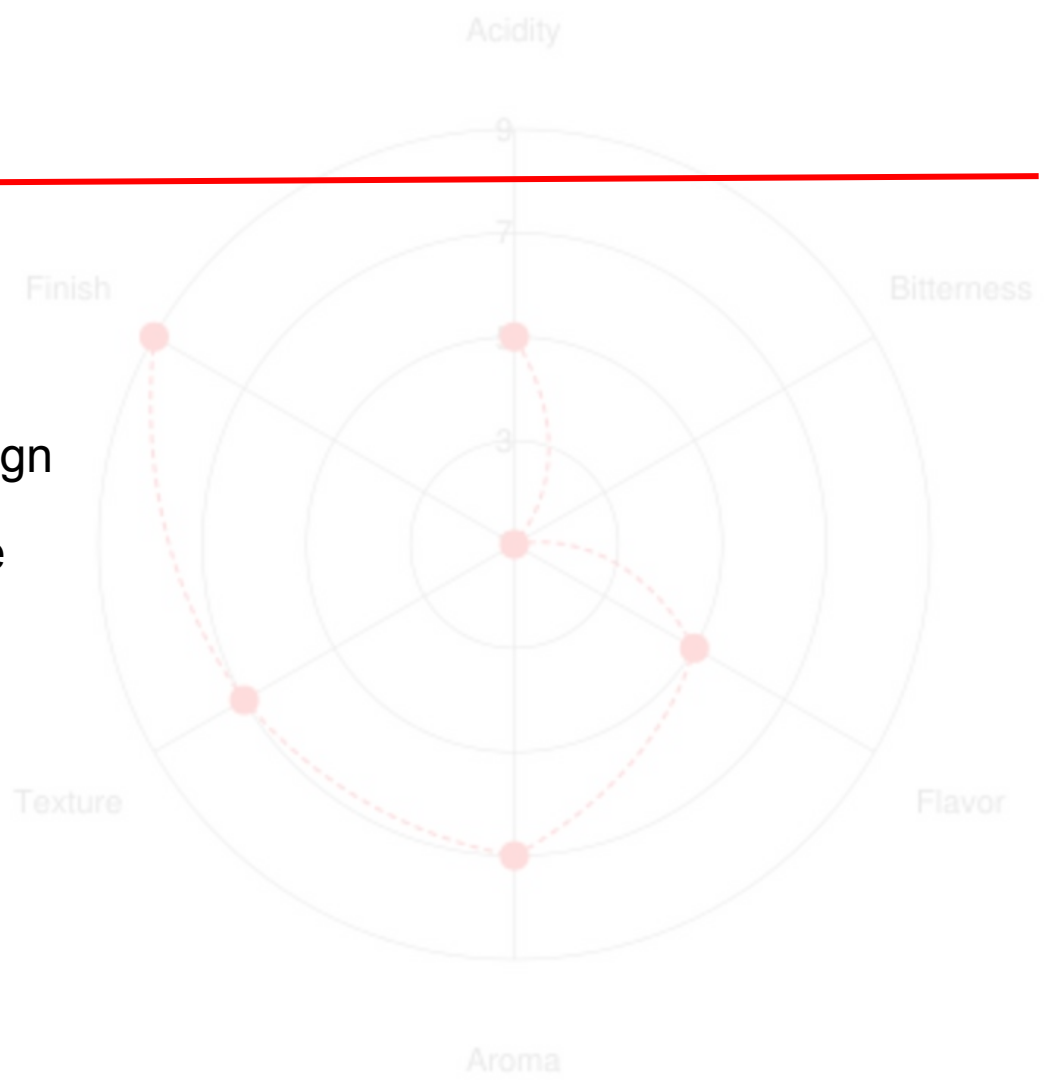
Senior Technical Advisor for Food Safety, **UC San Diego Extension**

International Cheese Expert/Consultant and FSPCA Lead Instructor

Brand Ambassador, **Meiomi Wines**

Agenda

- 1 Raw materials and labor
- 2 Equipment and Utensils
- 3 Facility Construction/Design
- 4 Expertise and Experience
- 5 Yield
- 6 Shelf-Life
- 7 Communication Skills
- 8 Audience



Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item
Milk
Rennet
Salt
Cultures
Labor*

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item	\$/ Unit
Milk	\$0.50
Rennet	\$100.00
Salt	\$3.00
Cultures	\$10.00
Labor*	\$15.00

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item	\$/ Unit	Unit
Milk	\$0.50	Liter
Rennet	\$100.00	Liter
Salt	\$3.00	Kg
Cultures	\$10.00	Per 100 L
Labor*	\$15.00	Hour

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item	\$/ Unit	Unit	Vol./ Batch
Milk	\$0.50	Liter	500
Rennet	\$100.00	Liter	0.1
Salt	\$3.00	Kg	0.1
Cultures	\$10.00	Per 100 L	5
Labor*	\$15.00	Hour	4

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item	\$/ Unit	Unit	Vol./ Batch	Batches/ Week
Milk	\$0.50	Liter	500	3
Rennet	\$100.00	Liter	0.1	3
Salt	\$3.00	Kg	0.1	3
Cultures	\$10.00	Per 100 L	5	3
Labor*	\$15.00	Hour	4	3

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item	\$/ Unit	Unit	Vol./ Batch	Batches/ Week	Cost/ Week
Milk	\$0.50	Liter	500	3	\$750.00
Rennet	\$100.00	Liter	0.1	3	\$1.20
Salt	\$3.00	Kg	0.1	3	\$0.90
Cultures	\$10.00	Per 100 L	5	3	\$150.00
Labor*	\$15.00	Hour	4	3	\$180.00

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Item	\$/ Unit	Unit	Vol./ Batch	Batches/ Week	Cost/ Week
Milk	\$0.50	Liter	500	3	\$750.00
Rennet	\$100.00	Liter	0.1	3	\$1.20
Salt	\$3.00	Kg	0.1	3	\$0.90
Cultures	\$10.00	Per 100 L	5	3	\$150.00
Labor*	\$15.00	Hour	4	3	\$180.00
				Weekly	\$1,802.10
				Annual	\$12,985.20

***Labor includes:** Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Hazard Analysis				Batches/ Week	Cost/ Week
Milk	\$0.50	Liter	500	3	\$750.00
Rennet	\$				\$1.20
Salt					\$0.90
Cultures	\$10.00	Per 100 L	5	3	\$150.00
Labor*	\$15.00	Hour			
Annual					\$12,985.20

*Labor includes: Prep, manufacturing, aging, packaging and marketing

Create a General Budget Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Process Step
Receiving
Storage
Pasteurization
Renneting/Culturing
Cutting/Stirring
Forming/Pressing
Brining
Aging

Create a flow diagram to help you create a list of equipment/utensils

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Process Step	Equipment/Utensil	Yes	No
Receiving	Mobile bulk tank, hose, pump	✓	
Storage	Bulk tank, dry storage rack	✓	
Pasteurization	800L vat pasteurizer, arm	✓	
Renneting/Culturing	Stainless steel container, whisk	✓	
Cutting/Stirring	Blade, Paddle	✓	
Forming/Pressing	10 moulds, 10 followers/weights	✓	
Brining	50 Liter brining tank	✓	
Aging	Aging racks		✓

Create a flow diagram to help you create a list of equipment/utensils

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

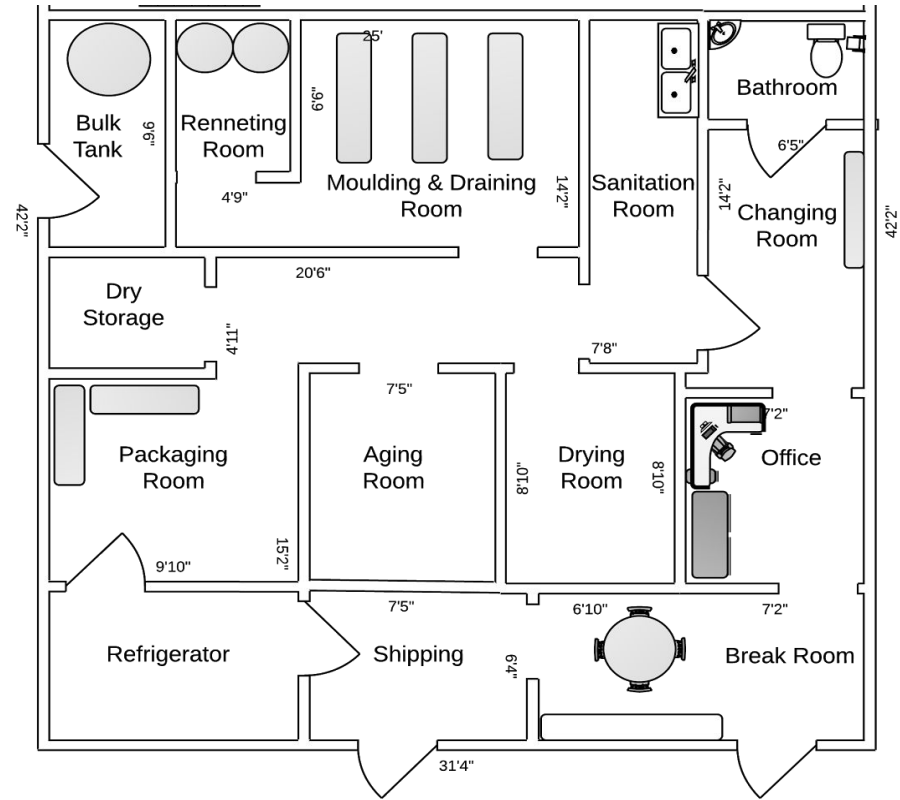
Expertise and Experience

Yield

Shelf-Life

Communication Skills

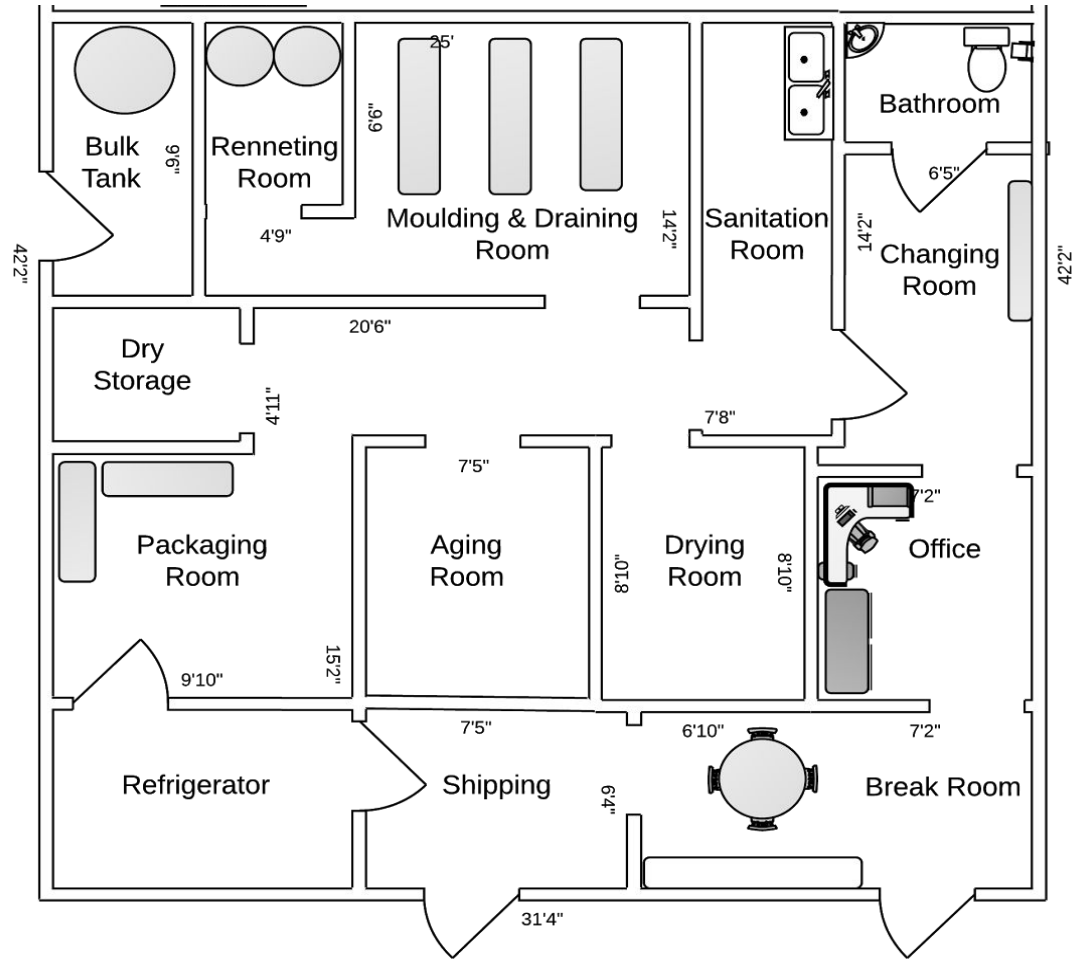
Audience



Birds eye view

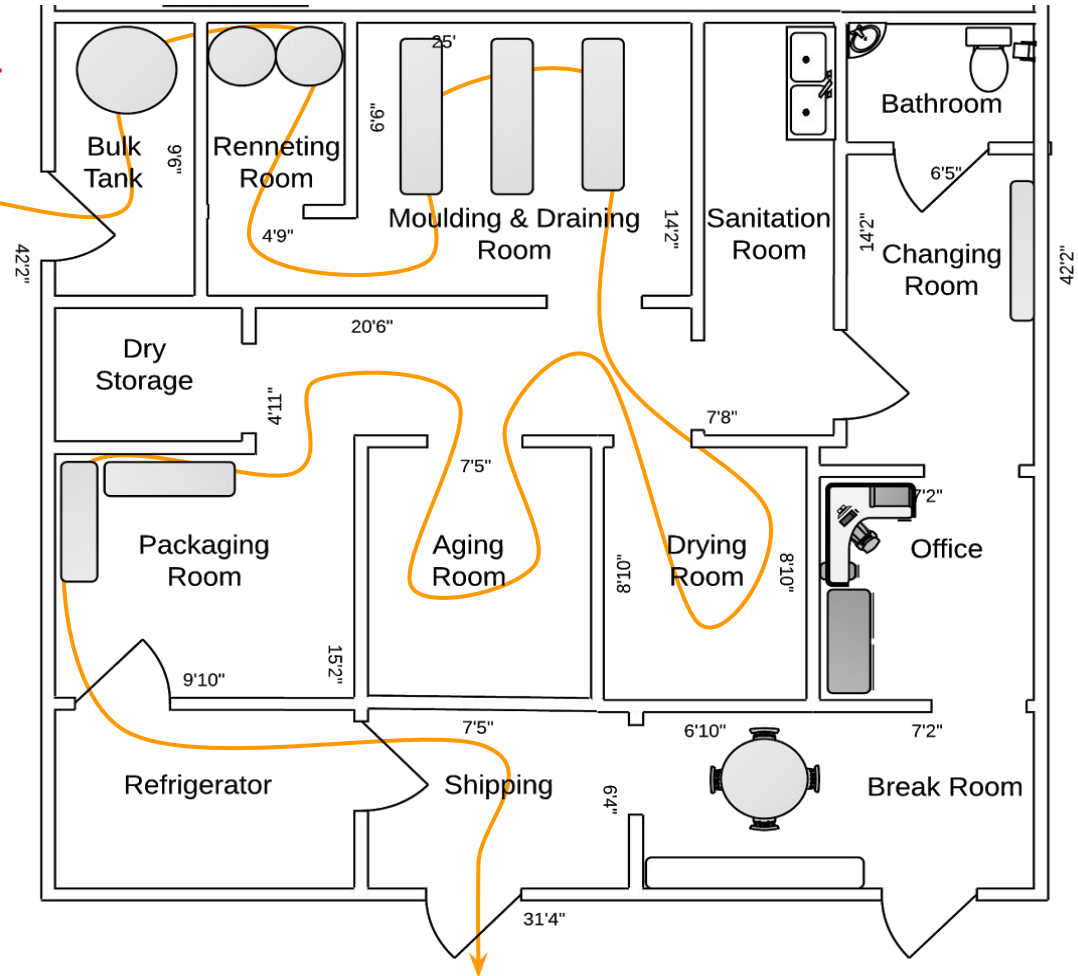
Step 1

Map the Facility



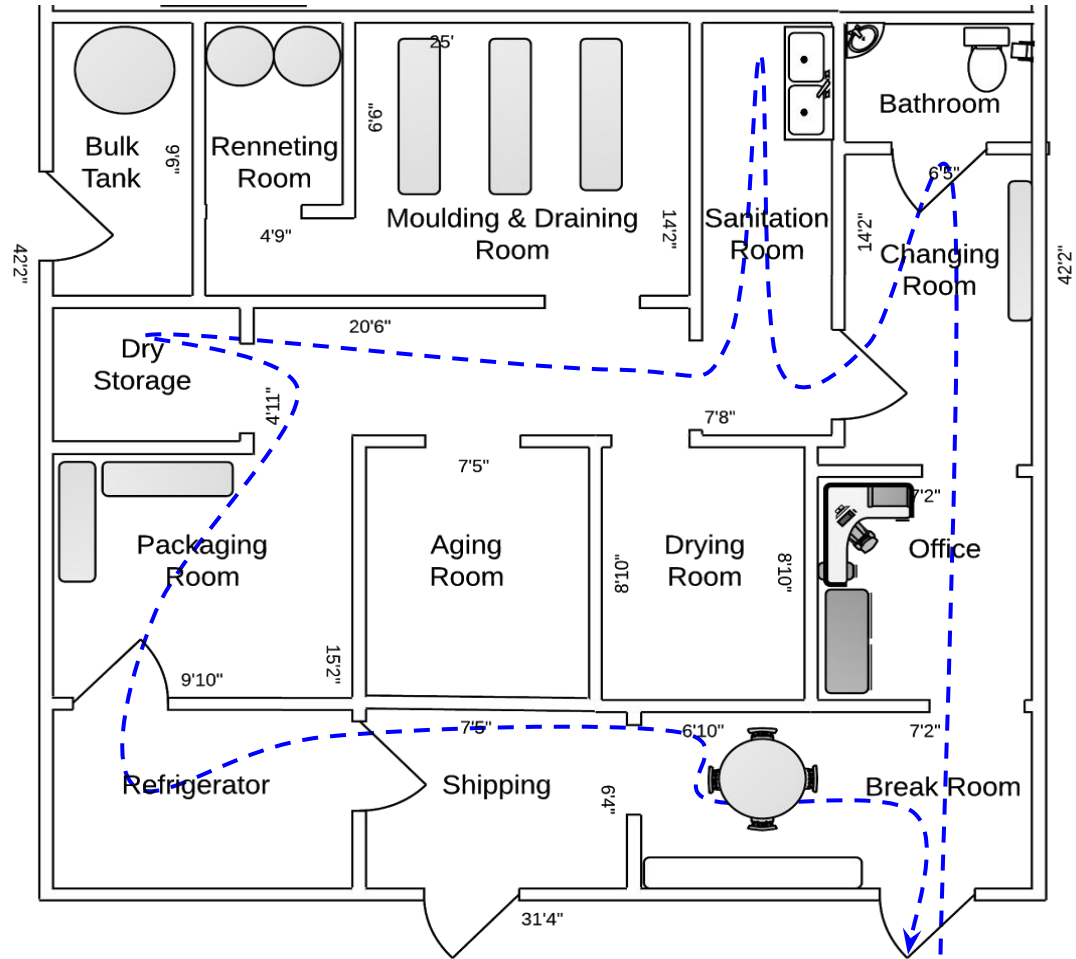
Step 2

Flow of food



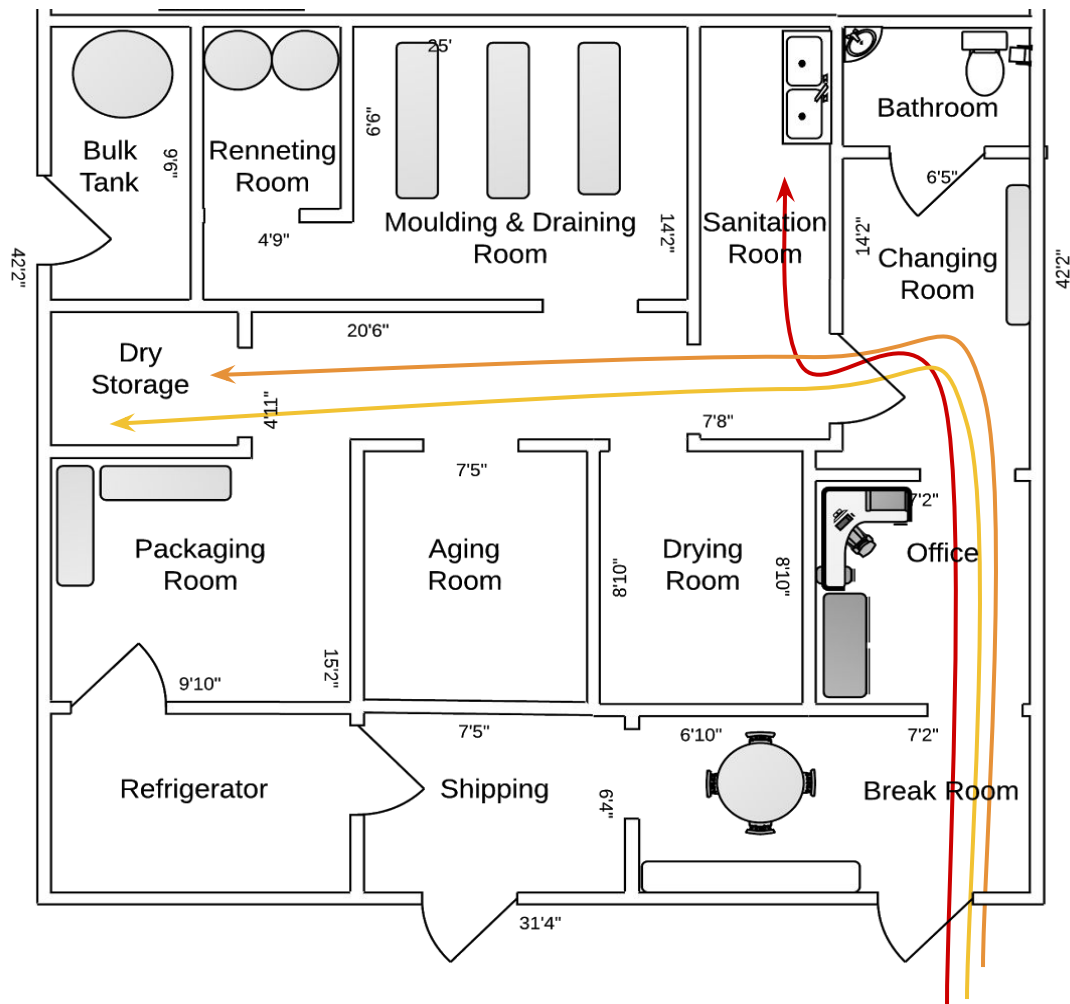
Step 3

Flow of personnel



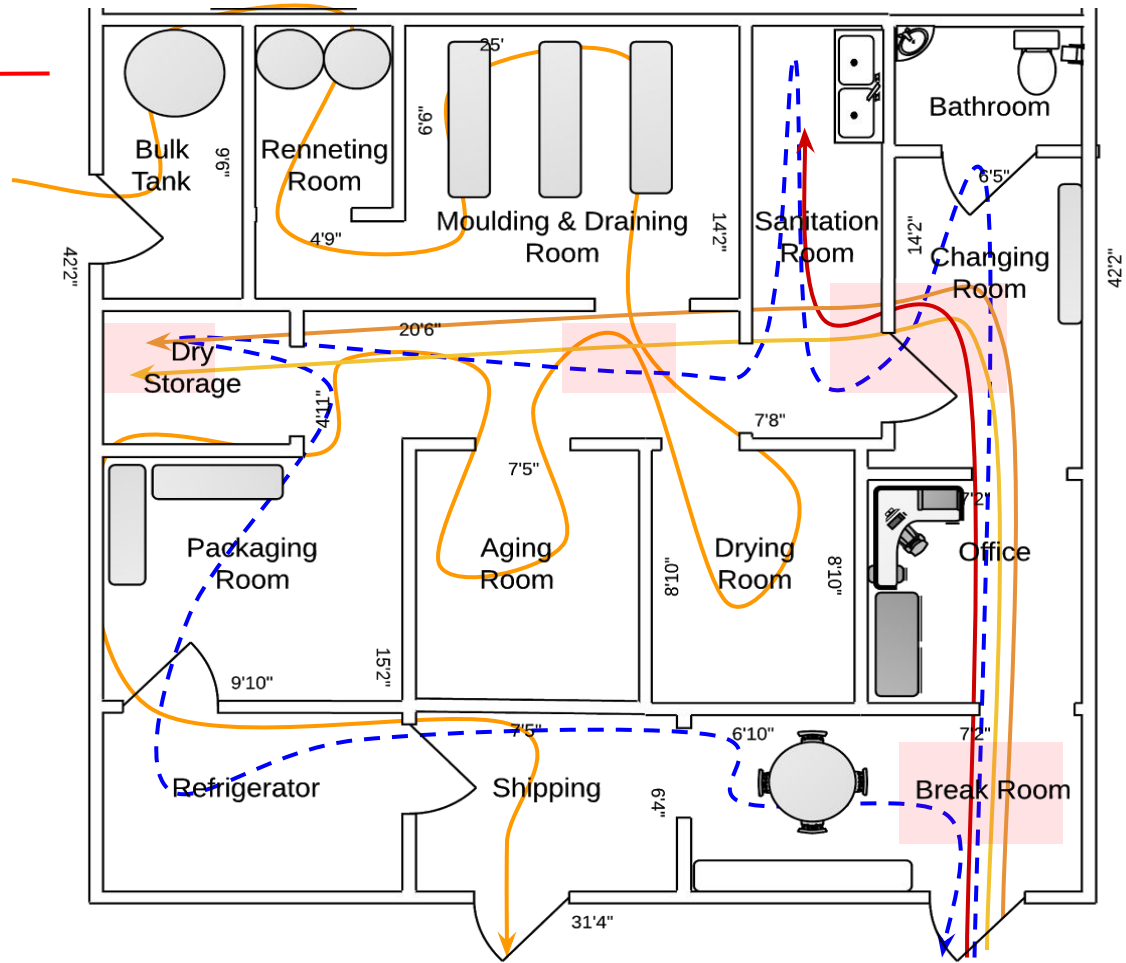
Step 4

Flow of packaging
Flow of allergens
Flow of chemicals



Step 5

Highlight high traffic areas



Raw materials and labor

Equipment and Utensils

Facility Construction/Design

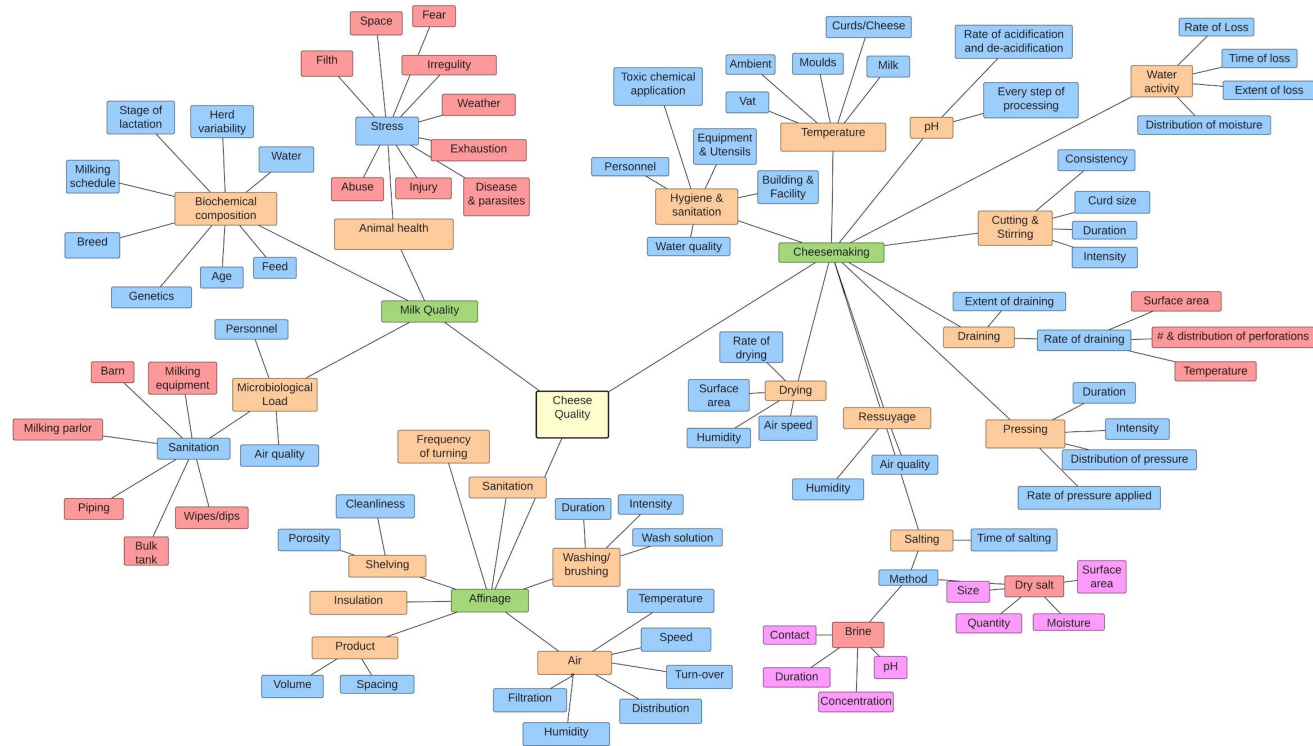
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Expertise and Experience

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

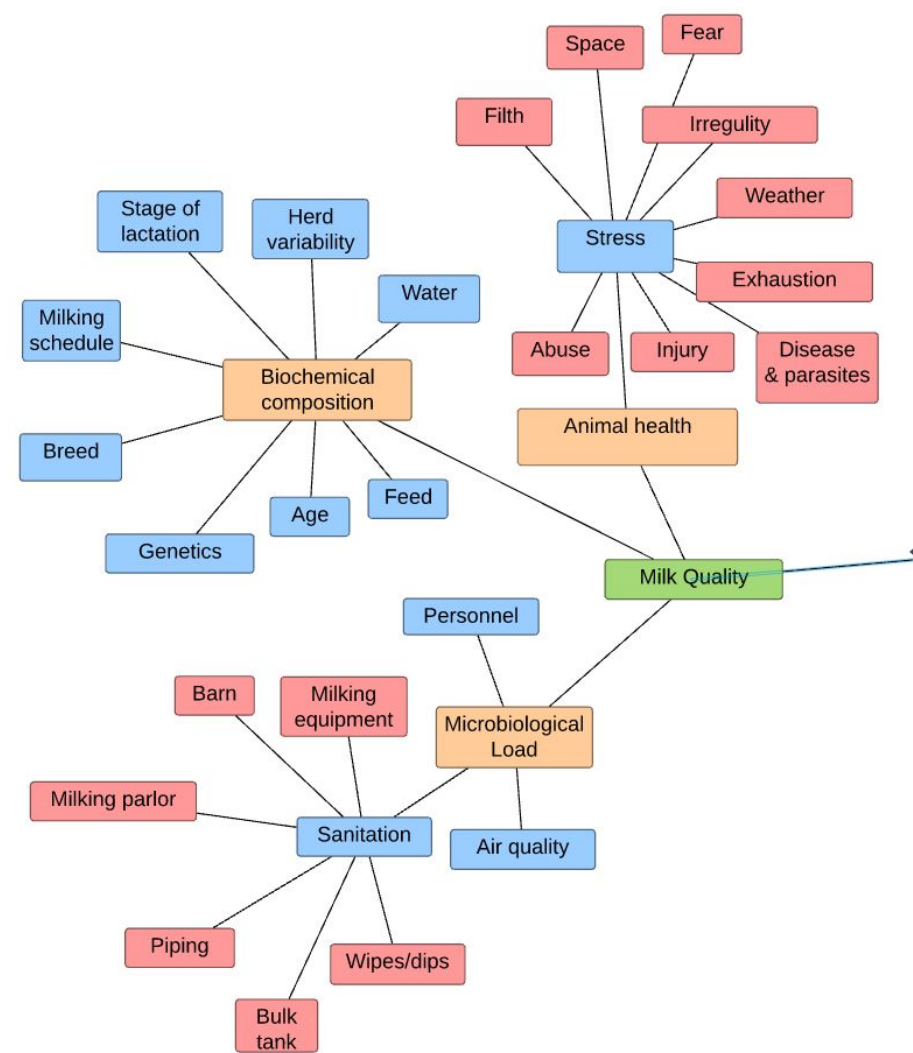
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Raw materials and labor

Equipment and Utensils

Facility Construction/Design

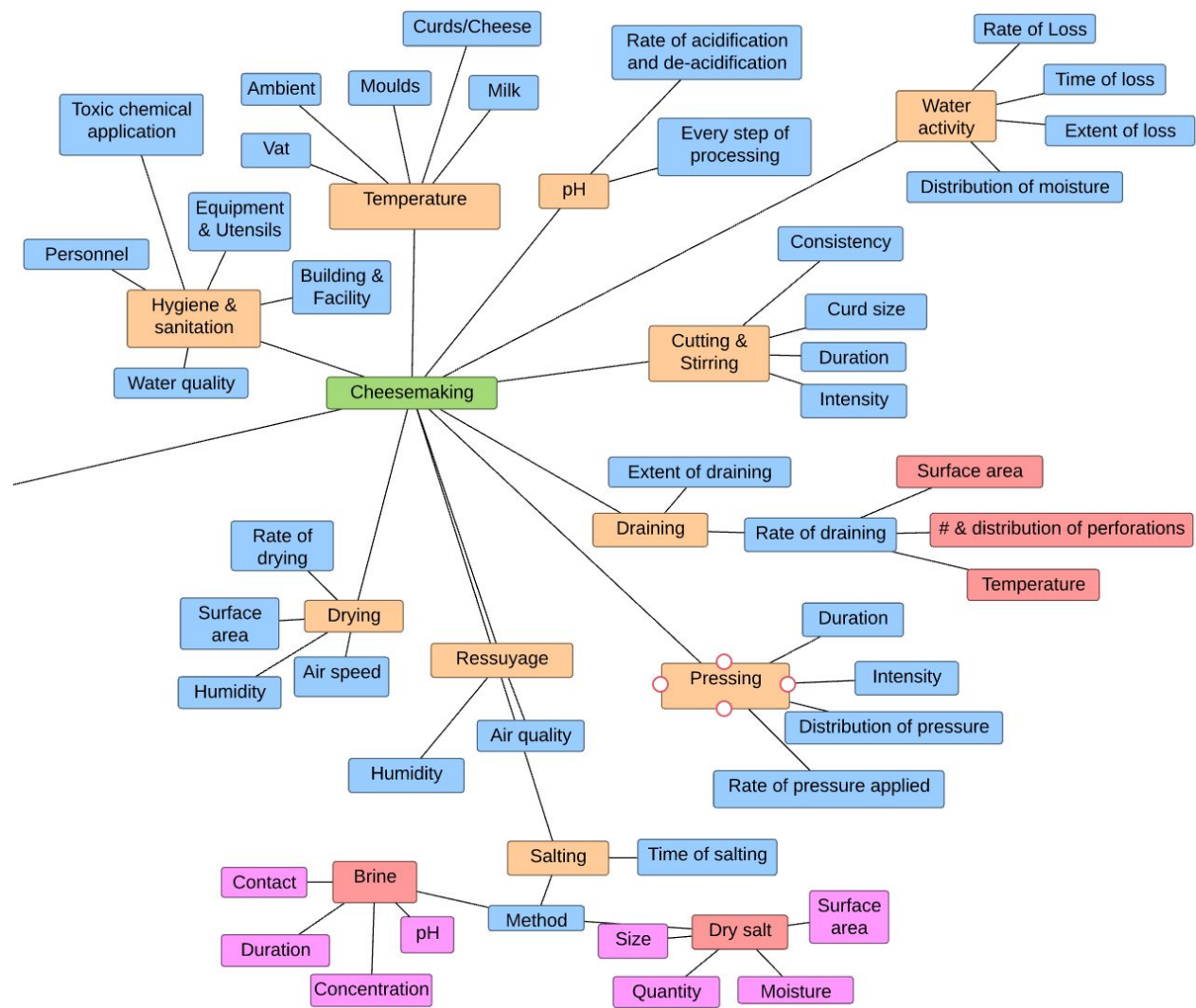
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Raw materials and labor

Equipment and Utensils

Facility Construction/Design

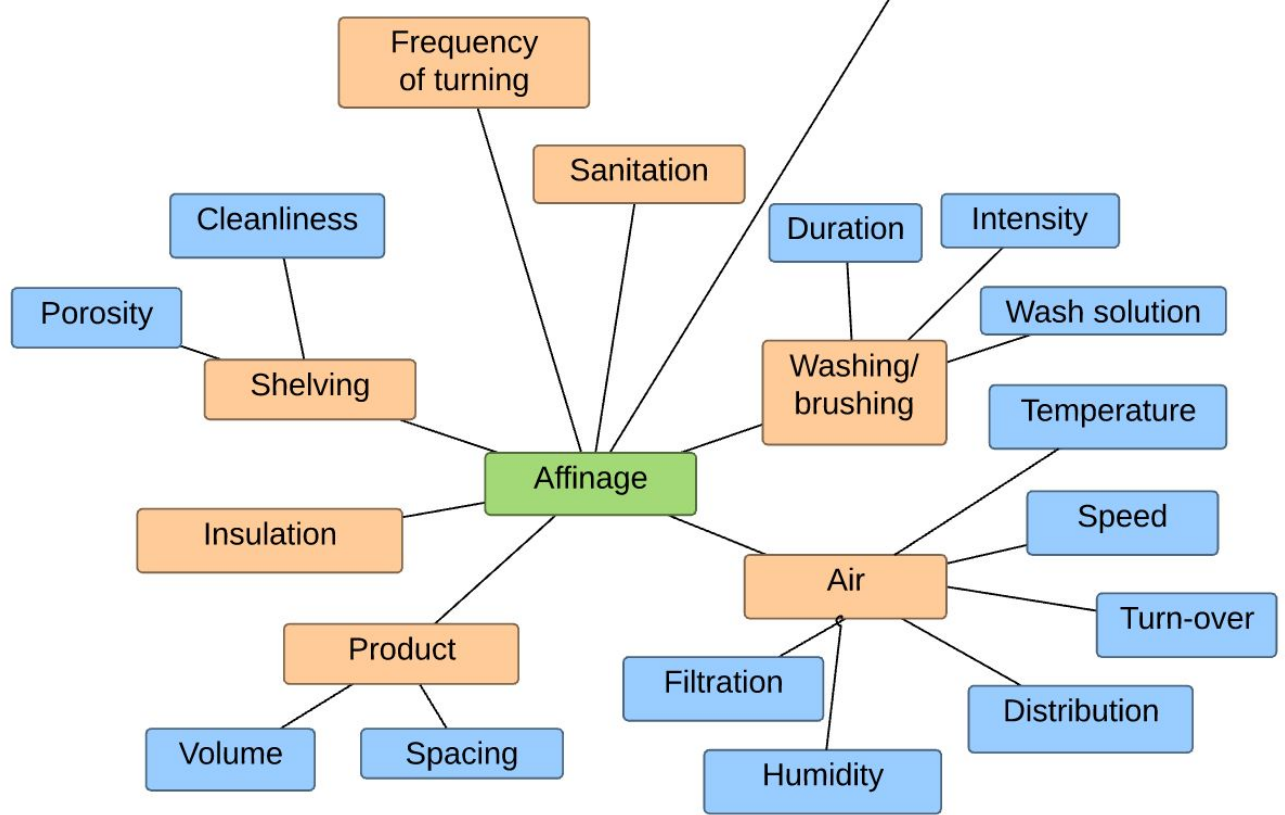
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Raw materials and labor

Equipment and Utensils

Facility Construction/Design

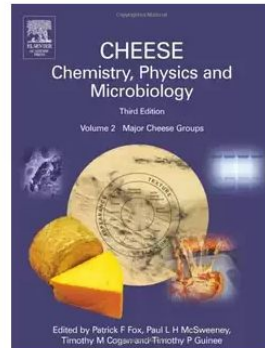
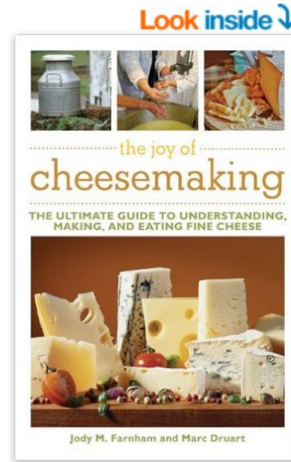
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



The Joy of Cheesemaking Paperback – April 6, 2011

by [Jody M. Farnham](#) (Author), [Marc Druart](#) (Author)



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ENGLISH

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

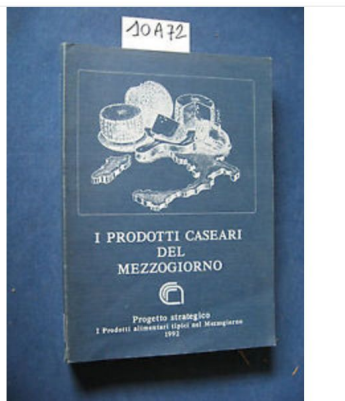
Expertise and Experience

Yield

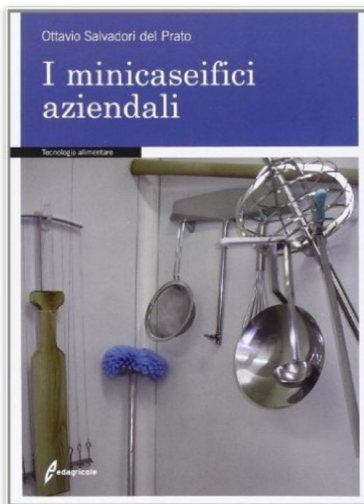
Shelf-Life

Communication Skills

Audience



Sposta il mouse sull'immagine per eseguire lo zoom



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di **Ottavio Salvadori Del Prato** (Autore)

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L'obiettivo primario di questa nuova edizione di Minicasei
di venire incontro alle aspettative del mercato di oggi, con
con quello del consumatore. Le novità in
moltissime. adeguando le informazioni c

ITALIAN

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

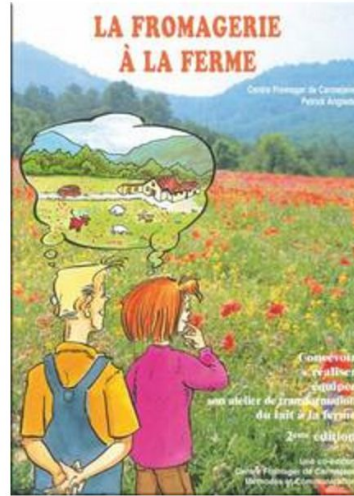
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



A l'heure de l'Union Européenne et de l'harmonisation des réglementations relatives aux ateliers de transformation du lait, cet ouvrage propose une méthode pour construire son atelier de transformation du lait à la ferme.

TECHNIPEL

Références :

N° Technipel : 717

Tarif : 32.10 €

Édition : Centre Fromager de Carmejane

Nombre de pages : 206

Format : 17x24

N° ISBN : 2951330308

Nature du produit : Livre

[Ajouter au panier](#)

FRENCH

Raw materials and labor
Equipment and Utensils
Facility Construction/Design
Expertise and Experience
Yield
Shelf-Life
Communication Skills
Audience



Source: “Cheese Moisture Control”, Dairy Australia, May 29, 2013. <http://goo.gl/4ZEtcP>

Less is more?

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Distribution

10+ days



Customer

1-2 Weeks



Shelf-Life

Production Make Sheet

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

PRODUCT MAKESHEET

COMPANY INFORMATION:

Business name: Food Safety Guides

CONTACT INFORMATION:

Phone #: (415)747-5927

Address: 804 Spring Street

Email: michael@foodsafetyguides.co

Sausalito, CA 94965

PRODUCTION INFORMATION:

Product: FONTINA

Cheesemakers: Michael Kalish

Make date: 1/17/2016

Batch or Lot #: 160117

SECONDARY INGREDIENT(S):

Rennet Type: Chy-max

Rennet (ml): 28

Rennet Lot #: 129292

Salt Lot #: 5392

CaCl3 (ml): 20

CaCl3 Lot #: 230

CULTURE(S):

Name #1: SACCO MT092 FET 10 UC

Amount (g): 40

Lot #: 12

Name #2: Danisco Choozit LB 10 UC

Amount (g): 50

Lot #: 253

Name #3: MVA

Amount (g): 37

Lot #: 5432

Name #4: n/a

Amount: n/a

Lot #: n/a

MILK COMPOSITION(S):

Type(s): Cow

Liters: 200

% Fat: n/a

% SNF: n/a

% Protein: n/a

MILK RECEIVING:

Time(s): 6:00 AM

Temp (°F): 39

Filtered: x Yes

No

Notes: 24 hour storage in bulk tank

ADDITIONAL ADDITIVES:

Name #1: n/a

Lot #: n/a

Name #2: n/a

Lot #: n/a

PROCESS STEPS	TARGET TEMP. (°C)	ACTUAL TEMP. (°C)	TARGET TIME	ACTUAL TIME	TARGET PH	ACTUAL PH	COMMENTS
---------------	-------------------	-------------------	-------------	-------------	-----------	-----------	----------

Communicability

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

PRODUCT MAKESHEET

COMPANY INFORMATION:				CONTACT INFORMATION:			
Business name:		Food Safety Guides		Phone #:		(415)747-5927	
				Email:		michael@foodsafetyguides.co	
						Address: 804 Spring Street	
						Sausalito, CA 94965	
PRODUCTION INFORMATION:				SECONDARY INGREDIENT(S):		CULTURE(S):	
Product:		FONTINA		Rennet Type:		Chy-max	
Cheesemakers:		Michael Kalish		Rennet (ml):		28	
				Rennet Lot #:		129292	
Make date:		1/17/2016		Salt Lot #:		5392	
Batch or Lot #:		160117		CaCl3 (ml):		20	
				CaCl3 Lot #:		230	
MILK COMPOSITION(S):				MILK RECEIVING:		ADDITIONAL ADDITIVES:	
Type(s):		Cow		Time(s):		6:00 AM	
Liters:		200		Temp (°F):		39	
% Fat:		n/a		Filtered:		x Yes	
% SNF:		n/a				No	
% Protein:		n/a		Notes:		24 hour storage in bulk tank	
				Name #1:		n/a	
				Lot #:		n/a	
				Name #2:		n/a	
				Lot #:		n/a	
				Name #3:		MVA	
				Amount (g):		37	
						Lot #: 5432	
				Name #4:		n/a	
				Amount:		n/a	
						Lot #: n/a	

PROCESS STEPS		TARGET TEMP. (°C)	ACTUAL TEMP. (°C)	TARGET TIME	ACTUAL TIME	TARGET PH	ACTUAL PH	COMMENTS
1	Add Culture	36	35	0:00:00	0:00:00	6.7	6.6	
2	Add Rennet	36	35	0:00:00	0:00:00	6.7	6.6	
3	Add Salt	36	35	0:40:00	1:35:00	6.4	6.3	
4	Heating & Stirring	46	46	1:15:00	1:45:00	6.3	6.2	
5	Extract / Press	18	20	1:25:00	2:30:00	6.2	6.1	
6	1st Turn (15 min)	18	19	2:25:00	2:50:00	6.1	5.9	
7	2nd Turn (15 min)	18	19	1:45:00	3:10:00	5.8	5.7	

Traceability

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience

Make date: 1/17/2016	Rennet Lot #: 129292	Lot #: 12
Batch or Lot #: 160117	Salt Lot #: 5392	Name #2: Danisco Choozit LB 10 UC
	CaCl3 (ml): 20	Amount (g): 50
	CaCl3 Lot #: 230	Lot #: 253
MILK COMPOSITION(S):	MILK RECEIVING:	ADDITIONAL ADDITIVES:
Type(s): Cow	Time(s): 6:00 AM	Name #1: n/a
Liters: 37	Filtered: x Yes	Name #2: n/a
% Fat: n/a		Name #3: n/a
% SNF: n/a	No	Lot #: n/a
% Protein: n/a	Notes: 24 hour storage in bulk tank	Amount: n/a
		Lot #: n/a

Processing targets and data

	PROCESS STEPS	TARGET TEMP. (°C)	ACTUAL TEMP. (°C)	TARGET TIME	ACTUAL TIME	TARGET PH	ACTUAL PH	COMMENTS
1	Add Culture	36	35	0:00:00	0:00:00	6.7	6.6	
2	Add Rennet	36	35	0:00:00	0:00:00	6.7	6.6	
3	Cutting (Kernel)	36	34	0:40:00	1:35:00	6.4	6.3	
4	Heating & Stirring	46	47	1:15:00	1:45:00	6.3	6.2	
5	Extract / Press	18	20	1:25:00	2:30:00	6.2	6.1	
6	1st Turn (15 min)	18	19	2:25:00	2:50:00	6.1	5.9	
7	2nd Turn (15 min)	18	19	1:45:00	3:10:00	5.8	5.7	
8	3rd Turn (1 hr)	18	18	2:45:00	3:30:00	5.6	5.5	
9	Salt (5 hr)	18	17	7:45:00	8:00:00	5.3	5.2	
10	Age	8 - 10, 90%	-	90 days	-	-	-	95%
Notes: A little slow on the acidification. Likely due to weather (29 degrees F. this morning).								

Communicability

Fontina Production Profile Chart (Time)

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

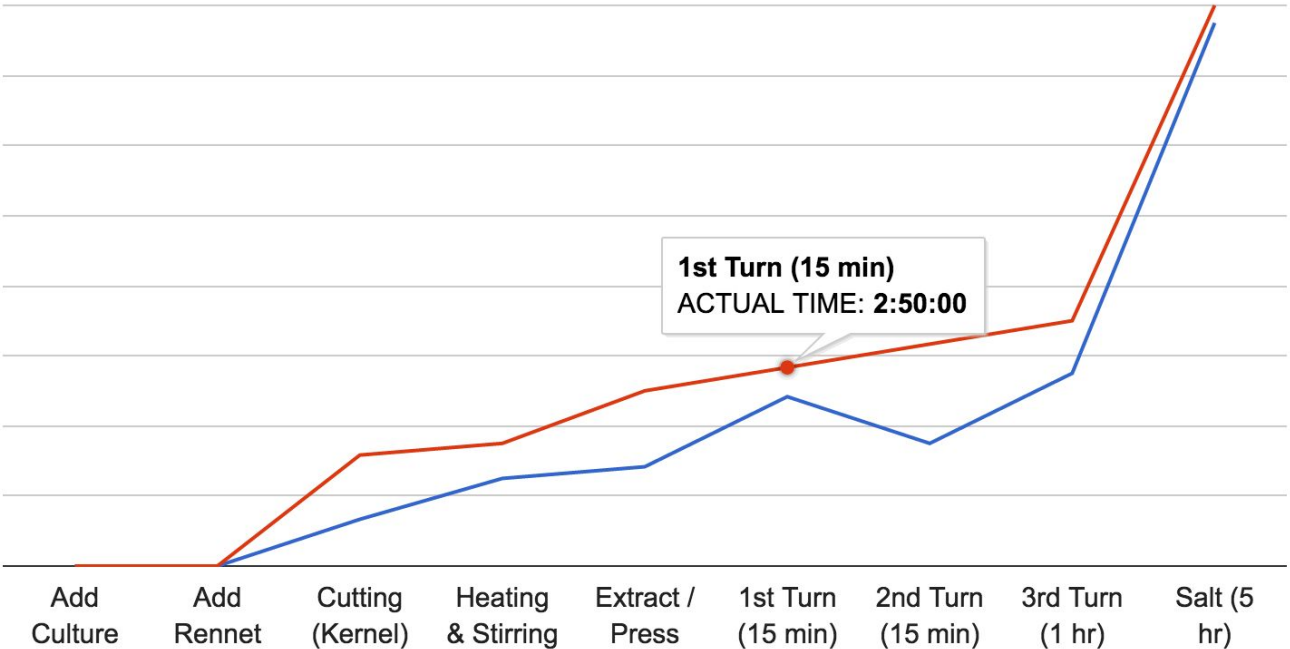
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Time

pH

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

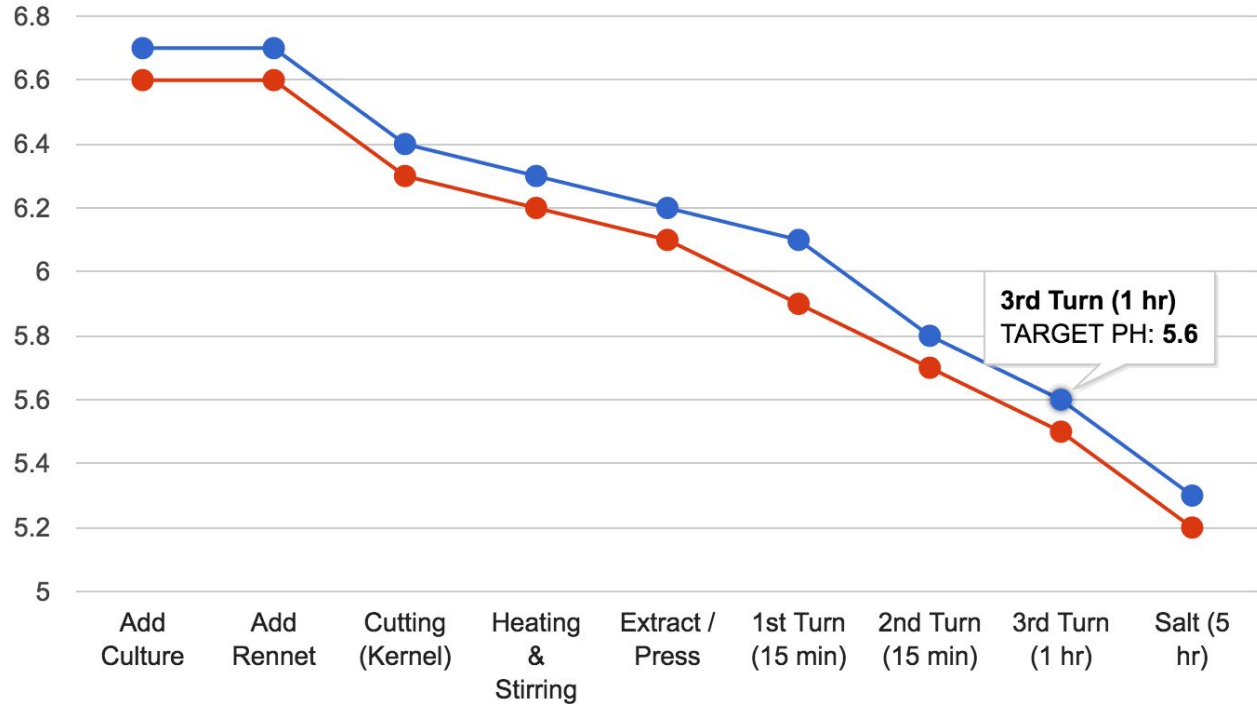
Yield

Shelf-Life

Communication Skills

Audience

Fontina Acidification Profile Chart (pH)



...Then Weight

Feedback

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Can you stomach feedback?

Focus Group

Raw materials and labor

Equipment and Utensils

Facility Construction/Design

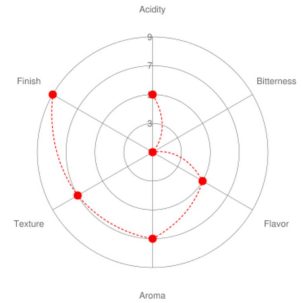
Expertise and Experience

Yield

Shelf-Life

Communication Skills

Audience



Retailer

Can you stomach feedback?

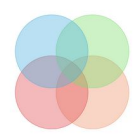
In-Sourcing

- On-site consultations
- Research & Design
- In-house training

- Co-Packing
- Lab Testing
- 3rd Party Logistics
- Marketing

Out-Sourcing

Making Business Sense



Food Safety Guides



Questions?

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