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Department of Education
National Capital Region
SCHOOLS DIVISION OFFICE
MARIKINA CITY

TVL - Home Economics

Bread and Pastry Production

First Quarter-Module 8
Storing Bakery Products and
Selecting Packaging Materials

Writer: Nelia G. Jimenez
Cover Illustrator: Christopher E. Mercado

Mayroong pag-asa dahil sa iyo, dahil sa inyong mga kabataan. Ang iyong mga ngiti, tawa, sigla, at likas na kabutihan ang inspirasyon naming mga magulang at guro upang pagbutihin ang pag-aalaga sa iyo, nang maipagpatuloy mo ang iyong pag-aaral at mga libangan.

Lagi ka sanang maging malusog, masayahin, masipag, at mapagmahal.

Ako ay sabik na maghihintay sa iyong pagbabalik sa paaralan sa hinaharap.

- Mayor Marcy

Paano iniiwasan ng ating pamilya ang COVID-19?

Inaalagaan ba natin ang ating kalusugan sa pamamagitan ng **sapat na tulog, ehersisyo, at masustansyang pagkain**?

Lagi ba tayong **naghuhugas ng kamay** gamit ang sabon at tubig o mga alcohol-based na produkto?

Pinapanatili ba natin ang kalinisan sa pamamagitan ng **palagiang pagdi-disinfect ng bahay**?

Binubuksan ba natin ang mga bintana para **makadaloy ang hangin** (natural ventilation)?

Iniiwasan ba natin ang **paglabas ng bahay at pagpapapasok ng bisita** kung hindi naman kailangan? Kung may lalabas man, tayo ba ay nagsusuot ng **face mask at face shield**?

Nagbabasa o nakikinig ba tayo sa mga **balita at bagong impormasyon** tungkol sa COVID-19?

Tinatandaan ba natin ang mga **karaniwang sintomas** ng COVID-19? At alam ba natin kung saan tatawag kung sakaling mayroong may sintomas sa pamilya?

Tinuturuan ba tayo ng ating mga magulang at nagiging mabuti ba silang modelo ng mga nabanggit na health at safety protocols?

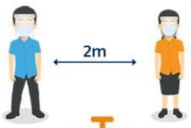
I Love Marikina

Make Marikina COVID-19 Free

Stay safe, stay healthy!

MGA PAALALA UPANG MAIWASAN ANG COVID-19

Laging magsuot ng face mask at face shield.



Practice Social Distancing
(Dumistansya ng 2 metro kapag nakikipag-usap)

Laging maghugas ng kamay at gumamit ng alcohol.

Kumain ng masustansyang pagkain at uminom ng maraming tubig.

Uminom ng bitamina.

Panatilihing malinis ang kapaligiran.

Manatili lamang sa bahay kung walang mahalagang aasikasuhin at panatilihing ligtas ang tahanan sa COVID-19.

Agad sumangguni sa inyong doktor o pinakamalapit na health center kapag nakaramdam ng mga palatandaan ng COVID-19.

Marikina COVID-19 Hotlines:

0926 626 3695
0927 456 6682
0961 470 3326
0961 470 3327

Make Marikina COVID-19 Free
Stay safe, stay healthy!

HiNDi PA TAPOS ANG LABAN SA COViD-19:
MGA PAALALA LABAN SA FAMiLY CLUSTER iNFECTiON

Iwasan ang hawaan sa pamilya, gawing ligtas ang tahanan. TANDAAN:

MARIKINA COVID-19 CALL CENTER
HOTLINE:
0926-626-3695
0927-456-6682
0961-470-3326
0961-470-3327

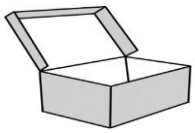
SWAB TEST

GAWiNG LiGTAS ANG TAHANAN.

- Huwag balewalain ang sintomas ng COVID-19
- Sundin ang quarantine protocols
- Huwag munang mag-dine in sa mga kainan/café
- Iwasan ang selebrasyon, inuman, at pagtambay
- Iwasan ang pulutong ng mga tao
- Huwag huhubarin ang face mask kapag nakikipagusap at panatilihin ang 2 meters na distansya
- Iwasan magpapasok ng mga bisita na hindi essential sa loob ng bahay
- Palaging maghugas ng kamay

i love Marikina

Hindi kaya ng pamahalaan lamang.
Magkakasama nating talunin ang COVID-19 sa Marikina.
PARA SA LiGTAS NA MARiKiNA



What I Need to Know

This module was designed and written with you in mind. It is here to help you develop knowledge, skills, and attitudes in the performance of Bread and Pastry tasks. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

Quarter I – L.O. 3 Store bakery products

After going through this module, you are expected to:

1. discuss the different equipment for storing bakery products
2. store bakery products according to established standards and procedure
3. select appropriate packaging materials for the preservation of product freshness and eating characteristics.

Baking Terminologies

As you wish to pursue baking as a career, you should familiarize yourself with the common preparation and baking terminologies that come across in the process.

Airtight - tightly sealed so that no air can get in or out.

Cold Storage - the state of being kept in a cold place for later use.

Corrosion - is lowly break apart and destroy metal through chemical process.

Perishable - easily to spoil or decay quickly**.**

Shelf Life - the length of time that food may be stored and still be good to eat.
Store - to put in a place where it can be kept safely

Thaw - to return to a normal temperature after being frozen.

What I Know

Encircle at least five (5) storing techniques that you can find in word puzzle.

R	C	H	I	L	L	E	R	Y	I	Z	B	F
M	E	X	I	N	G	B	O	W	L	Z	M	R
G	E	F	P	F	R	Y	L	S	A	S	G	E
W	R	W	R	A	P	P	I	N	G	T	W	E
I	S	A	S	I	P	T	I	M	E	R	I	Z
C	O	T	D	S	G	O	R	A	G	E	R	E
E	F	T	R	E	G	E	G	X	A	I	E	R
C	O	L	D	S	T	O	R	A	G	E	W	A
H	B	Y	B	C	A	K	I	A	M	E	H	B
I	E	T	A	O	V	E	N	A	T	R	I	E
S	D	I	G	B	R	E	A	D	R	O	S	D
P	A	C	K	A	G	I	N	G	C	V	R	S

Lesson 8 Storing bakery products and Selecting packaging materials

In this module, the students will provide knowledge understanding and hands-on activities on how to store bakery products and the proper way to select the packaging that appropriate to the product.

Bakers to finalize the products should follow the proper guidelines and techniques in storing the baked goods and selecting the appropriate packaging materials, to make it more enticing and attractive to the consumer as well as to the customer.

What's In

To prolong the shelf life of the bake products you have to store it properly. Proper guidelines and techniques should follow accordingly based on the standard requirement. Another thing that helps to promote the storing quality is through the use of appropriate materials for packaging.

Notes to the Teacher

In this lesson, the learners are expected to perform the proper way of storing and selecting appropriate packaging materials for bakery products according to appropriate conditions, but always remind them to practice safety measures, sanitation at all times.

What's New

Watch the video clip on how to store bread *https://www.youtube.com/watch?v=QH40-ZBkmSQ*. Write down your reaction in the space below.

_____
_____
_____
_____
_____
_____

How Well Did You Perform?

Your performance will be rated using the rubrics below.

Rubrics for Scoring:

Criteria	5	3	1
Level of understanding	The presentation was very much understood	The presentation was slightly understood	The presentation was not understood
Degree of importance	Importance of the presentation was stated at the fullest degree	Importance of the presentation was stated at the moderate degree	Importance of the presentation was not clearly stated.
Maximum score			

Score Equivalent

7 - 10	Very good
4 - 6	Good
1 -3	Fair

What is It

Storing Bakery Products

Whether you're keeping baked goods at room temperature or freezing them, make sure they're tightly wrapped or in an airtight container.

Baked Goods	Pantry	Freezer	Refrigerator
Bagels	2 days	3 months	
Baguette	1 day	3 weeks	
Biscotti	2 weeks	6 months	
Biscuit dough, store-bought in can		Do not freeze	
Bread, bakery loaf	2 days	3 weeks	
Bread, sandwich loaf	4 days	3 months	2 weeks
Brownies	2 weeks (supermarket); 5 days (bakery and homemade)	3 months	1 month
Cookie dough, homemade		3 months	5 days
Cookies, bakery and homemade	1 week	3 months	2 weeks
Muffins	3 days	2 months	1 week
Piecrusts, homemade		Freezer: 3 months	3 days
Pies, dairy such as Key lime pie, banana cream pie, and cheesecake		Do not freeze.	4 days
Pita bread	5 days	3 months	1 week
Tortillas,	1 week	3 months	2 week

https://www.realsimple.com/food-recipes/snack-storage

Guidelines in Storing bakery Products

1. Package your bake products properly.
2. A product whether baked, cooked, or uncooked, is best stored by quick to freezing.
3. Staling occurs faster in a refrigeration that in a freezer. Because the temperature of the refrigerator (6 °C – 8 °C) is higher than the freezer (0 °F/– 16°C).
4. Thaw baked products as soon as you need them.
5. All rolls are ideally stored at room temperature between 75 °F to 85 °F.
6. Soft – crusted bread, rolls, and sweet rolls should remain in their moisture and vapor- proof wrappers to avoid drying.
7. Cakes and pastries should be stored in their boxes to prevent drying at room temperature.

8. Doughnut cakes types should be store in their boxes to prevent drying at room temperature.
9. Remember that a product is only as fresh as when you put in a refrigerator, or freezer.
10. Wrap the products properly before freezing.
11. Quick freeze baked products
12. After thawing, follow the rule: Once defrosted do not freeze.
13. Thaws rapidly as possible to prevent moisture setting into the baked products as this cause soggy spots.

https://www.iddba.org/training-materials/pdfs/jg-bakerystorage.aspx?ext=.pdf

Storing techniques

1. Wrapping - to draw, fold, and cover a bakery product.
2. Packaging Material - used to package bakery products like the box, plastic, container.
3. Cold Storage - the process of preventing perishable food on a large scale at a low temperature or above the freezing point (0°C or 32°F).
4. Chilling - method in which raw or processed food is cooled to a temperature between (0°C - 5°C).
5. Freezing - subjecting food to a temperature below freezing point (0°C or 32°F).
6. Refrigerator - an appliance to make or keep something, especially food or drink, cold so that it stays fresh usually in a fridge.

Packaging has been with humans for thousands of years in one form or the other. Packaging dates back to when people first started moving from place to place.

Food Packaging - enclosing the food in material for physical, chemical, biological protection, and tampering resistance; It provides nutrition information on the food being consumed.

Packaging aims are to keep the food in good condition until it is sold and consumed, and to encourage customers to purchase the product. Correct packaging is essential to achieve these objectives.

Packaging should provide the correct environmental conditions for food starting from time food is packed until the time of consumption. A good package should therefore, perform the following functions:

Provide a barrier against dirt and other contaminants thus keeping the product clean.

- Prevent losses. For example, packages should be securely closed to prevent leakage.
- Protect food against physical and chemical damage, such as the harmful effects of air, light, insects, and rodents. Each product has its own needs.

- Help the consumers to identify the food and instruct them on how to use it correctly.
- Persuade the consumers to purchase the food.
- Cluster or group together small items in one package for efficiency.
- Marketing. The packaging and labels can be used by marketers to encourage potential buyers to purchase the product
- Correct packaging prevents any wastage which may occur during transportation and distribution.

Packaging Categories

1. primary packaging - surrounds the product and features labeling.
2. secondary packaging - ease of manual movement of products.
3. transit packaging - wrapping used to bundle the boxes or crates for transport and distribution.

Transit packaged products are placed in shipping containers for long-distance transportation and distribution.

Selecting the right material

Material selection is based on:

- technical properties (strength, flexibility, etc.)
- fitness for purpose (moisture barrier, cushioning, etc.)
- availability
- manufacturing capability
- cost
- environmental impact
- regulations

Types of Packaging Materials

From skins, leaves, and bark, tremendous progress has been made the development of diversified packaging materials and in the packaging equipment.

In general, packaging materials may be grouped into:

1. rigid (wood, glass, metals, and hard plastics)
2. flexible structures (Plastic film, foil, paper, and textiles)

Plastics

The use of various plastics for containing and wrapping food depends on what is available. Plastics are extremely useful as they can be made in either soft or hard forms, as sheets or containers, and with different thicknesses, light resistance, and flexibility. The filling and sealing of plastic containers are similar to glass containers.

Plastics are relatively cheap, light, easily processed and shaped, and easy to seal. Two major drawbacks are their permeability to gases, and vapors, and the possibility of their interacting with the product.

For package sterilization, the material of choice is polypropylene (PP), which is used as the outer and inner plies of the laminate with polyvinylidene chloride (PVDC) as the middle layer to provide an oxygen barrier.

Flexible films are the most common form of plastic. Generally, flexible films have the following properties:

- Its cost is relatively low.
- It has good barrier properties against moisture and gases.
- It has heat wet and dry strength.
- It is easy to handle and convenient for the manufacturer, retailer, and consumer.
- It adds little weight to the product.
- It fits closely to the shape of the product, thereby wasting little space during storage and distribution.

Migration from plastics is mainly due to:

1. residual components and reactants from the manufacturing process
2. compounds formed during conversion into packaging materials and packages,
3. additives incorporated for functionality
4. adhesives used during conversion.

Migration in plastics packaging refers to the transfer of compounds from the plastic to the food product. This might be by leaching or diffusion.

Direct contact between plastic and a food product can result in components of the packaging being leached out into the product, changing the flavors of the food.

Metals (Steel, Tin, Aluminum)

Steel, tin, and aluminum are used mainly for canned foods and beverages. The most common use of metals for packaging is in tin-coated steel and aluminum cans. The principal advantages of metal cans are their strength providing mechanical protection, effective barrier properties, and resistance to high temperatures providing stability during processing.it is an advantage for light-sensitive products. The critical concepts of canning are to ensure that the product in the can is stable and that the seal provided by the metal is complete.

The **steel** can provide almost perfect barrier protection and, due to its structural strength and ability to handle pressure, can be retorted (cooked under pressure) after sealing

Aluminum is used increasingly for canning due to its lightness, low cost, corrosion resistance, availability, and recyclability. Aluminum is also used extensively in many non-canning applications such as foil packaging, caps, convenience food containers and lids, yogurt tub lids, kitchenware, and laminates.

Foil may be used for formed or semirigid containers. Aluminum foil is difficult to use on modern fast packaging equipment because of creases, tearing, and marking effects.

Disadvantage in that contents are: invisible, heavy mass, high cost, and tendency to interact with contents and environment (internal and external corrosion)

Metal–Food Interaction:

Corrosion is the destructive attack on a metal through the chemical or electrochemical reaction with the environment. Since steel corrodes rapidly in the presence of acidic substances, the tin acts as a barrier. Some cans are lacquered internally for high-acid products (pH < 3) or for products that change color in the presence of tin. Foods that contain sulfur produce a blackening of the tin.

Corrosion products in food cans are limited to three metals: tin, iron, and lead, which are liable to dissolve from the container. This only **lead** is toxic and cumulative in body tissues, hence a hazard.

Glass

Glass containers used to be and still are considered a prestigious means of packaging, and services for the most expensive wines, liqueurs, perfumes, and cosmetics. Glass has many properties which make it a popular choice as a packaging material:

- Glass can able to withstand heat treatments such as pasteurization and sterilization.
- It does not react with food.
- It protects the food from crushing and brushing.
- It resists to moisture, gases, odors, and microorganisms.
- It is re-usable, re-sealable and recyclable.
- It is transparent, allowing products to be displayed. Colored glass may be used either to protect the food from light or to attract customers.

Disadvantages of using Glass

- fragility, heavy mass, and high energy requirements during manufacturing.
- Glass is not used for frozen products, or ground or roasted coffee because of breakage costs and the difficulty of vacuum flushing.

Preparation of Glass Containers

- inspection
- washing
- rinsing
- sterilization
- sealing and capping
- cooling

Timber, Cardboard, and Papers

Pulp products are widely used in food packaging in the form of different kinds of paper, paperboard, laminates, and corrugated board.

Paper

Paper is an inexpensive packaging material. It is however highly absorptive, and is fairly easily torn. The main disadvantage is its high sensitivity to moisture, reflected in close dependence on the relative humidity of the environment.

Timber

Wood is commonly used in box construction, but the use of wood for individual packaging (such as cigars) has decreased since the advent of plastics. Examples of timber for packaging are cases, boxes, and casks for long-distance transport.

Cardboard

Choosing a carton for a specific job depends on the capacity of the carton to meet the requirements for that job.

Biodegradable material for packaging

Biodegradation is the process by which carbon-containing chemical compounds are decomposed in the presence of enzymes secreted by living organisms.

Acceptable bioplastics are listed below:

1. Cellulose
2. Starch
3. Polyhydroxybutarate (PHB)
4. Polyhydroxyalkanoate biodegradable (PHA) plastics:

Labeling and Marking

Label – is a printed matter that appears on the package.

Marking – means putting some identification mark on the package during transportation and shipping.

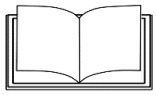
Types of labels

1. Brand label – trademark or logo
2. Grade label – the quality of the product
3. Informative label – product use, care, and performance

What Must Appear on the Label?

The following must appear on the label:

- The Name under which the product is sold
- List of ingredients
- Quantity of certain ingredients
- Net quantity
- Date of minimum durability
- Any special storage instructions or conditions of use
- Name or business name
- Address of the manufacturer or package
- Place of origin of the foodstuff if its absence might mislead the consumer to a material degree
- Instruction for use where necessary



What's More

Identify what is asked in the question. Write the answer on the space provided before the number.

_____1. A packaging that has a direct contact with the food and it includes the labelling.
_____2. It is popular choice as a packaging material that withstand in heat treatment.
_____3. An inexpensive packaging that highly absorptive and easily torn.
_____4. A wrapping used to bundle the boxes or crates for long distance transport, and shipping.
_____5. It enclosing the food in a material for physical, chemical, biological protection and tampering resistance.

What I Have Learned

In two sentences, answer what is being asked in the question. (5 Points each)

1. Discuss how will you prolong the shelf life of a bakery products.

   _____
   _____
   _____

2. Which technique is needed to make the bakery products last for months? Explain your answer.

   _____
   _____
   _____

3. How will you advertise your product? Explain your answer.

   _____
   _____
   _____

How Well Did You Perform?

Your performance will be rated using the rubrics below.

Rubrics for Scoring:

1	Able to discuss comprehensively the significant task.
2	Able to discuss appropriately the task with 1 or 2 errors.
3	Able to discuss appropriately the significant task with 3 to 5 errors.
4	Able to discuss appropriately the significant task with 6 to 8 errors.

Scale	Description	Points
4	Excellent	93 - 100
3	Good	86 - 92
2	Fair	79 - 85
1	Poor	78 - below

What I Can Do

Make a packaging using any available resources/materials at home.

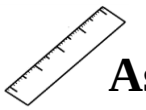
How Well Did You Perform?

Your performance will be rated using the rubrics below.

Rubrics for Scoring:

4	Can perform this skill without supervision and with initiative and adaptability to problem situations.
3	Can perform this skill satisfactorily without assistance or supervisions.
2	Can perform this skill satisfactorily but requires some assistance and or supervision.
1	Can perform this skill satisfactorily but requires considerable assistance and or supervision.

Scale	Description	Points
4	Excellent	93 - 100
3	Good	86 - 92
2	Fair	79 - 85
1	Poor	78 - below



Assessment

List down the information that must appear in a product label.

1.
2.
3.
4.
5.

Additional Activities

Online Learner: Make a logo/label using any applications. Attach it in the prepared product packaging.

Offline Learner: Draw or lay-out a product logo/label. Color it to enhance the appearance.

How Well Did You Perform?

Your performance will be rated using the rubrics below.

Rubrics for Scoring:

1	Able to discuss comprehensively the significant task.
2	Able to discuss appropriately the task with 1 or 2 errors.
3	Able to discuss appropriately the significant task with 3 to 5 errors.
4	Able to discuss appropriately the significant task with 6 to 8 errors.

Scale	Description	Points
4	Excellent	93 - 100
3	Good	86 - 92
2	Fair	79 - 85
1	Poor	78 - below

Answer Key

What I Know

1.Chiller

2.Refrigerator

3.Cold Storage

4. Freezer

5. Packaging

6. Wrapping

What's More

What's more:

Identification:

1.Primary packaging 2. Glass

3. Paper

4. Transit Packaging

5. Packaging

Assessment

1.Name under which the product is sold

2.List of ingredients

3.Quantity of certain ingredients

4.Net quantity

5.Date of minimum durability

6.Any special storage instructions or conditions of use

7.Name or business name

8.Address of the manufacturer or package

9.Place of origin of the foodstuff if its absence might mislead the consumer to a material degree

10.Instruction for use where necessary

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Development Team of the Module

Writer: Nelia G. Jimenez (SHS TIII-MHS)

Editors:
Rosalina S. Cruz (MT I-PHS)
Sheilah G. Milla (Dept. Head-FHS)
Nerissa S. Estrella (ASP II/OIC-MNHS)
Mary Grace T. Frondozo (TIII-THS)

Internal Reviewer: Joseph T. Santos (Education Program Supervisor-EPP/TLE)

Layout Artist: Khrycys G. Olairez (TI, BNHS)

Management Team:

Sheryll T. Gayola
Assistant Schools Division Superintendent
OIC, Office of the Schools Division Superintendent

Elisa O. Cerveza
Chief, Curriculum Implementation Division
OIC, Office of the Assistant Schools Division Superintendent

Joseph T. Santos
Education Program Supervisor – EPP/TLE

Ivy Coney A. Gamatero
EPS – Learning Resource Management and Development System

For inquiries or feedback, please write or call:

Schools Division Office-Marikina City
Email Address: sdo.marikina@deped.gov.ph

191 Shoe Ave., Sta. Elena, Marikina City, 1800, Philippines

Telefax: (02) 682-2472 / 682-3989