Food and beverage service -Level-I

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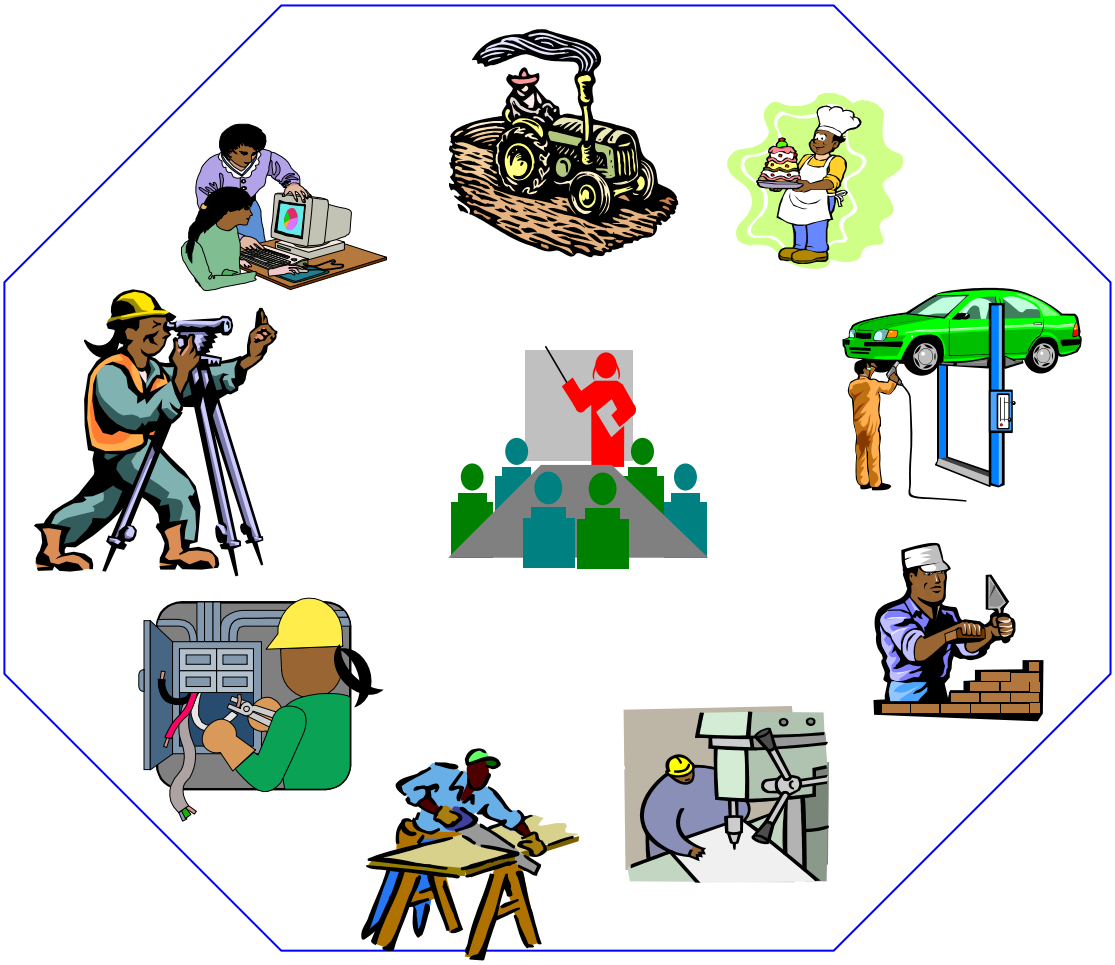

Module Title: **Receiving and Store Food and Beverage Items**

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Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Checking incoming supplies against specifications
- Identifying, recording and reporting to the appropriate person.
- Inspecting damage supply requirements.
- Managing excess tock

This guide will help you to clutch the learning outcomes stated in the cover page. Particularly, upon completion of this learning guide, you will be able to:

- Check incoming supplies against specifications
- Identify, recording and reporting to the appropriate person.
- Inspect damage supply requirements.
- Manage excess tock

Learning Instructions:

1. Read and comprehend the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask the correction key (key answers) from your trainer or you can request your trainer to correct your work. (You have to get the key answer only after you finished answering the Self-checks).

Information Sheet 1- Check incoming supplies against specifications

1.1. Product specification

Just as it is not possible to determine inventory levels or items to be purchased without standardized recipes, it is not possible to manage costs where purchasing is concerned without the use of product specifications, or "specs." A product specification is simply a detailed description of an ingredient or menu item. A specification is a way for you to communicate in a very precise way with a vendor so that your operation receives the exact item requested every time.

A foodservice specification generally consists of the following information:

1. Product name or specification number
2. Pricing unit
3. Standard or grade
4. Weight range/size
5. Processing and/or packaging
6. Container size
7. Intended use
8. Other information such as product yield

PRODUCT NAME

This may seem self-explanatory, but, in reality, it is not. Mangos are a fruit to those in the southwestern United States, but may mean a bell pepper to those in the Midwest. Bell peppers do not just come in green, their most common color, but can also be purchased in yellow and red forms. Thus, the product name must be specific enough to clearly and precisely identify the item you wish to buy.

Many canned hams are pear shaped, but a Pullman canned ham is square. You may be requesting 100 percent maple syrup when you place a syrup order, but your vendor could assume "maple-flavored" syrup is the item you desire. Purchasing

food becomes even more difficult when you realize that, especially in the area of meats and seafood, different regions in the country may have different names for the same product.

When developing the product specification, you may find it helpful to assign a number to the item as well as its name. This can be useful when, for example, many forms of the same ingredient or menu item may be purchased. A deli-restaurant may use 10 to 20 different types of bread, depending on the intended use of the bread; thus, in our product specification example, bacon, which this operation uses in many forms, has both a name and a number assigned to the specification. The same may be true with a number of items such as cheese, which may come in a brick, sliced, shredded, or a variety of other forms as well as several types (Colby, cheddar, Swiss, etc.).

PRICING UNIT

A pricing unit may be established in terms of pounds, quarts, gallons, cases, or any other commonly used unit. Parsley, for example, is typically sold in the United States by the bunch. Thus, it is also priced by the bunch. how much is a bunch? You must know grapes are sold by the “lug.” Unless you are familiar with the term, you may not be able to buy that product in an effective way. Again, knowledge of the pricing unit, whether it is a gallon, pound, case, bunch, or lug, is critical when developing a product specification.

STANDARD OR GRADE

Many food items are sold with varying degrees of quality or desirability. Because that is true, the U.S. Department of Agriculture, Bureau of Fisheries, and the Food and Drug Administration have developed standards for many food items. In addition, grading programs are in place for many commonly used foodservice items. Trade groups such as the National Association of Meat Purveyors publish item descriptions for many of these products. Consumers also are aware of many of these distinctions. Prime beef, in the consumer’s mind, may be superior to choice beef. In a similar manner, you may wish to purchase and serve Coca-Cola rather than a lower-cost generic fountain soda. When developing a specification, a specific

brand name or product source may be included in this section. You should be cautious, however, about specifying a brand name unless it is actually critical to your operation. Unless several vendors are able to supply you with the product you need, the price you may pay to the vendor who does have that item may be too high.

WEIGHT RANGE/SIZE

Weight range or size is important when referring to meats, fish, poultry, and some vegetables. In our standardized recipe example of roast chicken, the quarters were to have come from chickens in the 3- to 3 1/2-pound range. This will make them very different than if they came from chickens in the 4- to 4 1/2-pound range. In the case of products requiring specific trim or maximum fat covering, that should be designated also, such as 10-ounce strip steak, maximum tail 1 inch, fat covering 1/2 inch.

Four-ounce hamburger patties, 16-ounce T-bones, and 1/4-pound hot dogs are additional examples of items of the type that require, not a weight range, but an exact size. It is important to note that while the operator may specify such a specific weight, it is likely that he or she will pay a premium for such accuracy, especially in items such as steaks, where the supplier's ability to perfectly control prod- uct weight is somewhat limited.

Count, in the hospitality industry, is a term that is used to designate size. For example, 16- to 20-count shrimp refers to the fact that, for this size shrimp, 16 to

20 of the individual shrimp would be required to make 1 pound. In a like manner,

30- to 40-count shrimp means that it takes 30 to 40 of this size shrimp to make a pound. Many fruits and vegetables are also sold by count. For example, 48-count avocados means that 48 individual avocados will fit in a standard case. In general, the larger the count, the smaller the size of the individual food items.

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PROCESSING AND/OR PACKAGING

Processing and packaging refers to the product's state when you buy it. Apples, for ex- ample, may be purchased fresh, canned, or frozen. Each form will carry a price appropriate for its processed or packaged state. It is important to note that the term "fresh" is one with varying degrees of meaning. Fish that has been frozen and then thawed should be identified as such. Packaging is also extremely important when determining product yield. For example, 3 pounds of canned corn will not yield the same number of 3-ounce servings as 3 pounds of fresh ear corn. Fresh fruits and vegetables may be of excellent quality and low in cost per pound, but the effective foodservice operator must consider actual usable product when computing the price per pound. Also, the labor cost of washing, trimming, and otherwise preparing fresh products must be considered when comparing their price to that of a canned or frozen product. The U.S. food supply is one of great variety and quality. Food can come packed in a large number of forms and styles, including slab packed, layered cell packed, fiberboard divided, shrink packed, individually wrapped, and bulk packed. While it is beyond the scope of this text to detail all of the many varieties of food processing and packing styles, it is important for you to know about them. Your vendors will be pleased to help explain to you all the types of item processing and packaging they offer.

CONTAINER SIZE

This term refers to the can size, number of cans per case, or weight of the container in which the product is delivered. Most operators know that a 50-pound bag of flour should contain 50 pounds.

Intended use

Different types of the same item are often used in the same foodservice operation, but in a variety of ways. Consider, for example, the operator who uses strawberries in a variety of ways. Obviously, perfect, large berries are best for chocolate-dipped strawberries served on a buffet table. Less-than-perfect berries, however, may cost less and be a perfectly acceptable form for sliced strawberries on strawberry shortcake. Frozen berries may make a good choice for a baked strawberry pie and would be much more cost effective. Breads, milk products, apples, and other fruits are additional examples of foods that come in a variety of forms; this requires you to know that the "best" form of a food product is not necessarily the most expensive.

OTHER INFORMATION SUCH AS PRODUCT YIELD

Additional information may be included in a specification if it helps the vendor understand exactly what you have in mind when your order is placed. An example is product yield. Product yield is simply the amount of product that you will have remaining after cooking, trimming, portioning, or cleaning. Product yield will help you and your vendor determine how much product you will have to purchase in order to have the desired product quantity after waste is removed.

It is very important to note that the product specification determines neither the "best" product nor the product that costs the least. It is the product that you have determined to be the most appropriate product for its intended use in terms of both quality and cost.

A product specification that is written too loosely can be a problem because the needed level of item quality may not be delivered. On the other hand, if your product specifications are too tight, that is, they are overly and unnecessarily specific, too few vendors may be able to supply the product, resulting in your paying excessively high costs for that item.

1.2. Incoming supplies and specification

As we employ product specification while purchasing supplies, one has to check this specification or detail description of supplies up on receiving.

Self-Check -1	Written Test

Choose the best answer. 3 pts each

1._____is a detailed description of an ingredient or menu item used to specify items to purchase or receive.

A. specification D. standardization C. Production D. All

2. Specification consists one of the following information

A. Pricing unit B. Standard or grade C. Weight range D. All

3. _____ simply the amount of product remained after cooking, trimming, portioning, or cleaning.

A. Product name B. Product yield C. Range D. All

4. Product specification indicate the best quality and price of a product'

A. True B. False

5. Checking specification while receiving food and beverage items is crucial to get the desired product.

A. True B. False

Answer the following question!

Note: **Satisfactory rating – 15 points** **Unsatisfactory - below 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information Sheet 2: Undertaking temperature check and identifying any variations and discrepancies.

2.1 Checking temperature

In order to be able to prove that you are doing the right thing and checking to make sure that food is delivered at the correct temperatures, **you will need to keep a log** as documentation of having done this task. I recommend you use an infrared thermometer as it makes this test a lot faster and easier.

(1) Food while being transported, stored, prepared, displayed, served or sold at a food service establishment shall be protected
from dust, flies, rodents or other vermin, toxic materials, unclean equipment and

utensils, unnecessary handling, coughs and sneezes, flooding by sewage, overhead leakage and all other sources of contamination. Different types of raw animal products such as beef, fish, lamb, pork or poultry shall be separated during storage and processing by use of different containers, partitions, shelves, or by cleaning and sanitizing the equipment between product use. Raw food products shall be physically separated from ready-to-eat food products during display or storage by storing the raw products below ready-to-eat food products or using other approved methods.

(2) Perishable food shall be stored at such temperatures as will protect against spoilage. All potentially hazardous food shall be kept at safe temperatures, 41 degrees Fahrenheit or below and 140 degrees Fahrenheit or above, except during necessary periods of preparation and service.

(3) Potentially hazardous foods which are to be served without further cooking, such as ham salad, chicken salad, egg salad, shrimp salad, lobster salad, tuna salad, potato salad and other mixed foods containing potentially hazardous ingredients or dressings shall be prepared from chilled products with a minimum of manual contact. The surfaces of containers and the utensils used for preparation and subsequent storage shall have been effectively cleaned and sanitized immediately prior to use. Potentially hazardous food requiring refrigeration after preparation shall be rapidly cooled to an internal temperature of 41 degrees Fahrenheit or below.

Guide for the temperature of Incoming Food

All food that enters a food establishment must be inspected prior to placement in the appropriate storage unit. Inspection criteria usually are based on temperature of the food, condition of the package, and sensory characteristics of the food. The following guidelines are commonly used to determine if food should be accepted.

MEAT — includes beef, pork, mutton, lamb, and goat

- *Temperature* — 41 degrees F or colder
- *Package* — intact, clean, and includes USDA inspection stamp
- *Sensory characteristics* — The color of beef should be bright, cherry red and vacuum packaged beef will appear purple; lamb should be light red; pork should have light pink meat. The texture of meat should be firm. There should be no odor.

POULTRY — includes chicken, turkey, duck, goose, guinea, and any migratory waterfowl, game bird, such as pheasant, partridge, quail, grouse, or guinea, or pigeon or squab

- *Temperature* — 41 degrees F or colder
- *Package* — intact, clean, and includes USDA inspection stamp
- *Sensory characteristics* — No discoloration, such as the presence of green or purple around the neck. The texture should be firm and there should be no odor.

FISH — includes all fish except for shellfish and crustacea

- *Temperature* — 41 degrees F or colder
- *Package* — intact and clean. If packed in ice the fish must be surrounded by crushed, self-draining ice
- *Sensory characteristics* — Bright red gills, firm flesh, and a mild ocean or seaweed smell. The eyes should appear bright, clear, and full

SHELLFISH — includes live or shucked clams, oysters, mussels, and scallops

- *Temperature* — 45 degrees F or colder
- *Package* — intact, clean, and if unshucked must include the shellstock identification tag
- *Sensory characteristics* — Mild ocean or seaweed smell. The shells should be closed and unbroken.

CRUSTACEA — includes shrimp, crab, and lobster

- *Temperature* — 41 degrees F or colder unless alive
- *Package* — intact, clean
- *Sensory characteristics* — Mild ocean or seaweed smell. The shells of lobsters and crabs should be hard and heavy. If the tail of a lobster does not curl when picked up, it is a sign that it is dead and so should be rejected.

EGGS AND EGG PRODUCTS — includes shell eggs, pasteurized liquid whole eggs, and egg substitute. This does not include dry egg whites.

- *Temperature*– 45 degrees F or colder
- *Package* — intact, clean, and includes the USDA inspection stamp
- *Sensory characteristics* — No odor and the shells are clean and unbroken

MILK AND MILK PRODUCTS — includes milk, butter, buttermilk, yogurt, cheese

- *Temperature* — 41 degrees F or colder
- *Package* — intact, clean, and is labeled “pasteurized.”
- *Sensory characteristics* — no undesirable odor or curdling

FRESH FRUITS AND VEGETABLES — includes all fresh produce that is either whole or cut. This does not include produce that has been processed, such as canned or dried

- *Temperature* — varies. *Produce Facts,* a series of fact sheets published by the University of California Postharvest Technology Research and Information Center, contains information about optimum temperature other relevant information. Select Produce Facts to access this information.
- *Package* — clean and free of pests

- *Sensory characteristics* — no molding, cuts, mushiness, discoloration, wilting, or undesirable odors

REFRIGERATED PROCESSED FOODS THAT ARE POTENTIALLY HAZARDOUS

- *Temperature* — 41 degrees F or colder
- *Package* — intact, clean, and dated with use by date
- *Sensory characteristics* — no undesirable odors

FROZEN PROCESSED FOODS THAT ARE POTENTIALLY HAZARDOUS — includes food such as burritos, gravy, ice cream

- *Temperature* — 0 degrees F or colder; ice cream at 6-10 degrees F
- *Package* — intact, clean, and dated with use by date
- *Sensory characteristics* — no undesirable odors

VACCUM PACKAGED FOODS — includes modified atmosphere packaged foods and sous vide packaged food

- *Temperature* — 41 degrees F unless specified otherwise by the manufacturer
- *Package* — intact, clean, and dated with use by date
- *Sensory characteristics* — no undesirable odors or colors

CANNED FOODS

- *Temperature* — room temperature
- *Package* — clean, not swollen or severely dented, not leaks, label intact
- *Sensory characteristics* — no undesirable odors upon opening

DRY FOODS — includes all shelf-stable dried foods

- *Temperature* — room temperature
- *Package* — intact, clean, labeling visible, and no sign of pest damage
- *Sensory characteristics* — no undesirable odors, molding, or discoloration upon opening

ULTRA-HIGH TEMPERATURE (UHT) PASTEURIZED FOODS — dairy creamers

- *Temperature* — 41 degrees F unless specified by the manufacturer
- *Package* — intact, clean, and properly dated
- *Sensory characteristics* — no undesirable odors or discoloration detected upon opening

ASEPTICALLY PACKAGED FOODS — includes non-dairy creamers and juices

- *Temperature* — room temperature
- *Package* — intact, clean, and properly dated
- *Sensory characteristics* — no undesirable odors or discoloration detected upon opening

BAKERY FOODS — includes breads, cookies, cakes

- *Temperature* — room temperature
- *Package* — intact, clean, and no signs of pest damage

- *Sensory characteristics* — no discoloration or molding

Self-Check -2	Written Test

:

I. Choose the best answer. 3 pts each

1. Temperature is checked in order to

A. Protect food intoxication B. Food poisoning C. Curb microbial growth in food D. All

2. Temperature shall be checked during

A. Transporting B. Storing C. Preparing D. All

3. One is potentially hazardous food?

A. Meat B. Fish C. Ham D. All

4. One of the following food items can be stored at room temperature?

A. Meat B. Fish C. Ham D. None

5. One is odd from the following?

A. Egg B. Milk C. wheat D. Fish

Answer the following question!

Note: **Satisfactory rating – 15 points** **Unsatisfactory - below 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

Information Sheet 3: Inspecting supplied items for damage

3.1 Receiving and inspecting goods

A. Match the delivery to a purchase order

First, ensure the delivery has come to the right place by matching the details on the Consignment Note to the Purchase Order raised by your business.
The Purchase Order should also be used to check that each item matches the description and quantities ordered. Generally, the boxes or cartons will have a description of the item and quantities of its contents.

Ensure you record the following for each new delivery:

- The date and time goods arrived
- The name of the delivery partner and driver
- Check off quantities and description of goods against purchase order
- Note any discrepancies
- Names of the personnel who performed these checks

Maintaining accurate reports is essential for accurate bookkeeping as well as resolving any disputes that may arise in the future regarding the items or supplier.

If there is no purchase order or record of the order, check with your supervisor or purchasing department before rejecting the goods.

B. Check products are not damaged

Before accepting the delivery, it’s important to conduct a quality check to ensure the items are not damaged or malfunctioning.

It’s not always feasible to open each carton and check every single item, particularly for large shipments. So in these cases you may wish to complete a spot check rather than open each and every carton.

Check for signs of breakage or faults, and ensure all items are as described on the purchase order.

If any damaged items are found in the delivery, record the extent of the damage on the consignment note and immediately notify the supplier with details of the issue to discuss the next steps.

C. Log received items into your inventory

Enter the items you have received into your warehouse management system as soon as possible, including the date and quantities received. This will allow the stock to be allocated to new orders right away.

D. Allocate storage space for goods

It's important to pack away a new delivery promptly to ensure no items become lost or damaged.

Supplies should be distributed to the appropriate person in the business, or packed away in the usual space to be accessed when required.

For goods received in as stock, these items will need to be allocated a space in the warehouse for storage until ready to be picked for an order.

E. Notify your accounts payable department

Send a copy of the signed and dated consignment note to your accounts payable team. This information can then be matched with the invoice from the supplier to ensure payments are only made for items that were actually received.

Self-Check 3	**Written Test**

I. Short Answers

1. **What is the role of using purchase order in receiving proper and undamaged goods? (5 pts)**
2. **What is supposed to be recorded and checked on a new delivery? 3pts**
3. **What is damaged item?3pts**
4. **What should the receiver do if** damaged items found when receiving items?3pts

Answer the following question!

Note: **Satisfactory rating – 14 points** **Unsatisfactory - below 14points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

Information Sheet 4: Managing excess tock

4.1. Managing excess tock

What is excess stock?

Excess stock is a common term used in inventory management for when inventory levels exceed forecasted demand. Excess stock is also known as overstock, stock surplus, excessive stock, or excess inventory. But, no matter what you call it, one thing that remains constant is the threat it represents to your company's bottom line.

Common causes of excess stock

Excess stock levels are typically caused by three culprits:

1. Inaccurate demand forecasting
2. Poor replenishment tactics
3. Lack of product life cycle tracking

- **Excess stock due to inaccurate demand forecasting**

Items will build up on warehouse shelves if you over forecast the needs of the marketplace and order more inventory than you are likely to sell. It is therefore important to get your demand forecasts as accurate as possible. This involves identifying those with seasonality and upward/downwards trends and adjusting the forecasts accordingly. You also need to account for external factors, such as competitor activity, for example if your competitors drop their prices or launch a new product, this could lead to a drop in sales of you own products.

- **Poor replenishment tactics and excess stock**

Inventory replenishment involves ordering the right amount of stock and the right time to meet forecasted demand. You can prevent a buildup of excess stock by continuously adjusting your reordering points and quantities in line with supply and demand variables.

3. Excess stock management and the product life cycle

All products go through a life cycle from market introduction, through maturity, to decline. Excess inventory often occurs during the declining stage of the product lifecycle. Whilst there's still typically demand for the product, it's beginning to phase out and if you fail to spot this you will continue to order based on previous demand patterns.

Common misconceptions of excess stock

Excess stock achieves higher service levels efficiently.

Always having inventory on hand means always having products ready to fulfill sales opportunities. Whilst this may seem like a logical thought process, many businesses stumble by tying-up too much capital in excess stock to guarantee product availability. Having a 100% fill rate on all products is not always the smart thing to do when you're trying to effectively manage your inventory costs and stock turnover. Smart inventory planners know they need to balance having low levels of inventory while also ensuring products are available to meet demand. The process of achieving low inventory levels while maintaining high service levels is called inventory optimization.

Excess stock allows higher safety stock levels.

Don't confuse excess stock with safety stock. They are not the same thing! Safety stock is a strategic and calculated level of stock that helps reduce the risk of stock outs due to unknown situations. Safety stock is included in the reorder point formula to account for variables such as supplier lead times or demand fluctuations. Effective safety stock levels ensure there's always inventory available to meet sales demands and keep customers happy.

Safety stock levels should be adjusted based on demand forecasts, seasonality variances, trends, supplier lead times and a product's place in its life cycle. This ensures a business is not left with excess stock. Companies that leverage inventory optimization software, such as EazyStock, have the ability to more accurately calculate safety stock to ensure excess stock is avoided.

Worth having excess stock for bulk purchase savings

Most businesses will see savings when purchasing supplies in bulk quantities. They can also save on shipping costs e.g one large order is cheaper than adding up shipping and handling costs from multiple smaller batch orders. However, committing to large quantities comes with the risk of demand uncertainty for every product ordered.

Disadvantages of excess stock

Carrying excess stock levels has many cost implications. Below are three of the top reasons why you need a good excess stock management policy to ensure you keeping inventory levels healthy at all times.

High opportunity costs

If you hold excessive levels of inventory it ties up business funds that could be invested in other areas, such as research and development or marketing. The cost of the inventory is not recouped until it is sold, and the longer this takes, the longer working capital remains unavailable.

Increased carrying costs

The cost of warehousing can include the warehouse space, utilities and maintenance of the storage area. Some stock may also require additional maintenance, such as temperature control to preserve the quality of the material. Excess stock of slow moving products eats up space in your warehouse when you could be holding higher demand products instead. Inventory levels can be reduced by up to 30% by simply improving forecasting methods and replenishment practices.

Quality reduction & product degradation

Storing items for longer than anticipated can lead to quality problems. In these situations, businesses may need to sell off stock at a reduced price or purchase new materials as replacements – both of which can be costly.

Self-Check 4	Written Test

Short Answer (5 pts each).

1. What is excess stock?

2. Mention common causes of excess stock**?**

3. _____ involves ordering the right amount of stock and the right time to meet forecasted demand.
4. What is inventory optimization?

5. Cite the Common misconceptions of excess stock?

Answer the following question!

Note: **Satisfactory rating – 25 points** **Unsatisfactory - below 25points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

LG #33	LO2. Store food and beverage items

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Transporting Supplies to appropriate storage.
- Storing supplies in appropriate storage area,
- Recording and labeling Supplies according to enterprise procedures

This guide will help you to clutch the learning outcomes stated in the cover page. Particularly, upon completion of this learning guide, you will be able to:

- Transport Supplies to appropriate storage.
- Store supplies in appropriate storage area,
- Record and labeling Supplies according to enterprise procedures

Learning Instructions:

1. Read and comprehend the specific objectives of this Learning Guide.
2. Follow the instructions described below.
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Information Sheet 1: Transporting Supplies to appropriate storage

1.1 Transportation and Storage

Finished Product Storage and Shipping

Storing finished product

- Identify the hazards associated with storing your finished product.
- Make sure finished products are stored and handled under the proper conditions to prevent deterioration (such as spoilage) and damage (such as crushing or forklift damage).
- If the finished products need refrigeration, store them between 1°C and 4°C. Store frozen products at -18°C or less. Monitor storage room temperatures regularly.
- If products that need refrigeration were not packaged between 1°C and 4°C, arrange them on skids or shelving when placing them in the refrigeration unit in a way that lets enough air flow around the products to cool them to storage temperature as quickly as possible.
- Store materials that are sensitive to humidity under humidity-controlled conditions.
- Rotate stock to ensure oldest products are shipped first to maximize their retail shelf life.
- Pay special attention to the temperature when your refrigeration units are defrosting. Don't overload their cold storage capacity.
- Make sure condensate pipes empty into a drain to reduce contamination.
- Keep refrigeration units including their condensate collection trays and drain lines clean and maintained on a regular schedule to prevent the growth of mold, spoilage bacteria and pathogens.
- Treat condensate trays with sanitizer to prevent the growth of harmful bacteria that could **cross-contaminate** employees' clothing or skin or other areas of your plant and eventually food products.
- If products can be stored at room temperature, protect them against contamination and conditions that could affect their safety or quality. This includes:
    - direct sun
    - excessive heating
    - moisture
    - external contaminants
    - rapid temperature changes that could affect the integrity of the product container or the safety or quality of the product

  Be careful about stacking dairy products. Clearly identify each container, and make sure the stack of containers won't fall over. Make sure they are protected from pests, moisture and too much weight.

  To make cleaning easy and to control pests, store items a suitable distance from the walls and off the floor. If you are storing products for more than one month, put them on pallets approximately 45 cm (18 in.) from the wall.

  If you are storing other food products in a finished product storage room, make sure they will not contaminate the dairy products or ingredients. Stack food products on pallets or shelves in a neat and well-organized way.

  Do not store eggs in finished product storage rooms. Eggs may contain **pathogens** that could cross-contaminate your products.

Do not store any other products in finished product storage rooms that may transmit odors or flavors.

Shipping finished product

Finished products must be properly protected during shipping. The type of vehicle or containers required depends on the type of product and the conditions under which it has to be transported.

Unless you take effective control measures, finished products may become contaminated during shipping or may not reach their destination in a suitable condition for consumption. This can happen even when proper hygiene control measures were taken when you made the product.

Shipping control measures should include:

- protecting product from potential sources of contamination
- separating product from non-compatible products on the same load
- protecting product from damage that could make it unsuitable for consumption
- keeping the product at the right temperature to prevent the growth of spoilage micro-organisms that may shorten the shelf life of the product

Transport Vehicles

The vehicles and containers used to transport food should be kept clean and in good condition. If you use the same vehicle or container for transporting different foods or for transporting non-food products, it must be effectively cleaned and disinfected (if necessary) between loads.

Criteria for receiving

- When you receive ingredients or packaging materials, visually inspect the vehicle to confirm:
  - It is suitable for transporting food (it should be well built, maintained in good condition, easy to clean and enclosed to protect the load from dust, fumes and weather)
  - It is clean:
    - The operator can prove when it was last cleaned
    - It doesn't have any odors
    - There are no signs of rodent activity
  - If other items are carried on the same vehicle, they are:
    - Not items that could potentially contaminate your ingredients or packaging materials
    - Properly separated from your ingredients or packaging materials (for example, by using physical dividers or plastic overwrapping)
  - If the ingredients or finished product had to be kept at a specific temperature:
    - The vehicle has kept them at that temperature

- The temperature was monitored and recorded throughout the journey

Make a **record** of the condition of the vehicle for each delivery received.

Sign shipment invoices and keep them on file as a record of receipt.

Criteria for shipping

- Before products are loaded onto the vehicle, visually inspect the vehicle to make sure:
  - It is at the right temperature for the product being shipped
  - It can keep the product at the right temperature throughout the journey
  - The temperature can be checked during the journey
  - The vehicle is in good condition, clean, free of odours and free of any signs of rodent or insect activities
  - The product is effectively protected from contamination, including dust and fumes
  - Cleaning records are available
  - No other items being shipped in the vehicle could contaminate your product
  - Your product will be effectively separated from any other types of foods or non-food items in the vehicle during the journey

Write down the results of your inspection.

Make sure the finished product being loaded is in sound condition with no open, leaking or damaged containers. Load the vehicle in a way that prevents your product from becoming damaged or contaminated.

For products requiring refrigeration, pre-cool the trailer, turn off the reefer immediately before loading (to prevent frost build-up), load quickly and then turn the reefer back on immediately after loading.

Transport vehicles within your plant

This section covers equipment such as carts and forklifts used to move ingredients, packaging and finished product within your plant.

- Maintain this equipment carefully. Carts, motorized forklifts and hand trucks take a lot of abuse.
- Forklifts and hand trucks often have painted surfaces. Make sure the paint isn't flaking off, since this could contaminate the products.
- Wash transportation equipment frequently. Carts should be easily cleaned and designed to prevent water from collecting in them. Regularly clean and sanitize equipment wheels.
- Not all motorized forklifts can be used in all areas of the plant. Because propane may contaminate some stored food, use electric forklifts in food-processing areas.
- Create a monitoring program to make sure that any transport vehicles restricted to specific areas of the plant are used only in those areas. For example, a hand truck used to deliver ingredients into a raw batching area should not be used to deliver packaging materials into a finished product area.

Product Returns

Finished products may be returned to your plant for several reasons. These include:

- expired shelf life
- customer complaints
- company product withdrawals
- recalls

These products may contaminate your plant environment, your equipment or other dairy products in your plant. Finished products that have left your direct control must not be salvaged and may not be used for processing or rework.

Have a written policy that clearly defines how to handle product returns in your plant. It should include:

- clearly identifying product that has been returned
- creating a dedicated area for returns where they cannot contaminate other finished products or be mistaken for finished product to be shipped out
- monitoring the frequency of returns
- investigating unusually high numbers of returns
- documenting that returned products have been safely disposed

Training

Train your employees on your receiving, transportation and storage program. They should understand the dangers of improper procedures as well as what conditions can result in unsafe products or poor-quality products.

The training should cover:

- all the documents that make up your receiving, transportation and storage program (including records)
- how to access these documents
- how to fill out records
- what specifications your incoming materials should meet
- what conditions delivery and shipping vehicles should meet
- when to reject incoming materials and how to handle exceptions
- how to properly unload incoming materials and store them
- the proper storage conditions for ingredients, packaging and finished products
- the proper conditions for loading shipping vehicles and transporting finished products
- how to receive, store and handle all non-food chemicals
- how to handle returned products properly
- how to properly use and maintain transport vehicles within the plant such as carts, motorized tow motors, hand lift trucks, etc.

Monitoring and Follow-up

Establish procedures to monitor:

- how materials are **received**
- how materials are stored (including finished product)
- how finished products are **shipped**

Self-Check 1	Written Test

Self check #1

Short Answer 5pts each.

1. **What are important precautionary measures taken when Storage and Shipping?**
2. What is the importance of keeping the cleanliness of transporting vehicles and containers?

3. **Mention inspection activities before loading vehicles?**

Answer the following question!

Note: **Satisfactory rating – 15points** **Unsatisfactory - below 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information Sheet 2. Storing supplies in appropriate storage area

2.1 Appropriate storage condition

Appropriate storage condition is a storage condition which is safe, clean and controlled storage temperature inconvenient for microbial growth and cross contamination.

Storing food safely

Depending on the type of food, you'll need to store it in the fridge, freezer or in containers you keep in cupboards or on shelves. When storing food, it's important to keep food safe so that's it still safe to eat or cook.

Storing food in the fridge

Some food needs to be kept in the fridge to help stop bacteria from growing on it, such as food with a 'use by' date, cooked food and ready-to-eat food such as desserts and cooked meats.

Make sure your fridge is cold enough

You need to make sure your fridge is cold enough or food poisoning bacteria will still be able to grow. Your fridge should be between 0ºC and 5ºC.

If you're not sure how the temperature setting or dial works on your fridge, you could use a fridge thermometer to check it's the right temperature.

To store food safely in the fridge:

- keep the fridge door closed as much as possible
- wait for food to cool down before you put it in the fridge
- turn the temperature down to help keep it cold enough if the fridge is full

Keeping food in the fridge

- To help stop bacteria from growing:

- when the label says 'keep refrigerated', make sure you do keep the food in the fridge - if the food isn't labeled with any storage instructions and it's a type of food that goes off quickly, you should put it in the fridge and eat it within two days
- some jars and bottles need to be kept in the fridge once they've been opened - check the label and follow storage instructions
- when you're preparing food, keep it out of the fridge for the shortest time possible, especially when the weather or the room is warm

- if you have made some food (such as a sandwich or a cold dish) and you're not going to eat it straight away, keep it in the fridge until you're ready to eat it
- if you're having a party or making a buffet, leave the food in the fridge until people are ready to eat - you shouldn't leave food out of the fridge for more than four hours
- cool leftovers as quickly as possible (ideally within one to two hours) and then store them in the fridge - eat any leftovers within two days, except for cooked rice, which you should eat within one day to help avoid food poisoning

Storing meat

It's important to store meat safely to stop bacteria from spreading and to avoid food poisoning. You should:

- store raw meat and poultry in clean, sealed containers on the bottom shelf of the fridge, so they can't touch or drip onto other food
- follow any storage instructions on the label and don't eat meat after its 'use by' date
- when you have cooked meat and you're not going to eat it straight away, cool it as quickly as possible and then put it in the fridge or freezer
- keep cooked meat separate from raw meat

Keeping food in the freezer

You can keep food safely in the freezer for years as long as it stays frozen the whole time. But the taste and texture of food changes if it’s frozen for too long, so you might well find that it’s not very nice to eat.

You can check any instructions on food labels or in your freezer’s handbook (if you don’t have this anymore, you might be able to find it online) to see how long food should be frozen.

It's safe to freeze most raw or cooked foods providing you:

- freeze it before the 'use by' date
- follow any freezing or thawing instructions on the label
- thaw it in the fridge so that it doesn't get too warm, or, if you plan on cooking it as soon as it's defrosted, you could defrost it in a microwave
- try to use it within one to two days after it’s been defrosted – it will go off in the same way as if it were fresh
- cook food until it's steaming hot all the way through

When frozen meat and fish (and some other foods) thaw, lots of liquid can come out of them. If you’re defrosting raw meat or fish, this liquid will spread bacteria to any food, plates or surfaces that it touches. Keep the meat and fish in a sealed container at the bottom of the fridge, so that it can't touch or drip onto other foods.

Always clean plates, utensils, surfaces and hands thoroughly, after they have touched raw or thawing meat, to stop bacteria from spreading.

If you defrost raw meat or fish and then cook it thoroughly, you can freeze it again, but remember never reheat foods more than once.

Storing dry food in containers

Many types of food don't need to be kept in the fridge to keep them safe to eat, for example dry foods such as rice, pasta and flour, many types of drinks, tinned foods, and unopened jars. But it's still important to take care how you store them.

To store dry food safely:

- keep food in sealed bags or containers - this helps keep food fresh and stops anything falling into the food by accident
- don't store food or drinks near cleaning products or other chemicals
- don't use old food containers to store household chemicals, and don't store food in containers that have been used for other purposes
- only reuse undamaged plastic water bottles that you can clean
- don't store food on the floor, because this can encourage mice, ants and other pests
- keep the storage area dry and not too warm

Tin cans

When you open a can of food and you're not going to use all the food straight away, empty the food into a bowl, or another container, and put it in the fridge.

Don't store food in an opened tin can, or re-use empty cans to cook or store food. This is because when a can has been opened and the food is open to the air, the tin from the can might transfer more quickly to the can's contents.

This advice doesn't apply to foods sold in cans that have resealable lids, such as golden syrup and cocoa, because these types of food don’t react with the can.

Covering food with cling film

Cling film is useful for protecting food but, like many things, it needs to be used correctly.

Not every type of cling film is suitable for using with all foods. Check the description on the box to see what foods it can be used with.

There are three main points to remember when using cling film:

- don't use cling film if it could melt into the food, such as in the oven or on pots and pans on the hob
- you can use cling film in the microwave (in line with the manufacturer's instructions), but make sure the cling film doesn't touch the food
- cling film should only touch high-fat foods, such as some types of cheese, raw meats with a layer of fat, fried meats, pies and pastries, and cakes with butter icing or chocolate coatings, when the description on the box says the cling film is suitable

Covering food with kitchen foil

Kitchen foil, which is made from aluminium, can be useful for wrapping and covering foods. But it's best not to use foil or containers made from aluminium to store foods that are highly acidic, such as:

- tomatoes
- rhubarb
- cabbage
- soft fruit

Aluminum can affect the taste of these foods.

2.2 Store food at appropriately controlled temperatures

Temperatures for storing food

Dry goods store

The dry goods store is a non-refrigerated store where canned and dried food are kept.

It may be room-size, or a variety of cupboards and/or pantries.

Desired temperature for dry store should be in the range 15°C to 20°C.

Refrigerated storage

Refrigerated storage is used for perishable fresh products such as fruit and vegetables, dairy products, eggs, meat, poultry and seafood.

The basic requirement is storage is at 5°C or below.

Many operate at 2°C.

Meat poultry and seafood are best stored fresh at 1°C to 2°C.

If purchasing on daily basis this means a high turnover and 4°C is sufficient but if high risk foods are purchased less frequently then colder temperatures are best.

Fruit and vegetables require less severe temperature.

Tomatoes can be stored in the dry store if they are purchased regular basis.

Most vegetables only require refrigeration to keep their *quality*, not for food safety reasons.

Refrigerated storage may occur in coolrooms, under-counter refrigeration units or domestic refrigerators.

Frozen storage

Freezers are used to store frozen produce.

Freezers may be chest type, up-right, or walk-in, but they must be maintained such that the food remains hard frozen.

Standard operating range is -15°C to -18°C.

Display temperatures

Display temperatures for potentially hazardous food are:

- Cold food – at 5°C or below. Between 1°C and 5°C will keep high risk food out of the Temperature Danger Zone and prevent freezing of product (which makes it unattractive and unappealing to customers)
- Hot food – at 60°C or above
- Frozen food – maintained in a 'hard frozen' state (in the range of -15°C to -18°C or below).

Self-Check 2	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in **Self check #2**

Short answer 4 pts each

1. **What is appropriate storage temperature?**
2. **What is important to do for** storing food safely in fridges?
3. **What is the importance of keeping food in a controlled temperature?**

Answer the following question!

Note: **Satisfactory rating – 12points** **Unsatisfactory - below 12points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information Sheet3: Recording and labeling Supplies

3.1. Labeling and recording supplies

Food Labeling

Different food safety regulation prohibits the sale of **misbranded** food which implies that food products must be properly labeled.

Consumers make the final decision about what they consume. The attitude in many nations state that government will not regulate consumer decisions. However, there is an expectation that consumers will make "better" decisions if they have information with which to make decisions. Accordingly, society (through government) mandates that food firms provide accurate information about their product to consumers so consumers can then make their decisions. Much of this information is expected to be available at the time and place the consumer decides to purchase the food item. Labels have been identified as the vehicle by which the consumer information is to be provided.

Laws and regulations directing the labeling of food products (US DA).

- **Fair Packaging and Labeling Act**
  - Informed consumers are essential to the fair and efficient functioning of a free market economy. Packages and their labels should enable consumers to obtain accurate information as to the quantity of the contents and should facilitate value comparisons.
  - Consumer commodity ... does not include ...any meat or meat product, poultry or poultry product, or tobacco or tobacco product.
- **Nutritional Labeling and Education Act**
  - The Nutrition Labeling and Education Act of 1990 (NLEA), which, among other things, requires nutrition labeling for most foods (except meat and poultry) and authorizes the use of nutrient content claims and appropriate FDA-approved health claims. Meat and poultry products regulated by USDA are not covered by NLEA.
- **Food Allergen Labeling and Consumer Protection Act of 2004**
  - All packaged foods regulated by FDA must comply with food allergen labeling requirements after 2005. A "major food allergen" is an ingredient that is one

of five foods or one of three food groups (or is an ingredient that contains protein derived from one of the eight categories): milk, egg, fish, crustacean shellfish, tree nuts, wheat, peanuts or soybeans. These foods or food groups account for 90 percent of all food allergies. Although there are other foods to which sensitive individuals may react, the labels of packaged foods containing these other allergens are not required to specify those ingredients or substances as allergens.

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Food Labeling Statutes and Regulations

- Food labeling requirements are based on statutory laws enacted by Congress and subsequent regulations issued by the implementing federal agency. These statutes and regulations are found in their respective codes; this is not a complete list of all U.S. federal food labeling laws.

Industry Guidance on Food Labeling

- To assist food businesses comply with food laws (including food labeling laws), the responsible agencies are increasingly publishing guides and fact sheets written for a business audience (rather than the legalese of statutes and regulations). These explanatory publications offer a good introduction to the statutes and regulations.

- Labeling & Nutrition Guidance Documents & Regulatory Information -- Guidance for Industry
  at **http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/default.htm**
- Food Labeling Guide
  at **http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006828.htm**

Improperly labeled food is Misbranded food

- Note -- the discussions of ingredients, sanitation, manufacturing processes, etc (including contact substances from packaging) are addressed under the broad prohibition against adulterated food. We now turn our attention to misbranding.

- **Labeling regulations significantly blur the distinction between food safety issues and nutritional issues**.

- Many labeling requirements address the goal of providing consumers information on which they can base their food purchasing decisions, but the emphasis is on nutritional information. There are few labeling regulations that directly address food safety concerns, e.g., disclosure on labels of allergens used in manufacturing the food. However, it is appropriate to study labeling requirements because the food must be properly labeled for it to be sold in interstate commerce, and the same agencies (FDA and FSIS) have primary responsibility for both food safety and food labeling.
- **The jurisdictional distinction between FDA and USDA FSIS continues in regulating labels**; as a general rule, FDA regulates the labeling of all food except those regulated by USDA FSIS (i.e., meat and poultry products) and those regulated by Alcohol and Tobacco Tax and Trade Bureau (TTB).
  - "...commercially processed egg products, and meat and poultry product, including combination products (e.g., stew, pizza), containing two percent or more poultry or poultry products, or three percent or more red meat or red meat products ... are regulated by the United States Department of Agriculture's Food Safety and Inspection Service (FSIS)."
- Responsibility for promulgating and enforcing regulations with respect to labeling distilled spirits, wines, and malt beverages are regulated by the Alcohol and Tobacco Tax and Trade Bureau (TTB) of the Department of Treasury.
  - **BUT** -- beers which are not made from both malted barley and hops (but are instead made from substitutes for malted barley such as sorghum, rice or wheat, or are made without hops) do not meet the definition of a malt beverage. Such products are not subject to the labeling, advertising, and other provisions of the TTB regulations. An alcoholic beverage not covered by the TTB labeling regulations is subject to ingredient and other labeling requirements of FDA regulations.

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Requirements for Labeling Food Products

Five basic label requirements for food: product name, quantity of content, nutritional information, ingredients, and manufacturer or distributor. These five requirements are addressed in subsequent subsections.

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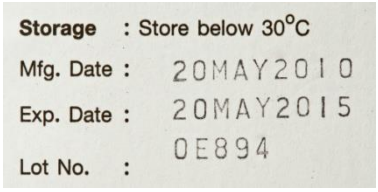
Parts of a Food Label

- You may want to gather three or four food packages as you read this section; take a few moments to identify each of the following components on each package.

- **Principal display panel**(PDP)
  - The PDP is the "portion of the package label that is most likely to be seen by the consumer at the time of purchase." The front of the package??
  - The PDP must indicate the **Name of product**
  - The PDP must also indicate the **Net quantity of contents** in U.S. and metric terms in legible type and size; this information must be printed in a line parallel to base of package.
  - No qualifying terms, such as "big" or "large", may be included in the "quantity of contents" statement.

While the food is being stored within your control the labelling only needs to minimal:

- Name of the products
- Date of production
- Name of person who produced
- Use by or best before dates needs to be applied.



Care needs to taken when removing product from packaging that has come from outside of the enterprise.

If internal packaging does not contain information that is required from the product then this information needs to be secured from the outside packaging and put on display while the product is being stored by the enterprise.

Do not remove labels from canned goods. If canned goods loose labels then they need to be thrown away.

If product is purchased from outside then the following must be on the label or packaging:

- Name of product
- Name and address of company that produced the product
- Ingredients that make up the product
- Contact information if product is found to be faulty.
- Any allergens that might be contained in the product
- Nett weight of the product
- 'Use by' or 'best before' dates.

Self-Check 3	**Written Test**

I. Short Answer

Short Answer 5 pts each.

1. **What are the** basic information incorporated in labeling of products?
2. **What is the relevance of labeling products?**
3. **What could you do if incoming products are not properly labeled?**

Answer the following question!

Note: **Satisfactory rating – 15points** **Unsatisfactory - below 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

LG #34	LO3. Rotate and maintain supplies

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Rotating supplies according to enterprise policy.
- Moving and shifting supplies according to safety and hygiene requirements.
- Checking and reporting the quality of supplies.
- Disposing Damaged or spoiled supplies or wastes
- Identifying and reporting Any problems promptly
- Maintaining Storage areas in optimum condition.

This guide will help you to clutch the learning outcomes stated in the cover page. Particularly, upon completion of this learning guide, you will be able to:

- Rotate supplies according to enterprise policy.
- Move and shifting supplies according to safety and hygiene requirements.
- Check and reporting the quality of supplies.
- Dispose Damaged or spoiled supplies or wastes
- Identify and reporting Any problems promptly
- Maintain Storage areas in optimum condition

Learning Instructions:

1. Read and comprehend the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask the correction key (key answers) from your trainer or you can request your trainer to correct your work. (You have to get the key answer only after you finished answering the Self-checks).

Information Sheet 1- Rotating supplies

How to Inventory, Organize, and Rotate Food Storage Supplies

We can waste a lot of food, money, and time if we don't know exactly what's in our food storage and where it's located.

Inventory Your Supplies

Grab a piece of paper or a notebook and draw three columns with these headings:

- **Product**,
- **Amount**,
- **Date Purchased**.

If you are inventorying ALL your supplies, those that are not food do not need a purchase date. Go through every single item you have stored.

While you have everything pulled out, use a black permanent marker to write the purchase date on every can or box of food. This is SO important for rotating food products. I keep a marker handy in my kitchen and when I bring home groceries, I write the dates on items that will go into my storage.

Since I'm kind of a planning nut, I have looked high and low for what I consider the perfect preparedness planner where I can keep track of everything - food, water, personal information, and bug out bag supplies - all of it.

Organize, Organize, Organize

There are many ways to organize. A couple of examples would be:

- Organize by putting all the canned fruit in one place, the canned vegetables in another, the canned soups in another.
- Organize by storage method - all canned items on one set of

shelves, all freeze-dried cans on another.

The method really depends on how your home is set up.Others may not have a basement or any large space to dedicate just to emergency supplies. If you don't have that kind of storage space, it is even more important to organize and take an inventory that is written down and kept up to date.

Rotating Your Food Storage

As you all know, different foods have varying expiration dates or shelf life. The shelf life also depends on the method used to preserve the food.

- Most freeze-dried foods have a shelf life of 10-30 years.
- Most store-bought canned foods have a shelf life of about 1-3 years. ("Use-by" dates are not necessarily the same as shelf life. They are dates required by law - or lawyers - to avoid liabilities to the store and the manufacturer.)
- Home canned foods have a shelf life about the same as store-bought canned foods; however, it depends on the safety of canning methods used and personal choice about taking risks of eating food older than 1-3 years.

FIFO and LIFO based rotation

FIFO and LIFO are well-known when it comes to accounting, but they can also be used for inventory management. But first it's important to understand what they are.

FIFO - First In, First Out

This is as deceptively simple as it sounds. Following this method, the first lot of stock that comes into your warehouse should be the first that goes out - that is, sent into stores or sent directly to customers.

LIFO - Last In, First Out

Conversely, this method means that the most recent stock to come into your warehouse should be sent out first. The new stuff is used up first, taking priority over old stock.

So, FIFO and LIFO are two opposite methods of moving stock through your warehouse.

Benefits of FIFO

"First in first out" is a great strategy if your products have a shelf life. That can be perishable goods like food, products that have a cycle like fashion, or products that could become obsolete like anything to do with technology. With these, you definitely want to move whatever comes into your warehouse first. If it sits on shelves while you sell newer things, you can (and probably will) lose money as it expires, goes out of fashion or is no longer the latest model. Think about it with something as simple as milk. When you take the milk from your warehouse and put it in the store, you want the first lot of milk at the front of the refrigerator. There's no use putting the freshest milk in front - it will cover up the first lot of milk, customers will buy it and the milk behind will go sour.

Benefits of LIFO

Understanding why "last in first out" is good option is a little less obvious. The main benefits of using this method are connected to accounting, but it's worth giving this mention here - especially if your products are goods you manufacture. Using LIFO allows you to match your most recent costs against your revenue. When the costs of manufacturing your product are rising, this is a great approach. If this is the case, your most recent products cost you the most to make. *If you sell the ones made more cheaply first, you underestimate the cost of production and overestimate your profits because you're working with old information rather than what's happening right now.* So, using LIFO, you will have more reliable and better quality information on your earnings.

This directly leads to another benefit - tax. *If you have better reporting of your profit (less overestimating), you will pay less tax.* And that's something business owners are always happy to hear!

You will also be less affected by any fall in the market price for the goods you manufacture, because you will be selling your products that cost the most to make first. Therefore, you'll have *less write-downs*.

When it comes to LIFO and **warehouse management**, this method is really only used for homogenous goods - like coal, sand, stone or bricks. When one batch comes into the warehouse, it sits on top of the old batch and the newest is the first to be used. This method also comes in handy when you don't have enough space in your warehouse to really rotate the batches - if space is tight and your products don't have a shelf-life, why give yourself the extra hassle?

And the winner is...

There really is no right or wrong answer. It depends on what your products are. For perishable goods or products with a life cycle or life span, it always has to be FIFO - or you'll lose money.

For other products, you might need to get together with your accountant or whoever takes care of the finances to work out if LIFO is the best way to move stock in and out

of your warehouse.

Whichever one you choose, make sure the stock layout in your warehouse reflects this so it's quicker and easier to keep things flowing. If you're using LIFO, you'll want "Push-Back" or "Drive-In" shelving and pallet racking. This allows you to put the newest product at the front, pushing back the older product on the shelves. When you need to retrieve product, the latest is right there on the end of the shelf, ready to be removed.

Self-Check 1	**Written Test**

Self check #1

Short Answer 5pts

1. **What is FIFO?** .
2. **What is LIFO?**
3. **Write benefits of FIFO& LIFO?**

Answer the following question!

Note: **Satisfactory rating – 15points** **Unsatisfactory - below 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

Information Sheet 2- Moving and shifting supplies hygienically

2.1. Moving items hygienically

- Avoid sources and effects of microbiological contamination of food while moving
- Methods of movement and storage to ensure the safety of food
- Temperature controls during moving items
- Avoid temperature danger zones in moving items
- The contents of food safety transportation procedures include in organizational food safety program, safe manual handling techniques such as loading and unloading, lifting and dealing with heated surfaces.

Self-Check 2	Written Test

Self check #2

Short answer 5 pts each

1. **What is the use of avoiding temperature danger zone while moving food items?**
   To avoid cross contamination and microbial replication in food
2. **What is temperature danger zone?**
   Temperature danger is a temperature range that suits the growth of pathogens in food.

Answer the following question!

Note: **Satisfactory rating – 10points** **Unsatisfactory - below 10points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information Sheet 3- Checking and reporting the quality of supplies.

1.1. Quality inspection

5 INSPECTION STEPS WHERE QUALITY CONTROL CHECKLISTS ARE VITAL

Most product inspections follow a process with several specific steps. When an inspection goes wrong, it is most often because steps weren't clear, or inspectors otherwise didn't follow them according to the buyer's instructions.

How you've designed inspection will impact the time (and cost) needed and accuracy of results. This is true whether you're conducting inspection yourself or hiring a professional third party.

That's why an inspection checklist must be detailed enough to include all your requirements yet concise enough to be easy to follow.

The following steps are common among most QC inspections and are very difficult without the aid of an effective checklist to reference:

1. Pulling random samples for inspection

Most importers know the importance of pulling random samples during QC inspection using a statistically-significant acceptance sampling method. Without pulling samples randomly, you risk getting a report that doesn't fairly represent the quality of the entire shipment.

Factory staff can actually hinder inspection accuracy if permitted to choose which units will be checked. Some may "cherry pick" samples or direct inspectors to check units they know will meet requirements from a specific area of the warehouse .

But many importers don't know that their QC team also references a QC checklist to confirm how large of a random sample they need to pull.

Without knowing what sample size to check, a couple of problems can occur:

Inspectors may check too many units, which will lengthen the time needed to inspect and may raise your costs if your inspector is billing you based on time; or **Inspectors may check too few units**, which limits transparency and raises the likelihood that defects and other product issues, will go unnoticed.

2. Checking the product against specifications

You might provide your QC team with CAD drawings, an approved sample and other reference materials to clarify product specifications. Your QC checklist should not only direct your inspector's attention to these, but also list any other specifications they should check during inspection.

A QC checklist typically covers product specifications such as:

Item weight and dimensions

Material and construction
Item color
Item marking and labeling, and
General appearance

Professional inspectors look to the quality control checklist for a list of all the product specifications they must check and report on. **There's no guarantee that your inspectors will check information not included on your inspection checklist** .

For example, if you don't specify what information should appear on a clothing label, your inspector won't know what information to verify on site. This can pose serious problems, especially when you're compelled to meet product labeling regulations.

3. Verifying packaging requirements

Obvious problems with packaging are normally easy to spot. But some of the more specific details are easy to miss during inspection and reporting if you don't include them in your quality manual.

Your inspector will typically reference your checklist for the exact type of packaging, markings or labeling, artwork and other requirements they must confirm at the factory.

What can go wrong when packaging isn't reported correctly?

A nonconformity like transparent tape, rather than opaque tape, on a shipping carton may not cause issues for you. But maybe your inspector doesn't report that the same carton is single-ply when it should be double-ply to carry the weight of your product.

The finished goods you receive could be damaged to the point of being unsellable as a result. Including all packaging requirements in your QC checklist will help ensure your products are adequately protected during shipping and handling

4. Classifying and reporting quality defects

Most products are prone to a set of quality defects unique to their product type. For example, warping is a defect known to affect wooden products. And flash is a defect known to affect injection-molded products.

But without clarification in your QC checklist, your inspector is likely to misreport—or omit from their report entirely—any product defects found.

QC professionals typically classify defects as "critical", "major" or "minor" in order of severity. And inspection checklists often have a section for defects and how to classify them, which the inspector uses to determine defect severity.

For example, the following excerpt from a QC checklist for furniture classifies an exposed nail as a critical defect. Like other critical defects, an exposed nail could cause serious harm to consumers if not addressed before shipment. So the order will generally fail inspection if the inspector finds one or more in the sample.

But you often need to state a clear tolerance for what's acceptable for less serious defects, like untrimmed threads on an upholstered chair.

5. **Conducting on-site testing**

On-site product testing is an essential part of QC inspection for a wide variety of products. Inspectors conduct product tests to identify any issues that might affect your products' safety, function or performance.

Product inspectors rely on inspection checklists to provide testing criteria and procedures, testing sample sizes and more. **Inspectors might perform testing**

Self-Check 3	**Written Test**

Self check #3

Short answer 10 pts

1. **Write inspection steps where quality control checklists are vital**
   Pulling random samples for inspection
   Checking the product against specifications
   Verifying packaging requirements
   Classifying and reporting quality defects
   Conducting on-site testing

Answer the following question!

Note: **Satisfactory rating – 10points** **Unsatisfactory - below 10points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information Sheet 4- Disposing Damaged or spoiled supplies or wastes

All food that is not safe or suspected of not being safe for consumption must be disposed of correctly.

Food Identified for disposal

Occasionally, food for disposal may need to be marked and identified. Mark and keep separate from other foodstuffs any food identified for disposal until disposal is complete. Food for disposal may include food that is:

- Subject to recall
- unsafe to eat
- suspected of not being safe to eat
- tampered with
- not to be used for human consumption

Methods for the disposal of food including:

- destroyed
- disposed of so that it cannot be used for human consumption
- Returned to supplier.

Disposal of Food Waste (in Food Areas)

- Remove food waste and other waste materials from the areas where the food is being handled cooked or manufactured in a routine manner
- Provide refuse or dustbin of adequate size and with a cover in the premises for collection of waste. A bin should have a mechanism for opening it without having to touch it
- Have the dustbin emptied and washed daily with disinfectant and dried before next use
- Separate liquid and solid waste at the time of placing them in the bins
- Locate your garbage cans in such a manner that it does not lead to contamination of the

a. food process
b. food storage area
c. environment inside and outside your premises

- Keep all waste in covered containers, get it removed at regular intervals as per local law
- Internal garbage bins should be all collected together daily at an assigned collection point where they can be emptied into a public garbage collection system
- Place the bins in a sufficient distance to prevent contamination
- Dispose food waste in such a way that it does not attract dogs, cats, birds, rodents and flies. Garbage cans must have covers
- Follow the rules and regulations including those for plastics and other non environment friendly materials

Storage of Waste and Inedible Material

- Provide enough storage facility for storing of waste and inedible material prior to removable from the premises

- Ensure there is no pest and rodent access to waste of inedible material
- Ensure that stored and inedible material does not contaminate

a. potable water
b. equipment used for food preparation
c. or building/premises

Effluent and Waste Disposal

- Have an efficient effluent and waste disposal system in your meat processing unit
- The effluent lines including sewer system must be constructed in such a way that they

a. are able to carry large peak loads
b. must not contaminate potable water lines
c. have a biological oxygen demand of less than 1500

- Install an effluent treatment plant if necessary to dispose of effluents like gases, liquids and solids in conformity with Factory/Environment Pollution Control Board

- There should be an arrangement of separation of the biodegradable and non-biodegradable waste before placing in separate bins

- Mark waste trolleys and bins with defining symbols or have different colours for biodegradable and non-biodegradable waste/refuse bins

Dispose of food promptly to ensure no cross-contamination of other foodstuffs.

If food is not dispose of promptly , it will be exposed for cross contamination . So as to avoid cross contamination it is important to promptly dispose of food with deteriorating state.

A Notice from the FDA to Growers, Food Manufacturers, Food Warehouse Managers, and Transporters of Food Products

Grain and vegetable crops, and food manufacturing facilities, food warehouses, and food transporters may be flooded or lose power as a result of hurricanes or other severe weather events, so the Food and Drug Administration (FDA) is providing important tips on how to properly dispose of contaminated or spoiled food.

Disposing of Contaminated or Spoiled Food

Decisions about disposing of food products are usually made by the owner of the product, along with the appropriate state agency and local authorities. In determining which contaminated food products should be disposed of, reconditioned or salvaged, the owners of the products must assess each product's quality, safety and condition.

Depending on the applicable local, state, and Federal regulations, owners may be able to dispose of contaminated food products in a landfill, by incineration, or rendering.

Key questions to consider when disposing of contaminated food include:

- What is (are) the contaminant(s)?
- How the contaminated food is categorized (e.g. hazardous waste, municipal waste, radiological waste, non-hazardous waste requiring special handling, or unknown)?
- What is the quantity of the contaminated product for disposal?
- Where is the final disposal facility?
- What are the logistics for moving the contaminated products from the site to the disposal facility?
- Is transportation required for the transfer of waste to the final disposal site?
- What are the required permits associated with the disposal process and how are they procured? Is assistance from state, local, and Federal government agencies required?
- Is there a health and safety protection plan for the workers who will be involved in the disposal process? If so, what is the plan?
- Who and what organizations will be involved in overseeing the disposal process?
- What organizations must be involved and concur with re-introducing the reconditioned product into the marketplace?

Self-Check 4	**Written Test**

Self check #4

1. **Write methods for the disposal of food**

   .

2. **Explain why food needs to be disposed of promptly**

Answer the following question!

Note: **Satisfactory rating – 8points** **Unsatisfactory - below 8points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

Information Sheet 5- Identifying and reporting Any problems promptly

5.1. Reporting problem

The procedure to report faults will vary from establishment to establishment so it is important to determine what applies where you work.

If you identify any of the above you must:

- Take action to fix what you can – if the 'fix' is obvious and it is safe to do so

  or

- Report it.

If you cannot fix the problem, you should:

- Stop using the item if it is unsafe – turn it 'off'
- Remove the item from service
- Tag the item as 'Out of Service' – to prevent others using it when it is broken
- Store locate the item in the appropriate Out of Service area – especially where the item poses a danger to users (such as electric shocks, jagged edges or unprotected blades)
- Complete appropriate 'Report Fault' paperwork and submit to the appropriate person or department.

Who should the item be reported to?

Internal house protocols may require you to report the item to:

- Your supervisor
- The manager
- The owner
- The Maintenance Department.

If the venue has a Maintenance department it is generally their responsibility to check and fix the item.

Some faults may have to be repaired off-site – which may involve returning the item to the supplier or forwarding it to an accredited repairer: in extreme cases, a new item may have to be purchased.

How should the report be made?

The usual ways to report items requiring attention are to:

- Make a verbal report – in person either face-to-face or via the telephone: a follow-up written form may be required
- Complete an internal ‘Report Fault’ form or ‘Request for Maintenance’ form.

Self-Check 5	**Written Test**

Self check # 5 5 ptd each

1. When you identify any problem with items, what should you do?

2. After tracing a problem with supplies whom shall you report to?

Answer the following question!

Note: **Satisfactory rating – 10points Unsatisfactory - below 10points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information Sheet 6- Maintaining Storage areas in optimum condition

6.1. Condition of storage area

Food storage areas and practices can help you ensure safety.
Food safety needs to be at the forefront of your mind when unpacking and storing food deliveries. Keeping food safe begins with having enough storage space and a designated area for each item to be placed. It is essential to always check the temperature of the area in which food is stored and to be sure there is plenty of light and ventilation in the area.

Food should not be stored near chemicals, trash, leaky pipes, or in a mechanical room. By ensuring that the food storage areas are well maintained and are meeting safety standards, the risk of food safety issues will decrease significantly.

General Food Storage Area

- Keep all storage areas clean and dry
- Clean floors, walls and shelving in coolers, freezers, and dry storage areas on a regular basis
- Clean up spills and leaks right away to stop contamination to other foods
- Clean dollies, carts, transporters and trays often
- Do not line shelving – make sure shelving is open so air can flow between foods
- All items should be 6” from walls and floors
- All items should be 12” from the ceiling
- Make sure each food item has a specific place for storing and is labeled
- Repair cracks and crevices in storage areas – you don’t want pests!
- Repair doors and windows that don’t close tightly

Dry Food Storage

- Dry storage should stay cool and dry
- Temperature of the dry storage area should be between 50 – 70 degrees Fahrenheit
- There should be good ventilation to keep temperature and humidity consistent

All steps of a delivery are important and crucial for food safety. It is important to inspect foods when they are delivered, store them in the correct location, and ensure food storage areas are well maintained.

First In – First Out (FIFO)

If food is kept too long it will deteriorate. It is essential to observe use-by dates and follow the stock rotation practice of ‘First In – First Out’ (FIFO) which is the food industry standard for stock rotation.

All food – whether on display or stored in the cool room, pantry or freezer – should be stored and used on a First In – First Out basis.

In the vast majority of cases food items begin to deteriorate as soon as they are picked, produced or delivered.

FIFO means the food delivered first is used first. Fish delivered on Monday should be used before fish delivered on Thursday:

- Tomato sauce delivered in February should be used before tomato sauce delivered in March.

Maintenance of a First In – First Out system requires food handlers to organise collection and storage of foods.

When putting a delivery of food into store – either into a dry store, cool room, or freezer – it is necessary to put the latest arrivals at the back and to move the existing stock to the front:

- This is essentially what the term ‘stock rotation’ means – rotating stock (moving it around) on the basis of use and new deliveries
- Dry goods should always be stored and used in order of the ‘use by’ or ‘best before’ dates on the packages
- Fresh foods are not delivered with these dates and it is helpful if fresh foods are tagged with the date of delivery and stored in order of delivery.

Food under refrigeration should be moved forward when a new delivery arrives and the newly delivered food should be stored in separate, clean containers behind the food already in the fridge:

- To ensure First In – First Out is always implemented it is advisable to mark every delivery of food with the date of delivery.

This should be done in large, dark writing and the date should always be highly visible in the store. A similar but less obvious system may be applied to wrapped fast food items.

Frozen foods should also be used on a FIFO basis. Frozen foods should be tagged with the date they were delivered and the date they were frozen.

Ensure each product is stored in accordance with the manufacturer's guidelines outlined on the label or the packaging.

Constant monitoring of products is essential to ensure shelf life dates are observed.

Additional storage requirements

The following general requirements also apply to the storage of food:

- Food should be covered
- Never store raw and cooked food together
- Never store raw food above cooked food.

Dry goods store

The dry goods store is a non-refrigerated store where canned and dried food is kept:

- The area must be fly and vermin-proof to minimise contamination by pests
- It must be well ventilated and lit – to deter pests and to allow staff to see what they are doing and identify and remedy spillages

- Never overstock – excess stock costs money, clutters things up, and the stock will not keep indefinitely
- It must be fitted with doors that make a proper fit when fully closed to help exclude pests
- No food is to be stored on the floor to minimise the likelihood of contamination from dirt which is walked in to the store – and to facilitate the cleaning of the floor
- Bulk food containers must be made from food grade materials and have tight-fitting lids (garbage bins are not permitted to be used for food storage) and containers must be cleaned and properly dried before refilling
- An effective stock rotation scheme must be implemented (FIFO) to ensure stock is used in correct sequence and old, deteriorated stock does not accumulate – it must be used, returned or rejected.

Refrigerated storage

Refrigerated storage includes cool rooms and other refrigerated storage units including domestic refrigerators, under-counter units. They are used to store for fruit and vegetables, dairy products and meat:

- Temperature – should be 0°C to 4°C, checked with a thermometer and not reliant on a thermostat
- Coolroom door should be closed between uses and an effort made to minimise opening times by planning openings – an open door raises internal temperature and increases running costs
- Food loads put into the refrigerator should be broken down into smaller units to enable faster cooling – where large units of food are placed in the refrigerator it takes a lot longer for the core to chill
- Foods should be allowed to cool (perhaps in tubs placed in iced baths) before being placed in the cool room – frequent stirring of the item will help it to cool quicker. Hot food will raise the cool room temperature and may cause condensation which could lead to cross contamination

- The cool room should not be overcrowded as air must be able to circulate freely around food items
- Dairy products should be stored in their original wrapper with opened cheeses being resealed or stored in air-tight containers
- Products in jars (such as mayonnaise or pickles) must be re-capped and refrigerated after opening
- Foods past their ‘use-by’ date must be discarded as they may provide a source of contamination
- Appropriate stock rotation (FIFO) must be employed – use date and time labels.

Answer key for the self check
LG#32, Lo1

Self check #1

I. Choose the best answer. 3 pts each

1._____is a detailed description of an ingredient or menu item used to specify items to purchase or receive.

A. specification D. standardization C. Production D. All

2. Specification consists one of the following information

A. Pricing unit B. Standard or grade C. Weight range D. All

3. _____ simply the amount of product remained after cooking, trimming, portioning, or cleaning.

A. Product name B. Product yield C. Range D. All

4. Product specification indicate the best quality and price of a product'

A. True B. False

5. Checking specification while receiving food and beverage items is crucial to get the desired product.

A. True B. False

Self check #2

II. Choose the best answer. 3 pts each

6. **Temperature is checked in order to**
   B. Protect food intoxication B. Food poisoning C. Curb microbial growth in food D. All
7. **Temperature shall be checked during**
   B. Transporting B. Storing C. Preparing D. All
8. **One is potentially hazardous food?**
   B. Meat B. Fish C. Ham D. All
9. **One of the following food items can be stored at room temperature?**
   B. Meat B. Fish C. Ham D. None
10. **One is odd from the following?**
    B. Egg B. Milk C. wheat D. Fish

Self check #3

Short Answer

5. **What is the role of using purchase order in receiving proper and undamaged goods? (5 pts)**
6. **What is supposed to be recorded and checked on a new delivery?**

   The date and time goods arrived
   • The name of the delivery partner and driver
   • Check off quantities and description of goods against purchase order
   • Note any discrepancies
   • Names of the personnel who performed these checks

7. **What is damaged item?**
8. **What should the receiver do if** damaged items found when receiving items?

Self check #4

Short Answer (5 pts each).

6. What is excess stock?
   It occurs when inventory levels exceed forecasted demand.
7. Mention common causes of excess stock**?**
   - Inaccurate demand forecasting
   - Poor replenishment tactics
   - Lack of product life cycle tracking

8. _____ involves ordering the right amount of stock and the right time to meet forecasted demand.
   Inventory replenishment
9. What is inventory optimization?
   The process of achieving low inventory levels while maintaining high service levels
10. Cite the Common misconceptions of excess stock?

Excess stock achieves higher service levels efficiently

Excess stock allows higher safety stock levels.

LG #33, LO2

Self check #1

Short Answer 5pts each.

4. **What are important precautionary measures taken when Storage and Shipping?**
    - Identify the hazards associated with storing your finished product.
    - If the finished products need refrigeration, store them between 1°C and 4°C. Store frozen products at -18°C or less.
    - Store materials that are sensitive to humidity under humidity-controlled conditions.
    - Rotate stock to ensure oldest products are shipped first to maximize their retail shelf life.
    - Treat condensate trays with sanitizer to prevent the growth of harmful bacteria that could **cross-contaminate** employees' clothing or skin or other areas of your plant and eventually food products
5. What is the importance of keeping the cleanliness of transporting vehicles and containers?
    - **To curb microbial growth and avoid cross contamination**
6. **Mention inspection activities before loading vehicles?**

    - it is at the right temperature for the product being shipped
    - it can keep the product at the right temperature throughout the journey
    - the temperature can be checked during the journey
    - the vehicle is in good condition, clean, free of odours and free of any signs of rodent or insect activities
    - the product is effectively protected from contamination, including dust and fumes
    - cleaning records are available

Self check #2

Short answer 4 pts each

4. **What is appropriate storage temperature?**
    - Conditions inconvenient for pathogenic growth
5. **What is important to do for** storing food safely in fridges?
    - Keep the fridge door closed as much as possible
    - Wait for food to cool down before you put it in the fridge
    - Turn the temperature down to help keep it cold enough if the fridge is full
6. **What is the importance of keeping food in a controlled temperature?**
    - To help stop bacteria from growing

Self check #3

Short Answer 5 pts each.

4. **What are the** basic information incorporated in labeling of products? Product name , quantity of content, nutritional information, ingredients, and manufacturer or distributor, allergen contained, Mng and exp date
5. **What is the relevance of labeling products?**
   - **To sale more of our product by building confidences of consumers**
   - **It is legal obligation in many countries**
   - **To indicate the content of the product**
   - **To cite the manufacturing and expire date of the product**
6. **What could you do if incoming products are not properly labeled?**
   - **Will not receive the product**

LG #34 LO3

Self check #1

4. **What is FIFO?** First lot of stock that comes into your warehouse should be the first that goes out - that is, sent into stores or sent directly to customers.

5. **What is LIFO?** The most recent stock to come into your warehouse should be sent out first.
6. **Write benefits of FIFO& LIFO?**
   FIFO- *First in first out" is a great strategy if your products have a shelf life.*
   LIFO- Allows you to match your most recent costs against your revenue

Self check #2

Short answer 5 pts each

3. **What is the use of avoiding temperature danger zone while moving food items?**
   To avoid cross contamination and microbial replication in food
4. **What is temperature danger zone?**
   Temperature danger is a temperature range that suits the growth of pathogens in food.

Self check #3

Short answer 10 pts

2. **Write inspection steps where quality control checklists are vital**

Pulling random samples for inspection
Checking the product against specifications
Verifying packaging requirements
Classifying and reporting quality defects
Conducting on-site testing

Self check #4

3. **Write methods for the disposal of food**

- Destroyed
- Disposed of so that it cannot be used for human consumption
- Returned to supplier. .

4. **Explain why food needs to be disposed of promptly**

- **Avoid cross contamination and microbial infection**

Self check # 5 5 ptd each

3. When you identify any problem with items, what should you do?

- Take action to fix
- Report it.

4. After tracing a problem with supplies whom shall you report to?

- For immediate supervisors

Self check # 6 5 pts each

Choose the best answer

1. **Which one of the following is a prerequisite measure to be prevailed in a catering business to implement food safety program**
   - **A. Maintenance and cleanliness should be a habitual practice**
   - **B. Using reputed supplier**
   - **C. Having standardized equipment D. All**
2. **Food is susceptible for microbial infection at**
   A. 41 ^{o}F-140 ^{o}F B.5 ^{o}C-60 ^{o}C C.-18 ^{o}C -0 ^{o}C D.63 ^{o}C -75 ^{o}C E.A&B
3. **One can result in chemical hazard?**
   A. Allergens B. Salmonella C. gravel D. None
4. **One is odd.**

A.Additives B. Staphylococcus C. Allergens D. all

5. Good food handling practice can alleviate the risk of food contamination

A. True B. False

The trainers who developed the TTLM

No	Name	Qual.	Educational background	Region	E-mail
1	Getahun Desalegn	A	Hotel and tourism	Addis Ababa	Desalegngetahun21@gmail.com
3					
2					
4					
5					

Reference

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