1. Harvesting the Crop

Harvesting refers to the collection of plants that have commercial value, such as fruits (tomatoes, peppers, apples, and kiwifruit), edible roots (beets and carrots), leafy vegetables (spinach and Swiss chard), bulbs (onions and garlic), tubers (potatoes), stems (asparagus), petioles (celery), as well as flowering crops such as broccoli and cauliflower. Harvesting represents the final stage of the growing period and the beginning of preparation for marketing the produce.

Harvesting can be carried out either manually or mechanically. In some crops, such as onions, potatoes, and carrots, a combination of both methods is used, where machinery is employed to loosen the soil and facilitate manual collection. The choice of harvesting method depends on the type of crop, its intended use, and the area to be harvested. Generally, fruits and vegetables intended for the fresh market are harvested by hand, whereas crops destined for processing or large-scale production are most often harvested mechanically.

Mechanical harvesting is characterized by its speed and lower harvesting cost per ton; however, it may cause damage to the crop. Therefore, it is recommended only for crops that are harvested once. For this reason, the decision to purchase such equipment must be carefully evaluated, taking into account the initial investment, maintenance costs, and long periods of downtime. In addition, all stages of the production process must be adapted to mechanical harvesting, from land preparation (row spacing, field leveling, pesticide application, and crop selection) to the choice of varieties capable of withstanding rough handling. Post-harvest operations such as grading, cleaning, packaging, and marketing must also be planned to accommodate large volumes.

Manual harvesting, on the other hand, requires no initial investment and is more suitable for crops with extended harvesting periods. It also provides employment for a large workforce, allowing harvest rates to increase during peak periods, such as rapid ripening caused by favorable climatic conditions. The main advantage of manual harvesting lies in the human ability to select produce that has reached the appropriate level of maturity and to harvest it carefully, thereby improving product quality and minimizing damage. This is particularly important for fragile crops. However, proper training and close supervision of harvesting teams are required, as studies have shown that produce harvested without supervision is more prone to bruising than produce harvested under close supervision.

The type of contract established with harvest workers also has an impact on the quality of the harvested product. Payment based on working time (weekly, biweekly, or monthly) generally results in a more careful but slower harvesting process, whereas payment calculated according to the number of boxes, length of rows, or number of plants harvested leads to faster harvesting, but sometimes in a more rough manner. The training of work teams and the division of labor also influence harvest quality.

Long working hours and/or short rest breaks, as well as unfavorable climatic conditions (excessive heat or cold), may result in improper handling of harvested products. Finally, it is very important to provide adequate training for agricultural workers, particularly regarding the selection of produce that has reached the desired level of maturity and the proper cutting and separation techniques, in order to minimize damage to both agricultural products and plants.

2. Determine the harvesting period

Determining the maturity of crops is not always easy. While size and color can often provide good guidance in most cases, some crops require more experience (e.g., melon). Nothing is more unpleasant for a consumer than eating a vegetable that is overripe (e.g., stringy beans) or underdeveloped (e.g., immature corn). Very ripe fruits, and to a lesser extent overripe vegetables, generally have poor storage life. Ultimately, it is a matter of experience: the expected shelf life must be balanced with the timing of sale.

A diversified vegetable grower faces a significant challenge because they must manage a large number of crops. However, products are usually not stored for long periods.

A general recommendation is **not to wait until vegetables become very large before harvesting**. Consumers increasingly appreciate mini-vegetables (e.g., baby carrots, mini-leeks), especially in summer. Few people use large cabbages nowadays. In this regard, **the choice of varieties and planting distances** is very important.

Table 1: Specific Harvesting Tips for Certain Vegetables. https://www.agrireseau.net

Vegetable	**Harvest Guidelines**
Beans	Since they are costly to harvest by hand, the number of passes should be minimized. Aim for three harvests from the same plants, sometimes only two.

Cucumbers	Multiple plantings or successive sowings are necessary (about every 10 days) for a constant supply. For example, transplant the first crop and sow the next two. Always harvest all fruits that are ready and never let them fully ripen, otherwise the plant's production will slow down.
Melons	Probably the hardest harvest to judge for maturity. Several indicators show melon maturity: the contact point with the soil changes from white/green to yellow/beige; for cantaloupes, the stem detaches when the fruit is rotated half a turn; the leaf closest to the stem dries out; aroma; the skin becomes less shiny. For watermelons, surface lines become raised to the touch; the sound should be dull and hollow rather than clear (like hitting the chest rather than the head); the tendril closest to the stem dries out.
Tomatoes	Plant maturity is ideal for both taste and nutritional value. If the product is for a distributor, it can be harvested once the fruit begins to turn from green to white.
Zucchinis	Watch out for "baseball bat" zucchinis! Harvest frequently once production starts, depending on growth rate. Do not let fruits grow too large, as this slows plant production.
Onions	For storage, the onion neck should normally bend at maturity. If the neck remains hard and green, the onion will not store well. However, if the onion is for fresh summer sales, the neck does not need to soften.
Garlic	For storage, garlic is pulled when about one-third of the foliage turns yellow, usually around late July in southern Quebec.
Broccoli	A second harvest is possible after the main head is harvested. Although this takes more time, the small secondary heads are highly appreciated.
Beets	If the foliage is free from cercospora or other diseases, it can be left for sale. Consumers prefer beets no larger than 7.5 cm in diameter. Be careful of hardening in overmature beets!
Carrots	Storage carrots become sweeter after a hard frost in mid-autumn.

Vegetables that are highly perishable and have tender leaves should be harvested shortly before sale. Therefore, it is best to pick lettuce, leafy greens, fresh herbs, and vegetables sold with their leaves and tied in bunches (such as carrots, beets, Swiss chard, and green onions) on the morning of the sale or delivery, as early as possible while they are fresh and firm.

However, if delivery is scheduled early in the morning and a cold storage room is available, it is preferable to harvest them the day before to ensure they are well-cooled before shipping.

Vegetables grown in greenhouses are also best harvested very early in the day so that they are at a cool temperature at the time of picking.

Fruit vegetables, on the other hand, can be harvested at any time of the day, even at night! Nevertheless, field-grown tomatoes, cucurbits (such as cucumbers and squash), and cruciferous vegetables (such as broccoli and cauliflower) are best harvested during the day, when the foliage is dry, to prevent the spread of bacterial diseases among the plants.

3. Proper Execution of Harvesting

Proper harvesting involves collecting crops in a way that preserves their quality, minimizes damage, and ensures their safety until they reach the market or the consumer. It should be carried out according to specific principles, such as:

- ⇔ **Choosing the appropriate harvesting time:** perishable vegetables and leafy greens are preferably harvested in the cool morning hours to remain fresh and firm, while fruit vegetables like tomatoes and cucumbers can be harvested at any time of the day, although harvesting during the day is recommended if the plants are wet to avoid bacterial disease
- ⇔ **Gentle handling of products:** is one of the most important post-harvest practices. Sharp and clean tools should be used to minimize tearing or puncturing fruits and vegetables. Additionally, crops should not be thrown or pressed inside containers, in order to reduce damage and bruising and to ensure that the products reach the market or consumer in good condition.
- ⇔ **Using appropriate containers** is essential for maintaining the quality of harvested crops. Containers should be clean, smooth, and free of sharp edges. Crops should be packed in a way that prevents friction and excessive pressure. If the fields are far from the storage or market, containers with ice or cold water can be used temporarily to help maintain the proper temperature.
- ⇔ **Pre-cooling after harvest** is an important step to maintain the quality of vegetables. Crops should be placed in a shaded area or subjected to ventilation or water cooling when appropriate. However, some vegetables, such as cabbage, potatoes, and tomatoes, are not

suitable for direct water cooling. The main goal is to quickly reach the optimal storage temperature and maintain it until the products are sold.

⇔ **Training workers** is essential to ensure proper post-harvest handling. Workers should be taught how to select ripe fruits and remove damaged parts. Emphasis should be placed on gentle handling of products to minimize damage. Wearing gloves and maintaining personal hygiene are also important to prevent contamination

The objectives of proper harvesting include minimizing damage and bruising during harvest and transportation, preserving the quality and nutritional value of the product, extending shelf life while reducing economic losses, and improving the product's reputation in the market to increase farm profitability.

4. Proper Evaluation of Yield

In agricultural planning, determining the expected yield begins with assessing the quantity of vegetables that can be produced in the field. This evaluation is essential before the actual harvest, as it helps the farmer plan effectively and make the most of available resources.

The first step in this assessment is estimating the potential yield for each crop. Initially, farmers rely on average yield figures for each type of vegetable, such as kilograms or tons per hectare, based on previous experience or reliable sources.

Once production begins, it becomes important to assess the actual field yield rather than relying solely on average estimates. This is usually done by weighing the harvested vegetables from specific sample areas and then extrapolating to the entire field. Taking multiple samples is essential to ensure accuracy, as productivity can vary across different parts of the field.

When evaluating yield, it is also crucial to distinguish between total yield and marketable yield. Total yield includes everything harvested, while marketable yield refers to the portion that meets quality standards, such as appropriate size and being free from disease or damage. This distinction is important because some of the harvest may be excluded from sale due to quality issues.

Method for Estimating the True Yield Target:

⇔ **Optimal Rolling Average Method**

The basic idea is to rely on actual field yield data from previous years. The method works by taking production data from the last seven years, excluding the three lowest-yield years (which

may have been affected by poor conditions such as drought or disease), and then calculating the average of the remaining four highest-yield years. This approach provides a realistic yield target based on the field's best possible performance while minimizing the impact of poor years. It is the most commonly used method in the United States for accurately estimating yield targets.

⇔ **Adjusting Existing Yield Data**

The basic idea is to make use of any previous yield records for the field. The method works by calculating the historical average yield and then adding a small increase of 1–2% to determine the expected yield target. This approach is simple and quick, providing a realistic preliminary estimate until more data become available. It is typically used when only limited yield records exist and long-term data are not available.

⇔ **Using Data from a Similar Field**

The basic idea is to take advantage of the production experience from a similar field. The method works by using the average yield of another nearby field that has the same soil type, climate conditions, and crop as a reference point. This approach provides a reasonably accurate estimate when data for the current field are limited. It is typically used when sufficient data for your own field are not available.

⇔ **Using Local Variety Performance Trials**

The basic idea is to rely on locally conducted crop trials to evaluate different varieties. The method works by comparing the performance of specific varieties in the field, noting their highest and lowest yields to determine the expected yield range. This approach helps identify which varieties are best suited to local conditions and provides a realistic yield target for each variety. It is typically used when estimating yield targets for new or unfamiliar varieties.

⇔ **Using Local Statistical Averages (e.g., USDA-NASS)**

The basic idea is to make use of official yield data by county or state. The method works by taking the average yield for the crop in the region as a reference point and then adjusting it according to the specific conditions of your field. This approach provides a good estimate when long-term field records are not available. It is typically used for initial yield estimation or when planning new crops.

⇔ **Using Soil Productivity Maps**

The basic idea is to rely on soil classification and its natural ability to produce crops. The method works by using soil maps to determine the production potential of each plot of land, even if no historical yield data are available. This approach is useful for estimating yields of new or previously uncultivated fields. It is typically used when no historical yield records exist.

Finally, accurate yield evaluation is very important, as it helps farmers improve planning for the next season, adjust cultivation, irrigation, and fertilization strategies, plan the quantities for market and storage, and estimate costs and revenues realistically, thereby enhancing farm efficiency and profitability.

5. Conditioning of Harvested Products

After harvesting, fruits, vegetables, roots, and tubers require special handling to ensure the preservation of their nutritional quality and to minimize losses. This process involves steps designed to protect the products from biological, mechanical, and thermal damage, thereby improving their shelf life and market value.

The main steps in post-harvest product handling are:

a. Sorting and Cleaning

The sorting and cleaning stage is the first step in post-harvest product handling. During this stage, unwanted debris and residues are removed, and the produce is sorted according to size and quality. These procedures help reduce the spread of diseases, improve the overall appearance of the product, and prepare it properly for packaging or storage.

b. Initial Packaging and Cooling

After sorting, products are usually placed in suitable containers or boxes to maintain their shape and reduce friction and bruising. In many cases, it is also recommended to rapidly cool the products after harvest to slow down respiration and other metabolic processes that contribute to rapid spoilage, especially for highly perishable items such as leafy vegetables and soft fruits.

c. Selecting Appropriate Packaging

Proper packaging is a crucial part of post-harvest product handling. It should be clean and non-toxic to ensure food safety, allow adequate ventilation to prevent moisture buildup, and be strong and durable to protect the products during transport and handling in the market. Effective packaging helps minimize mechanical damage and reduces thermal stress, ensuring that the products maintain their quality until they reach the consumer.

d. Preliminary Treatment When Needed

In some cases, additional processing may be performed, such as a light washing to remove dirt and bacteria, controlled surface drying before packaging, or sorting products by size or quality to ensure uniformity in the final product. These treatments aim to preserve product quality before storage or distribution.

Proper handling of products after harvest plays a vital role in reducing losses caused by biological or mechanical damage, preserving the nutritional value of fruits and vegetables, and improving their overall appearance to increase marketability. It also helps extend the storage life of products before they reach the consumer and ensures compliance with the quality and safety requirements of both local and international markets. These practices align with the objectives of post-harvest management, helping to minimize waste and enhance the economic returns for farmers.

6. Proper Selection of Packaging

Food packaging is the collection of materials designed to protect the nutritional, sensory (flavor, aroma, texture), and functional quality of a food product throughout the chain of manufacturing → storage → distribution → consumption

Packaging can be categorized into several types based on its function. Primary packaging comes into direct contact with the food and must be compatible with the product, protecting it from external influences. Secondary packaging protects the unit or facilitates its use and is commonly used for displaying and selling the product. Tertiary packaging, also known as transport or shipping packaging, is designed to protect products during shipment and handling in the market.

a. Important Criteria to Consider When Choosing Packaging

When selecting packaging, several important criteria should be taken into account to ensure it performs its function effectively. The packaging should have high **visibility** to attract the consumer's attention and possess strong **appeal** by being visually attractive. It must also offer good **readability**, allowing consumers to easily read the information printed on it. Additionally, the packaging should convey a clear and honest **identity** that reflects the product accurately, while also providing **differentiation** to help the product stand out from competing items.

Selecting the right packaging materials is a strategic decision that affects product safety during transportation, operational efficiency, and costs. Proper packaging ensures that the product reaches the consumer in good condition, maintains its quality, and increases customer

satisfaction. Additionally, appropriate packaging can improve storage and logistics while minimizing environmental impact

Packaging materials vary depending on the level of protection, weight, and application required. **Wooden packaging** is commonly used for crates and pallets in transportation and storage; it is durable, customizable, and suitable for stacking, though it can be heavy, sensitive to moisture, and may require treatment for international shipping. **Corrugated cardboard** is lightweight and strong, available in single, double, or triple layers, providing shock absorption and ease of stacking. **Foam packaging** protects against impacts and vibrations, with materials like polyurethane, Ethafom, polystyrene, and polypropylene, allowing customized solutions for delicate products. **Plastic packaging** offers versatile and sturdy solutions, such as rigid shock-resistant boxes or composite lightweight boxes for easy transport. Finally, **flexible packaging**, including films, bags, and wraps, is lightweight, convenient, and supports efficient logistics

Selecting the appropriate packaging depends on several key factors.

- ⇔ First, the **product characteristics** such as size, weight, sensitivity to shocks, vibrations, heat, or humidity, as well as its chemical composition, especially if it is reactive or corrosive, play a major role.
- ⇔ Second, **transport and storage requirements** must be considered, including the mode of transport (land, sea, or air) and storage conditions like temperature and humidity, while ensuring the packaging allows for easy handling, stacking, and protection.
- ⇔ Third, **protection needs** require packaging that can absorb shocks and vibrations, safeguard against moisture, vapor, and corrosion, and, for heat-sensitive products, provide special thermal insulation. Fourth, **cost** is important, including material price, durability, potential for reuse, and how weight and dimensions affect shipping expenses.
- ⇔ Fifth, **environmental sustainability** should be considered, favoring recyclable or biodegradable materials and accounting for the full life cycle from production to disposal.
- ⇔ Finally, **reusability and durability** matter, as reusable and sturdy packaging reduces waste and long-term costs while withstanding multiple uses

7. Proper site layout according to the type of product

a. Choosing the Market or Sales Area

When selecting a market or sales area, it is important to designate a clear space, whether inside a building or outdoors, that is away from environmental contaminants or industrial zones that produce harmful gases. The display or sales surface should be elevated above ground level to reduce contamination and prevent dirt from entering, ensuring a clean and safe environment for the products

b. Hygiene, Lighting, and Ventilation

The site should be clean, well lit, and properly ventilated to allow easy movement for vendors and customers and to reduce unwanted humidity. Floors, walls, and ceilings should be made of materials that are easy to clean and free from cracks or peeling paint, in order to maintain good hygiene conditions

c. Essential Service Areas

A designated area should be provided for washing fresh fruits and vegetables, supplied with continuous potable water. When possible, cooling equipment, humidification rooms, or ripening chambers may be installed according to operational needs

d. Space Allocation According to Product Type

Specific areas should be designated for storing packaging materials, cleaning tools, cleaning agents, water, and other supplies, and these areas must be completely separated from food products to prevent contamination. In addition, a dedicated loading and unloading area should be clearly defined so that it does not interfere with sales or storage areas

e. Handling and Storage of Products

Display units such as crates and pallets should be made of materials that do not cause contamination to fruits and vegetables, for example by avoiding exposed nails or metal residues. Fruits and vegetables must be placed on display units and should never be left directly on the ground. Products should be displayed in a way that prevents damage or crushing, and damaged or low-quality items should be regularly sorted out and removed during display

f. Water Supply and Storage

Only potable water should be used for washing or spraying fruits and vegetables. A clean water storage system must be available, and water quality should be periodically tested by accredited laboratories. Indoor storage of fruits and vegetables should be organized in a way that prevents cross-contamination with non-food materials

g. Pest Control and Waste Disposal

Measures should be taken to prevent the entry of pests, insects, and animals into the site by using fences or protective screens. Fruit and vegetable waste must be disposed of in a hygienic manner, with proper separation between wet and dry waste to maintain a safe and clean environment

h. Transportation and Distribution

Areas designated for loading and unloading products should be clearly defined and located close to storage areas in order to minimize the time between arrival and sale. Vehicles used for transportation must be clean and free from pests and contaminating substances to ensure that products arrive in good condition

i. Training and Record Keeping

Basic training should be provided to vendors and workers on hygiene practices and the safe handling of fruits and vegetables. Documents and records, such as supplier information, pest control activities, and waste disposal procedures, should be properly maintained and organized to enhance food safety

8. Proper execution of transportation

Transport vehicles act as temporary storage units, so maintaining optimal conditions inside them during transportation is crucial to preserve the quality of fruits and vegetables

a. Temperature Control Inside Transport Vehicles

Transport vehicles, such as trucks or containers, should be refrigerated to maintain a consistent and uniform temperature throughout the journey. Fluctuations in temperature can lead to product quality loss and accelerate spoilage. Modern refrigeration systems use multiple sensors to ensure even cooling distribution within the cargo, as the presence of hot or cold spots can reduce product quality. The main goal is to keep the temperature within an appropriate range for each type of product, preventing overheating or overcooling during transportation

b. Handling During Loading and Unloading

Workers should be trained to handle containers and crates gently during loading and unloading, avoiding throwing or dropping them, as this can cause bruising and damage to the products. Cargo inside the vehicle should be strategically organized, with delicate products placed in

protected areas. For example, fragile items such as strawberries or lettuce should be positioned where they are not exposed to shocks or excessive pressure, and heavy products should never be placed on top of delicate ones. The goal is to maintain the shape and quality of the most sensitive products while minimizing the risk of bruising or mechanical damage during transport. Additionally, exposure to ambient temperature outside the refrigerated system should be minimized during loading and unloading, as prolonged exposure can reduce the effectiveness of the pre-established temperature control system

c. **Load arrangement** based on product sensitivity, with the most fragile items placed in protected positions

9. Adherence to proper storage conditions

a. Science of Refrigerated Storage

Storing fruits and vegetables under refrigerated conditions slows down natural processes that cause spoilage, such as respiration and enzymatic activity, helping to maintain product quality for a longer period. Refrigerated storage effectively puts the product in a state similar to "suspended vitality," reducing chemical reactions and microbial growth

b. Temperature Control

Maintaining a low and consistent temperature is essential for refrigerated storage. Most fruits and vegetables should be kept between 0 °C and 4 °C to extend their shelf life. It is very important to ensure that the temperature remains stable, as fluctuations can cause issues like condensation and uneven humidity, which accelerate spoilage.

c. Air Management (Ventilation)

Good air circulation within the storage unit helps distribute temperature evenly and prevents the formation of “hot spots” and “cold spots.” Ventilation reduces the buildup of heat generated by the respiration of fruits and vegetables. It also helps remove harmful gases, such as ethylene and carbon dioxide.

d. Humidity Management

Maintaining a relative humidity between 80 % and 95 % is important for keeping products fresh. If the humidity is too low, the products lose water. If the humidity is too high, the risk of diseases and bacterial growth increases.

e. Monitoring Transpiration and Respiration

Fruits and vegetables continue to “breathe” after harvest, consuming oxygen and producing heat and gases such as ethylene. In refrigerated storage, it is important to understand the respiration rates of each type of produce to manage storage conditions appropriately.

f. Storage Strategies by Product Type

Leafy vegetables require temperatures closer to 0 °C. Cold-sensitive fruits, such as tomatoes and avocados, need slightly higher temperatures to avoid chilling injury. Fruits and grains with low respiration rates can be stored for longer periods under stable refrigerated conditions.

g. Continuous Monitoring and Control

Effective storage requires real-time monitoring of temperature and humidity. Some storage facilities use automated systems to continuously adjust conditions and trigger alarms if any unwanted changes occur.

h. Economic and Environmental Benefits

Proper refrigerated storage practices reduce food waste and extend the time products can be displayed in markets. Reducing losses increases profitability for farmers and traders.

i. Controlling Environmental Conditions During Storage and Transport

To ensure product quality, it is essential to regulate temperature and humidity inside storage rooms or refrigerated vehicles, provide adequate air circulation between boxes and containers, and use proper insulation and refrigeration equipment to reduce losses. It is also important to measure the temperature of the products themselves, not just the surrounding air. Before loading products into refrigerated vehicles, they should be properly cooled, arranged to allow air circulation, and handled without delays between cooling and loading to prevent temperature rise and quality loss. For long trips, maintaining the ideal temperature and appropriate humidity inside the vehicle or container throughout the journey is crucial.

j. Cold Chain

The concept of the cold chain involves minimizing the time between harvest and cooling, storing products at appropriate temperatures, and maintaining control of environmental conditions until they reach the market. Any break in this chain can lead to increased losses and a decline in product quality.

10. Entreposage correct du produit

⇔ **Temporary Storage Before Sale** If it is necessary to store products before selling them in wholesale or retail markets, storage rooms should be clean and well-insulated to maintain appropriate environmental conditions. It is also important that these areas preserve the lowest temperature suitable for the products.

⇔ **Practical Steps for Proper Storage** Upon receipt, the temperature of products should be checked immediately, preferably between 0 °C and 4 °C for refrigerated items. The stock should be moved quickly to the storage area within 20 minutes of delivery. It is also important to record storage dates in the refrigeration room and organize products using the FIFO (First In, First Out) system.

⇔ **Do Not Mix Incompatible Products** When storing different types of fruits and vegetables, goods that require different temperatures should not be mixed. Similarly, products sensitive to ethylene should be kept away from those that produce ethylene, as this can cause undesirable changes in color, taste, and texture.

⇔ **Recommended Temporary Storage Temperatures** For storage periods of less than approximately seven days, products can be divided into three groups based on their suitable storage temperatures as follows

Storage Group	**Ideal Temperature**
0–2 °C	Vegetables and some types of melon and greens
7–10 °C	Certain vegetables and moderately sensitive fruits
13–18 °C	Fruits that can tolerate higher temperatures

It is important to maintain a relative humidity of 85–95 % and an ethylene level below 1 part per million to improve the quality of short-term storage.

⇔ **Sort and Remove Damaged Products Before Storage** Before storage or sale, products should be sorted to remove damaged or spoiled items. This improves the appearance of the remaining products and reduces quality loss during storage.

⇔ **Controlling Water Loss** Water loss leads to a reduction in product weight and deterioration in appearance and quality. To preserve water in the product during storage, it is important to maintain appropriate relative humidity around the product and store it in areas where the air does not dry out quickly. Most vegetables are stored at high relative humidity (90–100 %) to prevent water loss.

- ⇔ **Minimizing Mechanical Damage** Fruits and vegetables are delicate and fragile after harvest, and any rough handling can cause bruising and damage. To minimize this, handle products carefully during transport and loading, use clean and smooth-edged boxes, and avoid repeated shocks or impacts during loading and storage.
- ⇔ **Avoiding Contamination** Sorting and careful culling are important before storage to remove damaged products. Removing spoiled items reduces the spread of fungal and bacterial diseases to the rest of the produce during storage. Washing products helps remove soil and contaminants before storage.
- ⇔ **Important Considerations for Storage** Fresh fruits should not be stored for long periods and are best purchased as needed, since their shelf life is short. Unripe fruits can ripen at storage temperatures of 10 °C–15 °C, while ripening occurs more slowly in a refrigerator. Damaged or spoiled fruits should be removed before storage, as a single bad piece can affect the quality of the entire batch. Some products, such as bananas, change color quickly in the refrigerator and should therefore be stored at 10 °C–15 °C away from cold storage. Storage duration varies by type: hardy vegetables like carrots and cabbage can last a week or more, whereas sensitive vegetables such as lettuce have a short shelf life and should be consumed quickly. Surface moisture can accelerate spoilage by softening vegetables and causing decay.