

STORAGE METHODS OF READY TO EAT FOODS IN RETAILER SHOPS

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Abstract: The present study is to review and analyze the importance of storage methods of processed food products. Food storage is the process in which food is stored in suitable condition for future use. Due to growing urbanization, changing food habits, lack of time for working couples, processed food storage is gaining importance in recent days. Modern storage methods play important role in processed food storage, which prevents the entry of insects, rodents and microorganisms. Scientific packing methods and storage methods were also introduced for extending shelf life of processed food products. The study reveals the necessity of introduction of advanced storage technology in retail shops to provide hygienic food to the consumers.

Keywords: Shelf life, Ready to eat, Preservation.

1. INTRODUCTION

Food storage is the process in which both cooked and raw materials are stored in appropriate conditions for future use without any entry or multiplication of microorganisms.

IMPORTANCE OF FOOD STORAGE:

It's important to take care how you store food to make sure it's safe to eat. Storing food is a very important domestic skill that has been practiced by humans for ages. Leftover foods do not have to go to waste. These leftovers can be stored and eaten in the future. Proper food storage helps lengthen the shelf life of foods. Food Storage helps in Protecting food from insects and pests. Improperly stored foods can attract pests and insects. Food Storage helps in emergencies. It is always better that to have survival food storage at home just in case calamities, such as typhoons, hurricanes, tsunamis and earthquakes. it may be difficult to bu in calamities . However, it is important that to consume these stored foods and replace them regularly. Consume first those foods prepared earlier. Check from time to time the expiration dates of canned goods, milk, ready to eat foods etc.. Any expired foods are not fit for human consumption and must be thrown away. Eating expired goods can lead to food poisoning. A Ready to eat food product may be defined as any food product which doesn't required any elaborate processing procedures on the part of the consumer before it is good enough for consumption. It is ready to eat as the pack is opened in a form which is tasty and appetizing

HISTORY OF READY TO EAT FOODS:

The ready to eat foods brought by united states military for its soldiers for use in combat. In first world war canned foods were replaced with light weight preserved foods to save weight and carry more quantity. Ready to eat foods concept that is prevalent in the developed world since long. But it is introduced to Indian market recently. With the globalization, Changing socio economic pattern of life and increased number of working couples, The concept is fast becoming popular.

TYPES OF READY TO EAT FOODS:

Ready to eat foods includes:

1. Cooked food.
2. Raw fruits and vegetables

3. Baked food.
4. Dried sausage.
5. Snack foods.
6. Beverages

2. SCOPE FOR STORAGE OF READY TO EAT FOOD

Nowadays it is difficult to eat a diet based only on fresh, unprocessed foods. The major portion of our family's food needs comes from processed food products that add variety to our diets and convenience to our busy lives. Processed foods enable consumers to shop less frequently and to stock a wide range of foods on which to base varied and nutritious meals.

The inclusion of a wide range of foods, be it fresh, frozen, canned or otherwise processed enables consumers to reach their recommended daily intakes. . The key for consumers is balance and variety – no one food provides enough nutrients to survive, and each method of processing affects nutrients differently.

Storage of ready to eat food products saves time and labor.

The demand for ready to eat food is increasing due to growing urbanization, changing food habits, and its extended shelf life, and its availability in off market shelves.

Though there is demand for ready to serve food like Idli, Dosa, Pavbhaji, Chapathi, their shelf life is short.

Ready to cook food like instant mixes – cake mixes, Gulab jamun mixes, Ice cream mixes, jelly mix and pasta products-like Noodles, Vermicelli also has good demand in recent days, their preparation needs elaborate processing procedures and time.

Due to lack of time to working couples in urban areas for cooking of foods the demand for ready to eat food is increasing.

3. CAUSES FOR SPOILAGE OF READY TO EAT FOODS

Spoilage of ready to eat food is a natural process that starts soon after its preparation .Bacteria, yeasts and moulds are the most common causes of food spoilage. Enzymes naturally present in the food can also cause spoilage. Ready to eat food can appear fine but contain food borne pathogen. They should be stored in proper container to minimize exposure.

The presence of pathogen in ready to eat food can be detected by appearance or smell. Food with off odors and mould growth must be discarded, some food borne pathogen cause food toxicity. listeria can cause miscarriages in pregnant women or fatal death to new borne children. Adults also are susceptible to infection. Listeria monocytogenes can multiply at refrigerated temperatures, and during extended storage can achieve levels hazardous to human health. Therefore containers used in storage of ready to eat food should be kept clean to prevent microbial infection. Symptoms of food poisoning can occur within 30 minutes after eating or an hour later.

4. STORAGE METHODS OF READY TO EAT FOODS

Cup boards, freezers, Refrigerators, must be kept clean. Foods should be stored in original packing or food grade containers.

The length of time and temperature at which food was held before it reaches seller shop, decides its freshness. Storage temperature and humidity in the shop and storage containers play important role in maintaining its quality. In cooler storage temperatures' food will maintain its quality longer. .

Keep storerooms cool, dry and well ventilated. The temperature should be between 50°F and 70°F. The cooler, the better. Temperature has more to do with how long ready to eat foods store than anything else. The storage lives of most foods are cut in half by every increase of 18°F (10°C). Cool storage reduces respiratory activity and the degradation of enzymes; it reduces internal water loss and inhibits the growth of decay producing organisms.

As part of maintaining optimal temperature, it is suggested that adequate ventilation should be provided (some air exchange rate is absolutely essential). In addition, the storeroom should be free of un-insulated steam and water pipes, water heaters, transformers, refrigeration condensing units, steam generators or other heat producing equipment.

Ideally, storage areas should have a humidity level of 15% or less. Unless the storeroom is located in the desert, consider air conditioning or dehumidification during the most humid times of the year. A second option is to use moisture impervious packaging. Ideally, there is no reason not to use both.

Maintain stored foods in their original packages whenever possible. Most packaging is designed for the food it contains and will remain in good condition for their given shelf-life in the absence of temperature and humidity abuse. For instance, the cardboard box will help cushion jars and other glass containers from breakage. If original packaging is not practical, maintain the food in airtight containers, primarily to prevent the entry of insect and rodent pests and keep out other contaminants. To take this to another level, consider oxygen as a major threat to the quality of food. The chances are that moisture-proof packaging is also airtight. The less head gas (<2% O₂) in a package, the longer its shelf life is maintained.

Avoid storing foods in direct sunlight. Sunlight promotes oxidation and the subsequent loss of the food's nutritional value and quality. Fat-soluble vitamins, such as A, D, E and K are particularly sensitive to light degradation. It is far better to block sunlight on windows and skylights and rely on artificial illumination for the time the storeroom is in use. Store dry foods at least six inches off the floor and at least 18 inches away from outer walls to reduce the chances of condensation brought on by temperature differences between the container and the surface against which it rests, as well as to facilitate cleaning and pest control activities. It is also suggested that a 2-ft. ceiling clearance be maintained to avoid high temperatures at the ceiling.. containers should be taped or otherwise secured to prevent entry of contaminants and prevent further spillage .

To prevent the entry of insects, rodents and birds into the storeroom, doors and windows should be rodent and insect-proofed and kept closed whenever possible. Any opening to the outside should be sealed and all structural cracks and crevices promptly repaired. Bait boxes, if needed, should be regularly monitored and any damaged bait boxes and spilled bait should be carefully cleaned up and removed. If fumigation is absolutely essential, rely only on experienced licensed control operators.

Along these lines, the exterior of the building in which the storeroom is located should be maintained free of fire hazards, pest infestations and to preclude any security problems.

Shelving can be constructed of suitably finished hard wood, durable plastic or preferably of corrosion resistant metal. It goes on to recommend that the highest shelf for practical use should be 7 ft. and the lowest should be 6 inches from the floor. Clearance between the shelves should be at least 15 inches. To calculate the total shelving needed, the following formula is applied, where D = depth of the shelves in feet; H = clearance between shelves in feet; and C = 80% effective capacity of shelf height:

Linear feet of shelving for storage(ft.)=Volume per meal x number of meals between deliveries D x H x C
Cup board or pantry storage is used for dry food staples such as flour, crackers ,cake mixes, Pasta and canned foods. Ready to eat foods must be stored in container with tight fittings lids. These protects contents from insects.

The growth of pathogen or spoilage microorganisms does not takes place in refrigerators or freezers. Foods should not be stacked tightly in refrigerator shelves for air circulation. Air tight containers must be used to reduce transfer of odor between foods.

The growth of molds can be seized by keeping the surface of food moisture free. Vacuum packing is an excellent way to maintain quality of dried foods. The best quality and nutritive value of dried foods remain for above 12 months, after which quality be deteriorated.

Regular cleaning of vaccume packing machines, slickers, fridge, coolers, slices is important to avoid deterioration of food by harmful bacteria. It is not advisable to use same machines and equipments for both raw foods and RTE foods, because RTE foods will not be cooked or re-heated before serving.

Keep ready to eat food covered all the time during preparations and storage, because they cannot be re cooled or cooked again before servicing wrap food with appropriate plastic or foil wraps or use air tight containers.

Keep the food in dry, cool, and dark areas. Open food boxes and others resalable containers carefully so that you can close them tightly after each use. Zip packing is introduced to avoid such problems in recent days.

Inspection of all food for signs of spoilage before use is necessary. Outdated foods must be replaced with fresh foods. Place the new item at the back of the storage area and older ones in front. During storage, periodic visual inspections of

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products should be carried out to ensure that any perishable food product for which food safety may be compromised are removed and that product specifications should be respected when they exist (ex. Best Before Dates, Use By Dates, etc.).

In refrigeration the food must be kept at 41 degree celcius colder and the air temperature should be at 30 degree F or colder.

In freezer, the food must be kept at 0 degree celcius or colder. In dry storage the best temperature is 50 degree F -70 degree F, and humidity level is between 50% to 60% .Cup boards should be cleaned periodically to remove crumbs and food particles on shelves and in corners or cracks , because these attracts insects pests .

It is better to buy ready to eat foods from reputable suppliers or companies. Avoid ready to eat foods left uncovered on counters. Avoid packing food that is just manufactured and is still warm. Refrigerate it overnight before packing Containers used for storing raw foods should not be used to keep ready to eat foods. Keep raw foods separate from ready to eat foods.

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