



Volume 6 Issue 2, December 2023, pages: 13-22

ANALYSIS OF THE APPLICATION OF FRUIT AND VEGETABLE STORAGE AT THE GRAND ISTANA RAMA HOTEL BALI

**Wahyu Padma Baskara^{1*}, Thomas More Elang Eucharisto², I Ketut Krisna Drana
Wasistha³, Ahmad Soimun⁴, Putu Mia Arista Sari⁵**
Logistics Management, Bali Land Transportation Polytechnic^{1*234}
Management, Udayana University⁵
baskara.2102037@taruna.poltradabali.ac.id

Received: 23/05/2023

Revised: 02/06/2023

Accepted: 03/07/2023

Abstract

Hotel operations are not only about room rentals. Customer satisfaction with the services provided is also assessed from the cuisine served at the hotel restaurant. Fulfilment of customer satisfaction, especially in the food sector, is supported by qualified storage infrastructure. This study aims to determine the important role of cold storage in fruit and vegetable storage at Grand Istana Rama Hotel Bali. Data collection techniques using the interview method of resource persons, namely food management and beverages department. In addition, research is carried out through direct observation of activities, and literature and literature studies as secondary data. Data analysis is carried out in a qualitative descriptive manner by summarizing, describing, and analysing the condition of the situation at the hotel. Based on the results of the study, it was found that cold storage is considered very important in restaurant operations, especially when food ingredients arrive at the hotel but are not immediately processed. Cold storage has benefits for maintaining the quality and freshness of fruit raw materials, avoiding viral and bacterial contamination, and reducing the use of preservatives in fruits and vegetables. This research will provide information related to the process of storing fruits and vegetables using cold storage to maintain freshness.

Keywords: Storage, Freshness of Groceries, Cold Storage, Hotel Bali, Distribution Distance

1. INTRODUCTION

Bali is a province in Indonesia with tourist attractions that have been known to the international world. Based on data from the National Central Statistics Agency in March 2023, the number of tourists visiting Bali reached 377,276 people. (Central Bureau of Statistics, 2023) This potential needs to be supported in terms of adequate facilities and infrastructure, to continue to generate tourist growth. These facilities and infrastructure such as facilities that are a means of fulfilling the needs of tourists when visiting tourist destinations, access which is a way to tourist attractions, and additional services in the form of facilities that are important in supporting tourists who come to Bali One of the most important facilities needed by domestic and foreign tourists is a hotel because it is used as infrastructure for resting or temporary stay (Sri Aryanti, 2019).

In addition to being tasked with providing lodging facilities, the hotel is also obliged to provide consumption needs, in the form of food and drinks during the guest's stay at the hotel or outside guests who are visiting the hotel. Having the task of preparing consumption in the form of food and beverages certainly requires the right effort, so that you can obtain quality processed products. The quality of processed food depends on the basic ingredients of the process. Therefore, good and proper storage of foodstuffs is needed. This aims to maintain the taste of a food or drink to remain delicious in the condition of fresh basic ingredients (Sri Aryanti, 2019).

The type of basic ingredients that often experience problems in food quality, namely with the type of perishable. Perishable is a food that is not perishable, easily damaged, and wilted, so it requires special treatment and attention in handling (Mokodongan et al., 2021). Foods that are categorized as perishable, one of which is fruits and vegetables. The above food ingredients are commonly consumed by humans and become staples in a hotel restaurant. In the process of delivering fruits and vegetables to the hotel, of course, you must pay attention to the distance traveled to determine the proper handling of goods using a cooling machine. This is because, because the delivery of vegetables and fruits over long distances without using a cooling machine, it will reduce the quality and nutrition owned by the fruit (Muh. Arhim, 2017).

In the hotel business, especially restaurants related to food and beverages, there is a tendency of spoilage and loss in trimming in its operational activities. Spoilage is a problem with damaged materials due to jammed storage machines, while loss in trimming is the process of selecting materials to be cleaned and sorting between good and bad material conditions (Siaputra et al., 2019). Often, spoilage is one of the factors causing cost differences in restaurants because damaged materials are simply thrown away without data collection and supervision. As a result, the restaurant gets the impact and affects the financial recording at the end of the match due to decaying processed materials.

From the description of the problem, the basis of this research was carried out to be able to look deeper into technological and scientific advances in the positive impact given in the business world by analyzing the application of fruit and vegetable storage at the grand palace rama hotel Bali. The right method of storing perishable food to reduce losses due to rotting processed basic materials. This resulted in a decrease in the level of consumer confidence in the taste of hotel cuisine. In addition, it is also to determine the role of cold storage in the process of storing food ingredients in restaurant operational activities. Therefore, it is necessary to need information related to the importance of using cold storage in the process of storing food ingredients carried out by restaurants.

2. LITERATURE REVIEW

Cold Storage is a cooling device that is able to store objects that require a cooling process in terms of storage (Grace, 2015). Cold storage units are indispensable in everyday life to carry out the process of cooling and preserving perishable foods, such as vegetables, fruits, and meat. In the industrial world, cold storage is used to cool food that is used as raw materials or finished materials. One industry that uses cold storage, namely restaurants and hotels.

Food can be defined as products that are used as food ingredients that are safe, have nutritional content, and are healthy for the human body. Food will cause a deviation that can be dangerous for humans if the management is not done properly. Procedures for managing food from beginning to end will greatly determine the condition of food that

has perishable properties. Therefore, it is necessary to pay attention in terms of available food storage methods (Umanailo, 2019).

Food delivery is a process carried out to distribute food from suppliers (farmers) to hotels. Delivery of food with the type of fruit and vegetables needs to be considered in terms of distance to determine the use of cold storage (Muh. Arhim, 2017). Delivery of fruits and vegetables in close distances does not require cold storage, even fruits and vegetables can be harvested when ripe so that the nutritional content is maximized, while in long distances delivery requires cold storage to store ripe vegetables and fruits, and if you do not use them, fruits and vegetables must be in immature condition (Muh. Arhim, 2017).

On the other hand, in terms of storage is a method of managing goods that is useful for carrying out the process of structuring, storing, and maintaining foodstuffs. The implementation procedure, namely if the food received has met the requirements, it will be taken to the storage room in the form of a warehouse or refrigeration room. Storage has an important role in the framework of processing (Sarni, 2017) perishable foods that are not durable, easily damaged, and wilted.

As for one hotel that has implemented a storage method, namely Lv8 Resort Hotel, the application process is by classifying food ingredients to meet standards and temperatures, recording food ingredients received in accordance with SOPs, and food ingredients such as fruits and vegetables are given storage date labels to apply the First In First Out (FIFO) concept (Diana, 2022).

Fruits and vegetables are food ingredients derived from plants. Fruit is a food that contains optimal nutrition consisting of protein, fat and small carbohydrate content. Vegetables are the end result of plants that have good nutritional needs for the body, so they are suitable for consumption (Nurainy, 2018).

Therefore, this study made observations related to the use of cold storage as a means of storing food in hotels. This is because the hotel certainly needs fresh food to provide food for visitors.

3. RESEARCH METHODS

This research was conducted using qualitative methods. The data will be presented in a descriptive analytical manner, which is to describe an existing phenomenon by giving an objective picture of the actual state of the object under investigation and presenting the results of the study. The type of data that the author uses is in the form of primary data derived from in-depth interviews. In addition, this research is also supported by secondary data derived from theses, journals, theses, and others as research support (Yanita, 2016).

The location of this research was conducted at Grand Istana Rama Hotel Bali, which is located on Jalan Pantai Kuta, Kuta District, Badung Regency, Bali Province. The hotel provides full-scale hotel facilities. The hotel is not only limited to holiday guests, but can also incorporate corporate meetings. The hotel also provides business facilities, including meeting rooms, ball rooms and meeting packages. Therefore, this hotel really maintains the quality of food, especially from fruits and vegetables to provide satisfaction to customers. The location of the study as shown in figure 1.

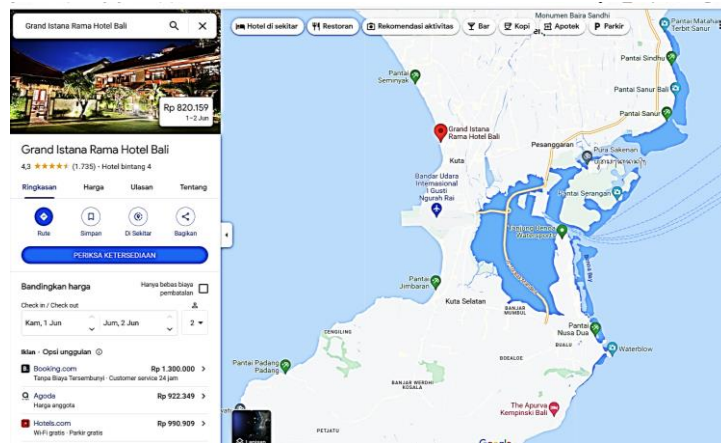


Figure 1. Research Location of Grand Istana Rama Hotel Bali
Source: Google Map

The implementation of this research was carried out during office working hours, namely on Wednesday, 10 August 2022 and Monday, 15 August 2022 with primary data collection starting at 09.00 -15.00 WITA.

In this study, the data collection techniques used, namely:

a. Qualitative: interview

The main technique of qualitative data collection is an in-depth interview guided by an interview guide. The interview aims to obtain in-depth, open, and free information based on problems and research focus directed at the research center. In this case the in-depth interview method is carried out with the presence of guidance through a list of questions that have been prepared in advance (Rosaliza, 2015).

Interviews were conducted with important resource persons who were in the research location determined by purposive sampling, namely sampling techniques by representing related groups in the research problem. In-depth interviews were conducted to obtain information related to research problems. Therefore, in this case the author conducted an interview with the hotel's Food and Beverage Manager, as the party responsible for handling the food used.

b. Observation

In addition to interviews, researchers also conducted observations carried out at the Grand Istana Rama Hotel Bali. This is so that researchers can observe and record things that occur at the location according to actual conditions. In addition, through this, the author will get more information related to the process of storing fruits and vegetables carried out by the hotel to maintain its quality.

c. Literature Studies and Literature Studies

In addition, as secondary data the author uses documents in the form of archives. This technique aims to collect data from documents owned by related agencies, articles and archives from mass media and literature books as secondary data in terms of supporting primary data obtained in the field.

In conducting the data analysis process, the author uses qualitative descriptive. In qualitative research, data analysis activities include analyzing, describing, and summarizing various conditions, situations from various data collected in the form of interviews and observations about problems studied in the field. The choice of this method is based on, because the results of the research obtained are able to describe a realistic view of the social world that has been experienced by the source, where this cannot be measured numerically (Rijal Fadli, 2021).

4. FINDINGS AND DISCUSSION

4.1 Profile of Interview Respondents

In this study, the author interviewed Mr. I Ketut Darmayasa, S.I., Pem., M.M., CHT, as Food and Beverage Manager at Grand Istana Rama Hotel Bali. In terms of determining the location of the study, the criteria used, namely located in tourist areas and often serve local and foreign tourists. In addition, the company is also very dependent on the supply of fruits and vegetables to support the performance of service quality to tourists in providing food.

4.2 Types of Foodstuffs

In terms of obtaining data on the types of fruits and vegetables used by the company, the author conducted an interview with Mr. I Ketut Darmayasa, S.I., Pem., M.M., CHT, as Food and Beverage Manager. Based on the results of the interview, in general, fruits and vegetables are needed by the hotel to make dishes for tourists. The criteria for fruits and vegetables used must meet the criteria of demand from foreign and domestic tourists. These criteria have been set based on the hotel's experience in serving food to tourists. Through this, the hotel can find out what fruits and vegetables are preferred by foreign and domestic tourists. Types of fruits used, namely:

Table 1. Types of Fruit Used by The Hotel

No	Types of Fruits
1	Banana
2	Pineapple
3	Mango
4	Papaya
5	Watermelon
6	Melon
7	Avocado
8	Red and white onions and bombay
9	Corn
10	Chili
11	Tomato
12	Salak
13	Wine
14	Orange
15	Apple

Source: Analysis Results

Meanwhile, the dominant types of vegetables are used, namely:

Table 2. Types of Vegetables Used by The Hotel

No	Types of Vegetables
1	Carrot
2	Broccoli
3	Water spinach
4	Cabbage
5	Mustard
6	Spinach
7	Green beans
8	Sprouts
9	Cabbage
10	Lettuce
11	Eggplant
12	Siamese pumpkin
13	String beans

Source: Analysis Results

Judging from the needs of fruits and vegetables used by the hotel, the company really needs cold storage to carry out the storage process to maintain its quality and immediacy.

4.3 Benefits of Cold Storage

Looking at the use of fruits and vegetables for the provision of menus for hotel visitors, cold storage is needed. As for the benefits of its use, namely:

- a. Able to maintain the quality of fruits and vegetables stored, so that it will avoid decay that will lead to losses.
- b. Able to extend the shelf life of fruits and vegetables used, so as to avoid repeated orders, which will create cost savings.
- c. Providing satisfaction to customers, because they are able to provide food with good quality and fresh.
- d. Make it easier for chefs to process the raw materials provided.
- e. Able to control the desired temperature for storing fruits and vegetables.
- f. Reduce repeated purchases of fruit and vegetable raw materials, thus saving distribution costs.

4.4 Type of Cold Storage used

- a. Freezer



Figure 2. Freezer
Source: Briliofood, 2021

Freezer is a cooling device that has a temperature ranging from -20C to -70C. This tool is used by the company to maintain the quality of food raw materials, especially meat raw materials that must remain frozen as long as they have not been processed by the company's kitchen. Through this tool, it will be able to prevent damage from stored materials, so that it can last for a long time.

- b. Chiller



Figure 3. Chiller
Source: Briliofood, 2021

Chiller is a cooling device that has a temperature ranging from 0OC to 8OC used to store food raw materials in the form of fruits and vegetables that must be maintained freshness, so that it will improve the quality of the food served by the hotel. Through this tool, it can prevent rottenness in fruits and vegetables, so as to avoid repeated orders.

c. Refrigerator



Figure 4. Refrigerator
Source: Briliofood, 2021

Refrigerators are also needed in the storage of fruits and vegetables in the hotel. This cabinet is usually used in storage for a short period of time. This is because the refrigerator only has a temperature of 3oC. Refrigerators are usually placed on Kitchen/ hotel main kitchen. This aims to avoid the influence of excessive temperature in the processing of fruits and vegetables that will soon be processed to be served to tourists.

4.5 Storage Concept

In the application of the storage concept that has been obtained from the results of interviews and analysis carried out the design of the existing storage at the Grand Istana Rama Hotel as shown in figure 5.



Figure 5. Fruit and Vegetable Storage Process at Grand Istana Rama Hotel
Source: Analysis Results

Based on the results of interviews and observations conducted, it was found related to fruit and vegetable storage procedures carried out by Grand Istana Rama Hotel using cold storage. This is done starting from the mode of transportation that brings fruits and vegetables from suppliers to arrive at the hotel. After that, raw materials must be immediately unloaded and checked the quality of raw materials, it is done because in shipping does not use cold storage.

The inspection is directly supervised by parties involved in the procurement of raw materials, namely purchasing management, kitchen, and suppliers. This aims to avoid fraud committed by one party. If the inspection has been carried out and defective or damaged raw materials are found, the supplier will replace them in accordance with the agreement. After that, raw materials with good quality will be sorted according to type and will be cleaned to maintain cleanliness. Furthermore, the fruits and vegetables will soon be moved to cold storage to maintain the quality of raw materials.

The fruit and vegetable storage warehouse are divided into 2 parts, namely the central warehouse and the daily warehouse. The central warehouse contains a large amount of fruit and vegetables that will not yet be used in the hotel kitchen. This warehouse aims to carry out large-scale storage that is not directly used in the company's operational activities. In general, the location of the central warehouse tends to be far from the location of the company's operational activities. While the daily warehouse is a storage warehouse containing fruits and vegetables brought from the central warehouse which will then be processed immediately by kitchen.

The daily warehouse aims to store fruits and vegetables that will soon be processed by the hotel. The location of the daily warehouse tends to be close to the kitchen, this aims to maintain the temperature of the warehouse and reduce movement in and out of the warehouse which can cause contamination or temperature changes that can cause a decrease in the quality of food raw materials.

4.6 Origin of Food

Based on the results of the interview, information was obtained that all fruits and vegetables came from the Bedugul area, especially those located in the Yellow Temple Market. Fruit and vegetable supplies will be sent by suppliers to customer locations, which are carried out regularly every day, especially in the morning with a distance of 61.1 Km.



Figure 6. Yellow Temple Market
Source: Detik.com, 2020

Based on the results of the interview, with these conditions the supplier and company do not need a cold box on the way, but still need cold storage immediately in storing after arriving at the destination location. Deliveries made every day in the morning aim to ensure the quality of fruits and vegetables delivered in optimal conditions. This is because the harvest process is carried out in the morning. The supplier that provides fruits and vegetables for the hotel has gone through a work contract, it aims to be committed to providing the needed supplies.

4.7 Determination of Distance and Distribution Time

The length of the distance traveled from suppliers located in the Yellow Temple Market, Bedugul to the Grand Istana Rama Hotel Bali, which has been determined through the use of applications Google Maps as in figure 7.

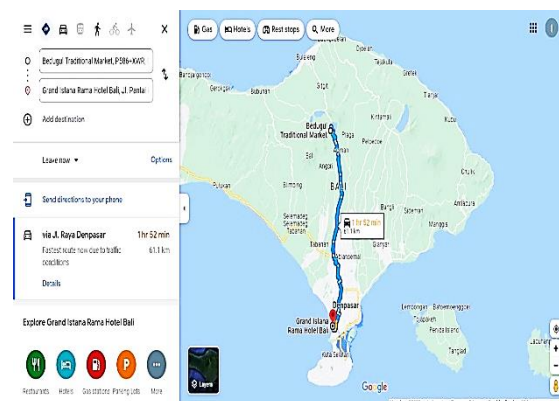


Figure 7. Results of Distributive Distance Analysis Using the Google Maps Application
Source: Analysis Results

Based on figure 7, the determination of distance and travel time is done using the Google Maps application. The determination was made starting from the supplier in the Bedugul Yellow Temple Market to the location of the Grand Istana Rama Hotel Bali. The results obtained, namely with a distance of 61,1 Km with a travel time of 1 hour 52 minutes. Looking at this, the supplier does not need cold box facilities to deliver fruits and vegetables to the hotel because the delivery time is done in under 2 hours.

5. CONCLUSION

Based on the research above, it can be concluded that cold storage in restaurant operational activities plays an important role. Broadly speaking, cold storage plays an important role in maintaining and extending the shelf life of fruits and vegetables used by the hotel. This will certainly provide optimal customer satisfaction through the availability of fresh food and reduce the company's operational costs for making repeat orders. The use of cold storage can be adjusted from the raw materials to be sent, when shipping, until arriving at the restaurant. The time needed in the delivery of fruit and vegetable ingredients made from the supplier to the Grand Istana Rama Hotel Kuta takes less than 2 hours, it indicates that cold storage is not needed in the distribution process from the supplier to the same company in Bali Province. The results of the analysis were carried out through the use of the Google Maps application, that the distance from the supplier to the hotel was only found with a distance of 61.1 Km.

On the other hand, when fruits and vegetables arrive at the hotel, these items will not be directly processed into food, therefore the use of cold storage is very necessary to

store raw materials from arrival to when they will be processed into ready-to-eat food. Cold storage has benefits for maintaining the quality and freshness of fruit raw materials, avoiding viral and bacterial contamination, and reducing the use of preservatives in fruits and vegetables. Food raw materials that have good quality and freshness, will be easy to process, so that it will increase the marketability of food to customers and optimize hotel revenue.

REFERENCES

- Central Bureau of Statistics. (2023, February 1). *Tourism Development of Bali Province December 2022*. [https://bali.bps.go.id/Pressrelease/2023/02/01/717787/Perkembangan-Pariwisata-Provinsi-Bali-Desember-2022.html#:~:Text=Wisatawan%20mancanegara%20\(Tourists\)%20who%20came,Which%20recorded%20asmany%20287,398%20visits](https://bali.bps.go.id/Pressrelease/2023/02/01/717787/Perkembangan-Pariwisata-Provinsi-Bali-Desember-2022.html#:~:Text=Wisatawan%20mancanegara%20(Tourists)%20who%20came,Which%20recorded%20asmany%20287,398%20visits)
- Briliofood. (2021, July 12). *8 Types of Refrigerators and Their Functions, Recognize the Differences*. <https://www.briliofood.net/Foodpedia/8-Jenis-Kulkas-Dan-Fungsinya-Ken-ali-Perbedaannya-210712p.html>
- Diana, N. G. A. P. L. (2022). ANALYSIS OF GROCERY STORAGE AT LV8 RESORT. *Journal of Tourism and Business Students*, 1(11), 3042
- Mokodongan, A., Kadir, P. A., & Pakaya, I. (2021). Food Storage System to Maintain the Quality of Food Ingredients in Kitchen TC Damhil UNG. *Ideas: Educational, Social, and Cultural Journals*, 7(2), 151. <https://doi.org/10.32884/ideas.v7i2.372>
- Yep. Arhim, W. (2017). Comparison of Purchasing Decisions Based on the Satisfaction Index of the Marketing Process Between Local Fruit and Imported Fruit at Hypermart Palopo City. *Agribusiness Study Program, Faculty of Agriculture*, 5(1), 3
- Nurainy, Fi. (2018). *Vegetable Material Knowledge Textbook I: Vegetables, Fruits, Nuts, Cereals and Tubers-Umbian*
- Grace, M. R. (2015). Cold Storage Design for Reagent Products. *Islamic University 45 Bekasi*, 3(1). <http://ejournal.unismabekasi.ac.id>
- Rijal Fadli, M. (2021). *Understand the Design of Qualitative Research Methods*. 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1>
- Rosaliza, M. (2015). Interview, A Communication Interaction in Qualitative Research. *Journal of Humanities*, 11(2), 72
- Sarni. (2017). Food Storage System at Tom's Cafe Tembilahan, Indragiri Hilir Regency, Riau Province. *Jom FISIP*, 4(2), 4
- Siaputra, H., Christianti, N., & Amanda, G. (2019). Analysis of Food Waste Management Implementation in Restaurant 'X' Surabaya. *Journal of Hospitality Management*, 5(1), 1–8. <https://doi.org/10.9744/jmp.5.1.1-8>
- Sri Aryanti, N. N. (2019). The Effect of Food Storage on the Quality of Food Ingredients in the Kitchen of the Patraresort and Villas Bali Hotel. *Journal of Tourism and Hospitality*, 3(1), 158–176. <http://www.disparda.baliprov.go.id/Statistik2>
- Umanailo, M. C. B. (2019). Consumption Diversification of Local Community. *AGRISEP Journal : Study of Socioeconomic Problems of Agriculture and Agribusiness*, 18(1), 61–74. <https://doi.org/10.31186/jagrisep.18.1.61-74>
- Yanita, H. (2016). Analysis of Rhetorical Structure and Linguistic Markers Part of the Results and Discussion of Research Journal Articles Can FKIP UNIB for the Field of Language Teaching. *Journal of Indonesian Language and Literature Education*, 2(2), 166