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Warehousing Operation of National Food Authority in Batangas City, Philippines

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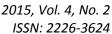PHILIPPINES

ABSTRACT

The main objective of the study is to evaluate the warehousing operation of National Food Authority (NFA)-Batangas. The research is basically a descriptive type of research that dealt with the warehousing operations of NFA. Results showed that warehousing operation evaluation in terms of inspection and quality control operation revealed that the warehouse workers have an excellent level of operation in maintaining the quality of products while the common problem they have encountered in the operation includes manual storing of the products, defective pallets, and spoilage of the product being stored. The pallets were not in good condition because the warehouse can't sustain right temperature to prevent it from deterioration caused by molds. Molds exist because the warehouse cannot maintain the proper humidity required for such warehouse. Dull-looking rice batches indicate excessive drying or self-heating. Birds waste invites pests that causes poor quality or rejected rice products.

Keywords: Warehouse Operation, Inspection, Quality Control, Storage

Introduction

The National Food Authority was created by virtue of Presidential Decree No. 4 on September 26, 1972, under the name National Grains Authority, with the goal of promoting the integrated growth and development of the grains industry. However, on January 14, 1981, it was transformed into National Food Authority, with the thrust of empowering wider commodity coverage. In addition to grains, other food items like raw or fresh and manufactured, processed or package food products were included. In 1980, a concrete 2-story building was constructed along the national highway located at Brgy. Balagtas, Batangas City. The Balagtas Provincial Office occupied the ground floor while the Regional Office was housed at the second floor.

This time NFA's activity has widened. Employees experienced working long hours even overnight without pay just to finish the inventory of goods and submit the report immediately the following day, this they called "labor of love". However, with the change of administration it is abolished. The current Provincial Manager of NFA-Batangas is Roberto C. Gonzales, a young,

dynamic, enthusiastic, optimistic leader, instilling the same values of discipline, and camaraderie. Today, NFA concentrated on its mandate of ensuring food security.

The ever increasing trend towards more product variety and short response times has placed a tremendous emphasis on the ability to establish smooth and efficient logistic operations. These operations even play a vital role in determining a company's competitiveness, since logistic costs constitute an important part of the overall production costs. The efficiency and effectiveness in any distribution network in turn is largely determined by the operation of the nodes in such a network, i.e. the warehouses. Indeed, the innovations in warehouse technology are numerous during the last decade. With respect to warehouse management, topics like planning and control have deserved wide attention in both the popular and scientific literature (Van den Berg, 1996) and the references therein.

A warehouse is a building with possibly many dock doors around the various sides, for the receiving, storing and dispatching of goods (Berg 2007). In the past, warehouses were referred to as cost centers and rarely adding value. But the increasing need for transfer of products across cities, countries and continents resulting from movement of production to the Far East, the growth in e-commerce and increasing demands from end users have seen a change about the perception of warehouses. They are vital components within today's supply chain (Richards 2011).

Warehouses are most likely involved in various stages of sourcing, production and distribution of goods, from the handling of raw materials, work-in-progress through to finish products. It is therefore apparent that different activities take place at a warehouse and thus, require different nature of facilities, staff as well as equipment to suit each function. With the vast nature of difference, warehouse operations could easily be the most costly element of the supply chain. (Rushton, Croucher & Baker 2010) According to (Richards 2011), the pressure is on warehouse managers to increase productivity and accuracy, reduce cost and inventory whilst improving on customer service. The successful management of the warehouse is critical in terms of the level of service provided, as well as the cost incurred (Rushton et al. 2010).

Important factors influencing process efficiency in the warehousing environment are e.g. layout choices and the policies by which work routines are controlled (Aminoff et al., 2002). It has also been claimed that the flow of information between different parts of a process can be significantly improved by taking advantage of information technology and increasing the level of automation (van den Berg &Zijm, 1999).

The overall flow structure should facilitate accomplishment of general warehousing objectives. In effect, this means that warehouse layout should be based on the space requirements and the interrelationships between 31 individual processes (Frazelle, 2002). Tompkins et al. (2010) suggest that the work simplification method can be used to minimize the total process flow. This approach includes delivering materials, information and people to the point where actual processes happen and eliminating any intermediate steps, planning for the flow between two consecutive points to take place in as few movements as possible, combining flows and

operations whenever possible by planning the movement of materials, information, and people to be combined with the processing steps.

Emmett (2011) describes the fork-lift truck as the workhorse of most stores and warehouses. They come in different varieties depending on their lift capacity and lift heights. Horberry (2011) outlines a problem of partially obscured vision of a forklift operator as a result of carriage of large loads. Also, transport equipment is sometimes needs to be driven in reverse while carrying a load; as the operator has to check the stability and clearance of the load.

Transport hazards are reduced with efficiency transport equipment. Examples are - eliminating the need to reverse help reduce reverse incidents; avoiding overloading helps to prevent poor vehicle handling, restricted visibility; and minimizing the number of trips made help reduce chances of incidents. (Horberry 2011)

Another means of avoiding collisions is by keeping clean working premises. Examples include the provision of suitable floor surface, keeping the walkways tidy and free from spills would avoid possible slips or falls. The lightning system must be of good standard to allow proper visibility. Also, ensure that pedestrian workers wear high visibility clothing and appropriate footwear to suit the type of floor surface. (Hughes and Ferrett 2010)

Objectives of the Study

This study evaluated the warehousing operations being adopted by the National Food Authority in Batangas City, Philippines with respect to inspection and quality control operation, storage operation and withdrawal operation; to determine the problems encountered in the warehousing operation; to test the significant relationship between the warehouse operation and problems encountered and to propose an action plan that can improve the warehousing operations of NFA-Batangas.

Method

Research Design

The research is basically a descriptive type of research that deals with the warehouse operations of National Food Authority-Batangas.

Participants

The respondents of the study composed of ten percent of the administrative personnel and five percent of the total warehouse worker of the National Food Authority-Batangas. The respondents are randomly selected. The respondents' frequencies are shown in Table 1.

Table 1: Frequency Distribution of the Personnel and Staff of National Food Authority-Batangas

Position	F	%	<CF	>CF
Managers	2	10	2	20
Grain Operations Officer	5	25	7	18
Mechanical Plant Operator	1	5	8	13
Laboratory Technician	1	5	9	12
Investigation Officer	1	5	10	11
Laborer	10	50	20	10
Total	**20**	**100**		

Table 1 shows the frequency distribution of the Personnel and Staff of National Food Authority-Batangas. Majority of the respondents are laborer with frequency of 10. Followed by Grain Operation Officer and Manager with frequencies of 5 and 2 respectively. Mechanical Plant Operator, Laboratory Technician and Investigation Officer obtained the lease frequency 1 with 5% respectively.

Instrument

Data are gathered through interview, observation, and related published and unpublished articles including books, theses, magazines and other pertinent and relevant materials. The researchers used survey questionnaires as the major instrument in the data gathering. The questionnaires were composed of four parts namely: inspection and Quality Control Operation, Storage Operation, Withdrawal Operation, and Problems Encountered inside the Warehouse.

Data Gathering Procedures

The research followed a certain course of action in order to achieve a precise result of the study. Contact the Company that will be involved in the research and preparation of the necessary documents required for the approval of the request. Personal visits to the warehouse and informal interviews with the warehouse personnel were conducted. Warehouse inspection provides the researchers the preliminary information and accounts for the appraisal of data. Content validation of questionnaire was also conducted. The researchers personally administered the validated questionnaires to the respondents.

Results and Discussions

Table 2: Inspection and Quality Control Operation

Inspection and Quality Control Operation	WM	VI	R
1. An assigned Quality Control personnel is available.	4.70	E	2
2. They used advanced technological equipment during inspection.	4.45	VG	4
3. They follow standard quality inspection procedure.	4.70	E	2

4. They conduct inspection according to a given schedule.	4.70	E	2
Composite Mean	4.64	E	

Table 2 shows that majority of the respondent said that there is an available assigned Quality Control personnel, they follow standard quality inspection procedure and they conduct inspection according to the given schedule with a weighted mean of 4.70 respectively, which has a verbal interpretation of Excellent. They also said they used advanced technological equipment during inspection with a weighted mean of 4.45 with a verbal interpretation, Very Good. The composite mean score of 4.64 signifies that there is an excellent inspection and quality control operation in the National Food Authority-Batangas.

Table 3: Storage Operation of NFA-Batangas

Storage Operation	WM	VI	R
1. The storage has enough space for the finish goods.	4.80	E	1
2. There are materials handling equipment.	2.25	P	4
3. The storage area is free from environmental hazards.	4.10	VG	3
4. The storage area is clean and well maintained.	4.35	VG	2
Composite Mean	3.88	VG	

Table 3 shows that most of the respondents said that the storage has enough space for the finish goods with a weighted mean of 4.80 on rank number 1. They also said that the storage area is clean and well maintained and free from environmental hazards as indicated by the weighted mean scores of 4.35 and 4.10 on rank numbers 2 and 3 respectively. There are material handling equipment obtained a weighted mean score of 2.25 which ranks last. This means that there is a very good storage operation as indicated by the composite mean score of 3.88.

Table 4: Withdrawal Operation of NFA-Batangas

Withdrawal Operation	WM	VI	R
1. There are materials handling equipment.	2.30	P	4
2. The raw materials are conserved during loading to production canister.	3.20	A	3
3. Availability of forms to withdrawal of raw materials.	4.10	VG	2
4. Raw materials are withdrawn using the first in first out operation.	4.30	VG	1
Composite Mean	3.48	VG	

Table 4 shows that majority of the respondents said that the raw materials are withdrawn using the first in first out operation as denoted by the weighted mean of 4.30 on rank number 1. They also believe that there is an availability of forms to withdrawal of raw materials indicated by the rank number 2 with the weighted mean score of 4.10. The raw materials are conserved during loading to production canister and there are materials handling equipment ranked 3 and 4 respectively. The composite mean score of 3.48 indicates that the withdrawal operation of NFA is very good.

Table 5: Problems Encountered in Warehousing Operations of NFA-Batangas

Problems Commonly Encountered	WM	VI	R
1. There are defective pallets.	3.10	A	2
2. Frequent equipment breakdowns are experienced.	2.05	D	4.5
3. There is no proper training for equipment operators.	2.05	D	4.5
4. There is a lack in equipment maintenance.	2.00	D	6
5. There is spoilage in products being stored.	3.05	A	3
6. Products are disorderly stored inside the warehouse.	1.95	D	7.5
7. Products are randomized stored anywhere inside the warehouse.	1.95	D	7.5
8. Products are manually stored.	3.65	MA	1
9. There is a lack of sanitary procedures inside the warehouse.	1.85	D	9
10. Pallets are placed anywhere inside the warehouse.	1.75	D	12
11. There is inadequate safety and security in the warehouse.	1.80	D	10
12. There is a lack of quality control and inspection.	1.75	D	12
Composite Mean	**2.25**	**D**	

Table 3.4 displays the problems encountered in warehousing operation of National Food Authority- Batangas. Manual storage of product is the main problem in the warehousing operation as indicated by the weighted mean score of 3.65 on rank number 1. Followed by there are defective pallets and there is a spoilage in products being stored with a weighted mean scores of 3.10 and 3.05 on rank numbers 2 and 3 respectively. Frequent equipment breakdown experience and no proper training for equipment operators obtained a weighted mean score of 2.05 on rank 4.5. Problem in equipment maintenance rank 6 with a weighted mean score of 2.00. Products are disorderlystored and randomized anywhere inside the warehouse obtain a weighted mean score of 1.95 on rank 7.5. Lack of sanitary procedures and inadequate safety inside the warehouse obtained weighted mean scores of 1.85 and 1.80 on rank numbers 9 and 10 respectively. Placing of pallets anywhere and lack of quality control and inspection obtained the last rank with a weighted mean score of 1.75.The composite mean score of 2.25 implies that the respondents disagree that they have problems encountered in their warehousing operations based on surveys.

Table 6: Relationship between the Warehousing Operations and the Problems Encountered of NFA-Batangas (Critical Value = ±0.4438)

Warehousing Operation	r-value	Decision	Interpretation

1. Inspection and Quality Control Operation	-0.035	Accept	Not significant
2. Storage Operation	-0.537	Reject	Significant
3, Withdrawal Operation	-0.539	Reject	Significant

Table 6 reveals the relationship between the Warehousing Operations and the Problems Encountered of National Food Authority-Batangas. The r-valuesof -0.537 of Storage Operation and -0.539 of Withdrawal Operation denotes that there is a significant relationship between the storage Operation, Withdrawal Operation and the Problems Encountered. Therefore the null Hypothesis is rejected.

This implies that there is a high performance evaluation rating in terms of storage and withdrawal operation as perceived by the administrative staff of National Food Authority-Batangas with low problems encountered during the operation. However, there is no significant relationship between the inspection and quality control operation and the problems encountered in the warehouse operations of NFA-Batangas as denoted by the computed r-value of –0.035 which is less than the critical value of 0.4438. Therefore the null hypothesis is accepted. This implies that the problems encountered by the employees are not factors that influenced the warehouse operation of NFA-Batangas.

Table 7: Proposed Action Plan

Objectives	Activity	Responsible	Time Table	Resources	Performance Indicator

To lessen the defective pallets and spoilage of product being stored	Adding ventilation machines	Quality Assurance officer	One Week	NATIONAL FOOD AUTHORITY-BATANGAS	Good airflow inside the warehouse , Less spoiled products
	Procurement of pest control devices	Branch Manager and Quality Assurance Officer	One Week		Pest are almost eliminated in the warehouse
To lessen the manual storing of products	Procurement of material handling equipment's	Branch Manager and Quality Assurance Officer	One Week	NATIONAL FOOD AUTHORITY-BATANGAS	Losses of grains during the storing was lessen

Conclusion

Inspections are usually non-destructive. The results are usually compared to specified requirements and standards for determining whether the item or activity is in line with these targets. Storage functions are usually an extension of receiving department duties. The basic functions of storage are the movement of products from the dock area to a holding location, the recording of the location and quantity, and the updating of storage records so that the product can be found easily when it is needed. Withdrawal operation is where the final steps are taken to prepare orders for shipment via the requested mode of transit. Due to the problems encountered in the Warehousing Operations, it may probably results to delays that will affect the company's cost. Based on the data gathered during the study, there is a high performance evaluation rating in terms of storage and withdrawal operation. And the problems encountered by the employees are not factors that influenced the warehouse operation of NFA-Batangas.

Recommendations

There is a need to implement new technology, both hardware and software, based on anticipated benefits. Remove existing nests and applied steel wool and mesh screening to deter repeat visitors of birds. Warehouses and birds don't mix well. Birds create an unsightly and unhealthy environment for employees, customers and visitors. Bird droppings, besides creating costly clean-up problems every day, can damage stored products and warehouse equipment. Many facilities' directors have found out that one reliable and unobtrusive way to control or eliminate the nuisance is to install ultrasonic devices. The high-frequency sounds effectively "bother the birds away" without harming them, keeping the warehouse building and dock areas

shipshape and safer. **Sonic bird control devices are easy to install, fully programmable, and extremely effective.** Broadcast bird alarm calls and predator cries that condition pest birds to stay away from the area – **one device cover multiple acres of land.** Property managers must keep facilities safe, and free of health hazards. Pest birds and their droppings create unsanitary conditions, and cause untold billions of cleaning and repair costs, liability and accident risk, contamination and disease.

Base on the observation and evaluation done by the proponents they suggested to purchase a forklift for the so that the operation will be easier. The use of forklifts allows companies to easily move goods around. It eliminates the need for manpower and reduces the amount of time required to move goods. Forklifts also allow companies to move things up and down to higher locations than what could be reached by hand.

The proponents recommend circulation fans as well as air coolers. Put air cooling and circulation where it is needed most. High-quality portable fans can easily be moved from one location to another. With these recommendations, it will keep the warehouse, workshop, building or business cool and dry with the proper circulation or exhaust fans. Built to handle maximum floor area in high moisture applications, heavy-duty high performance ceiling fans are great for winter heating or summer cooling and eliminate condensation — ceiling fans help to deliver maximum airflow over wide areas.

In reducing the amount of dust that coming out in the warehouse they must have a proper maintenance of the machine that produce too much dust that cause problem to the community near in the warehouse. Increasing the length of the walls that surrounds the warehouse can help to reduce the dust coming out from the facility.

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