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GOOD WAREHOUSING PRACTICE

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ABSTRACT

Good Warehousing Practices (GWP) are essential to ensure the efficient, safe, and compliant storage and distribution of goods. This includes implementing standardized procedures for inventory management, storage conditions, product handling, and quality assurance. GWP aims to optimize warehouse operations, reduce waste, prevent product damage, and ensure regulatory compliance, particularly in industries like pharmaceuticals, food, and manufacturing. Key elements of GWP include maintaining clean and organized storage areas, employing skilled personnel, conducting regular audits, and adhering to safety standards. By focusing on these practices, businesses can improve operational efficiency, reduce costs, and ensure that products reach their destination in optimal condition, thus fostering customer satisfaction and regulatory compliance.

Rice is the important food crop in the world and has become a staple food for more than half of the world's population. PT Agrobisnis Banten Mandiri (PT ABM) is a food distribution center in Banten Province that especially handles rice products. It is a must that a warehousing and distribution system be designed for quality assurance and food safety. This system is known as Good Warehouse Practices (GWP) dan Good Distribution Practices (GDP). This research aimed to study the implementation of the system, GWP and GDP, on rice

KEYWORD : *Warehouse layout, Stock Rotetion, Inventory Mangement, Shipping, etc*

1.INTRODUCTION

Good Warehousing Practices (GWP) refer to a set of standardized guidelines and procedures that ensure the safe, efficient, and compliant storage, handling, and distribution of goods. Effective warehousing is crucial to supply chain management, as it directly impacts inventory control, product quality, cost efficiency, and overall customer satisfaction. With the increasing complexity of global supply chains and rising customer expectations, the importance of maintaining high standards in warehousing operations has never been greater. GWP encompasses a wide range of practices, including proper storage conditions, product segregation, inventory management, employee training, and adherence to regulatory requirements. By implementing these best practices, businesses can mitigate risks such as product contaminatidamage, and stock discrepancies, while also optimizing warehouse space and improving operational performance. In industries such as pharmaceuticals, food, and consumer goods, where regulatory compliance and product integrity are

2. TYPE OF GOOD WAREHOUSING PRACTICE

2.1 Public Warehouse

Description : A warehouse that is owned and operated by a third-party service provider and available for rent by businesses. Public warehouses provide storage space, handling, and logistics services.

deal For Small to medium-sized businesses that don't want to invest in their own facilities.

Key Features Flexible space, short-term or long-term rentals, and shared facilities with other businesses.

2.2 Private Warehouse

Description: A warehouse owned or leased by a company for its exclusive use, typically to store its own inventory.

Deal For: Large businesses or enterprises with consistent storage needs and significant volume.

Key Features: Control over operations, location flexibility, and potential for customization.

2.3 Distribution Center (DC)

Description: A specialized warehouse designed for the rapid sorting, packing, and distribution of goods to retail locations or customers. It is often used in e-commerce and retail sectors.

Ideal For: Retailers or companies with high volumes of goods to distribute quickly.

Key Features :High throughput, automated systems for sorting and packing, efficient outbound logistics.

2.4 Fulfillment Center

DescriptionA type of warehouse that focuses on fulfilling orders, particularly in the e-commerce sector. These warehouses are designed for quick picking, packing, and shipping directly to customers.

Ideal For: E-commerce businesses that sell directly to consumers.

Key Features: Integration with online ordering systems, efficient pick-and-pack operations, direct-to-customer shipping.

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2.5 Climate-Controlled Warehouse

Description: A warehouse that maintains specific temperature or humidity conditions to store sensitive goods such as perishable foods, pharmaceuticals, or chemicals.

Ideal For: Businesses dealing with temperature-sensitive or perishable items.

Key Features: Refrigerated or climate-controlled environments, 24/7 monitoring, strict temperature regulations.

2.6 Bonded Warehouse

Description: A warehouse authorized by customs authorities where imported goods can be stored without paying customs duties until the goods are released for sale or shipment.

Ideal For: Importers or businesses involved in international trade.

Key Features: Customs-controlled, duties and taxes deferred until goods leave the warehouse, suitable for international trade.

3. MATHODOLOGY OFF GOOD WAREHOUSING PRACTICE

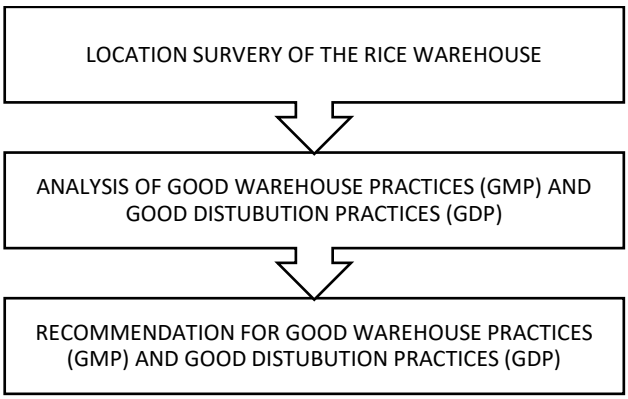
This research was conducted in September-October 2021 at PT. Agrobisnis Banten Mandiri (PT. ABM) as a warehouse and distribution center located on Jl. Raya Cilegon, Drangong, Taktakan, Serang City, Banten Province. The research method used is a descriptive method with a qualitative approach. This qualitative research describes and explains clearly and in detail the answer to the researcher's problem [4].

Implementation of GWP and GDP on Rice Product Case Study 47

Location survey of the rice warehouse

Analysis of Good Warehouse Practices (GWP) and Good Distribution Practices (GDP) (condition existing)

Recommendations for Good Warehouse Practices (GWP) and Good Distribution Practices (GDP)



A warehouse typically consists of several key areas, each serving a distinct purpose to ensure efficient storage, handling, and distribution of goods. Here are the main areas in a warehouse:

3.2 Receiving Area

Purpose This is where goods are received from suppliers or manufacturers. It includes unloading docks and staging areas where goods are inspected, sorted, and entered into inventory.

Key Activities Inspection, unloading, checking shipments for damage, updating inventory systems.

3.3 Storage Area

Purpose The space where goods are stored after they've been received, typically organized by product type or demand frequency.

Key Activities Shelving, racking, palletizing, and organizing inventory for efficient retrieval.

3.4 Picking Area

Purpose Where products are picked in response to customer orders or internal requisitions. It's typically organized to facilitate easy access to high-demand items.

Key Activities Order picking (manual or automated), sorting orders, assembling items for shipment.

3.5 Packing Area

Purpose Once items are picked, they are moved here for packaging, labeling, and preparing for shipment.

Key Activities Packaging, labeling, final inspection, creating shipment documentation, and preparing items for dispatch.

3.6 Shipping Area

Purpose This area is where goods are staged before being shipped out. It includes shipping docks where goods are loaded onto trucks or other transport modes.

Key ActivitiesLoading trucks, final checks on shipments, coordination with carriers for outbound transportation.

3.7 Returns Area

Purpose A designated area for handling returned goods from customers or suppliers.

Key Activities Inspecting returned products, restocking, returning to inventory, or disposition (repair, disposal).

3.8 Cross-docking Area

PurposeThis area allows goods to be transferred directly from receiving to shipping with minimal storage time in between.

Key Activities Sorting and redirecting incoming goods to outgoing trucks without prolonged storage.

3.9 Bulk Storage Area

Purpose A dedicated section for storing large quantities of products that are not picked frequently or are stored in bulk, such as raw materials or seasonal goods.

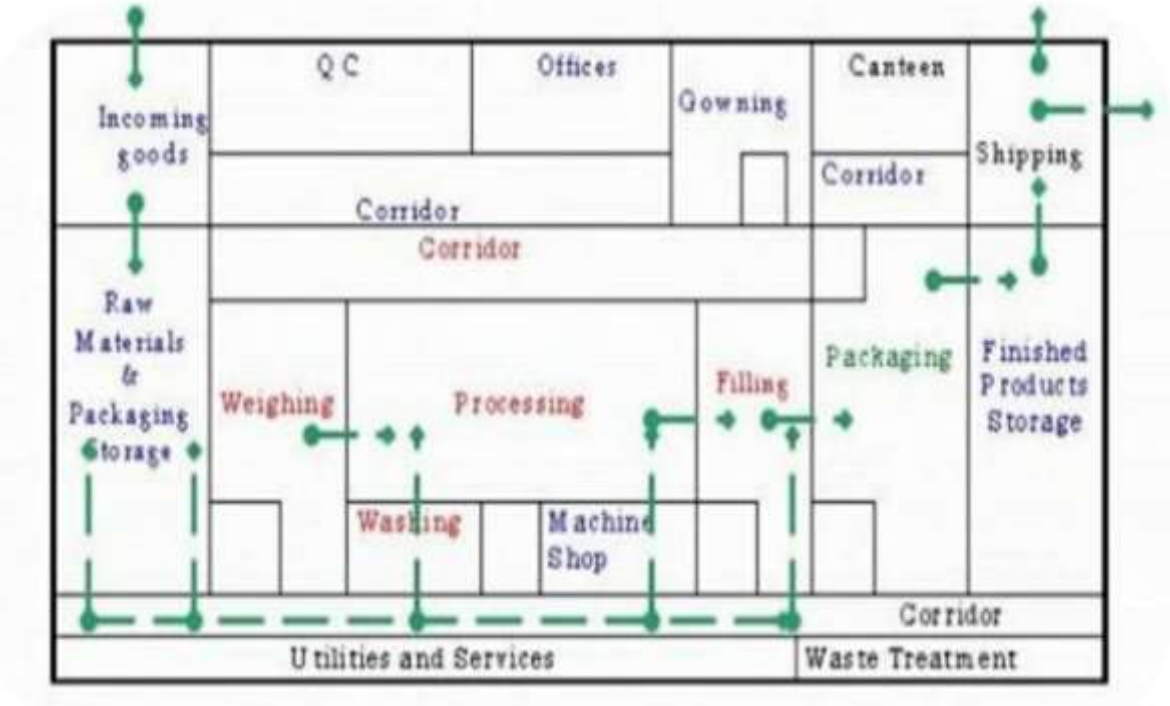
Key Activities Storing large or bulk items, typically on pallets or in crates.

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3.10 Temperature-Controlled Storage (Cold Storage) Area

Purpose For perishable or temperature-sensitive goods, such as food, pharmaceuticals, or chemicals.

Key Activities Maintaining a controlled environment (cold or frozen) for sensitive goods.



4. OBJECTIVE

The objective of good warehousing practices is to ensure the efficient, safe, and cost-effective management of inventory, while maintaining high standards of quality, security, and compliance. Key goals include

4.1 Optimizing Space Utilization

Ensuring that warehouse space is used effectively to store goods, allowing for easy access, inventory tracking, and minimal waste of space

4 .2 Ensuring Inventory Accuracy

Implementing systems and processes that maintain accurate inventory records, preventing stockouts or overstocking and minimizing errors in stock counts.

4.3.Improving Operational Efficiency

Streamlining workflows, from receiving goods to order fulfillment, to reduce lead times and operational costs

4.4 .Enhancing Safety and Compliance

Adhering to health and safety regulations, implementing safety protocols, and ensuring the warehouse meets legal and industry standards.

4.5 Reducing Damage and Lose

Protecting goods from damage during storage and transit through proper handling, secure storage practices, and regular maintenance of equipment.

4.6 Ensuring Quality Control

Monitoring goods to ensure they meet quality standards, reducing the likelihood of defective products reaching customers.

4.7 Facilitating Timely Distribution

Ensuring that products are readily available for efficient picking, packing, and shipping to meet customer demand on time.

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5. WORLD HEALTH ORGANIZATION (WHO) GUIDELINES (GWP)

provides guidelines for Good Warehouse Practice (GWP) primarily in the context of the storage and distribution of pharmaceutical products and medical supplies. These guidelines ensure that the integrity, quality, and safety of the products are maintained throughout their storage and handling process. The WHO's recommendations focus on various aspects such as proper conditions, safety measures, and best practices for storage to prevent contamination, damage, or loss of products.

5.1 Storage Conditions

Temperature Control Pharmaceutical products, especially vaccines and biologics, often require specific temperature conditions (e.g., refrigerated or frozen). Warehouses must have systems in place to monitor and maintain these conditions.

- Humidity Control Some pharmaceutical products are sensitive to humidity and must be stored in dry conditions.
- LightingStorage areas should be well-lit to ensure safe handling of products, but direct sunlight or excessive heat should be avoided.

5. 2 Security and Safety : protect sensitive product from tempering unathorized acces it measures can implamented

5.3 Access Control

The warehouse must have restricted access, and only authorized personnel should be allowed entry. This is especially critical for controlled or high-value drugs.

5.4 Security System

Surveillance cameras, alarms, and secure locks should be in place to prevent theft or tampering with the products.

5.5 Fire Safety

Fire safety measures such as fire extinguishers, sprinklers, and emergency exits should be properly maintained. The warehouse should also have a fire risk assessment in place



5.6 Inventory Management

Stock Rotation: Use a First Expired, First Out (FEFO)or First In, First Out (FIFO)system to ensure older stock is used or dispatched first, reducing the risk of expired products being distributed

Regular Stock Checks Regular physical stock counts and reconciliation with records are essential to ensure the accuracy of inventory

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Labeling All products should be clearly labeled with essential information, including expiration dates, batch numbers, and storage conditions

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5.7 Handling and Documentation

Good Handling Practices Employees should be trained in proper handling techniques to avoid damage, contamination, or mix-ups.

Documentation and Records All warehouse activities should be documented, including the receipt, storage, movement, and dispatch of goods. Accurate records help trace the product's history and ensure compliance with regulations.

The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) provides global standards and guidelines that apply to the pharmaceutical industry, including aspects related to Good Warehouse Practice (GWP). While the ICH guidelines do not specifically cover Good Warehouse Practice (GWP) in isolation, they are often integrated with other regulatory frameworks such asGood Distribution Practice (GDP) and Good Manufacturing Practice (GMP).

However, several ICH guidelines are relevant to GWP, especially when it comes to storage, handling, and distribution of pharmaceutical products, ensuring that product quality, safety, and efficacy are maintained throughout the supply chain. These guidelines provide broad principles and requirements that indirectly affect warehouse operations.
ICH Guidelines Related to GWP:
ICH Q7: Good Manufacturing Practice for Active Pharmaceutical Ingredients (API).

6. ICH GUIDELINES FOR GOOD WAREHOUSING PRACTICE

CH Q7 provides guidelines for the manufacturing of active pharmaceutical ingredients (APIs), including storage conditions, and packaging requirements to ensure the quality of APIs throughout the supply chain. Proper storage is critical to preventing contamination or degradation of APIs before they are used in the production of finished pharmaceutical products.

6.1 Storage Conditions

API storage must be in a controlled environment to prevent exposure to extreme temperatures, humidity, light, or contaminants.

6.1.2 Inventory Management

The API warehouse must be organized in a way that ensures the proper rotation of stock (FIFO or FEFO) and prevents mix-ups or cross-contamination.

6.1.3 Labeling and Documentation

ducts, including batch numbers, expiration dates, and storage instructions, is essential for traceabilPharmaceutical Quality System

6.1.4 Relevance to GWP

ICH Q10 emphasizes the importance of apharmaceutical quality system, which includes effective management of warehouse practices. This system ensures that all activities related to storage, distribution, and handling align with quality standards

6.1.5 Quality Management

Warehouse operations must be integrated into a broader quality management system, ensuring proper documentation, handling, and reporting of any deviations.
Continuous Improvement: Warehouse operations should be regularly reviewed and improved to ensure compliance with evolving regulatory standards and best practices.

6.1.6 Quality Risk Management

Relevance to GWP: ICH Q9 outlines a risk-based approach to quality management, which is applicable to warehouse operations to minimize the risk of product damage, contamination, or improper storage conditions.

6.1.7 Risk Assessment

Warehouses should conduct risk assessments to identify potential hazards related to temperature, humidity, handling procedures, and other environmental factors.
Control Measures: Mitigation strategies should be implemented, such as using temperature-controlled storage for sensitive products and ensuring proper segregation of incompatible materials.
Good Clinical Practice (GCP)

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6.1.8 Documentation and Traceability

Proper records must be maintained to ensure that clinical trial materials can be traced through the supply chain and that they meet the necessary storage conditions.

Impurities in New Drug Substances and Products

6.1.9 Relevance to GWP

ICH Q3 provides guidance on controlling impurities in drug substances and products, which can be affected by improper storage or handling in the warehouse. For example, exposure to excessive light, moisture, or heat can lead to the formation of impurities in drugs.

6.1.10 Environmental Controle

Warehouses should maintain appropriate environmental conditions to prevent the formation of impurities in sensitive pharmaceutical products.

6.2 Quality Assurance

The warehouse should operate as part of an integrated pharmaceutical quality management system, ensuring that products are stored, handled, and distributed in compliance with relevant regulations.

Regular audits and inspections of warehouse practices should be conducted to ensure ongoing compliance.

6.3 Risk Management

Risk assessments should be performedto identify potential hazards related to storage conditions, handling processes, and contamination risks.

Appropriate control measures (e.g., temperature monitoring, inventory control) should be in place to mitigate risks to product quality.

6.4 Documentation and Traceability

Accurate records of product movement, storage conditions, and handling procedures should be maintained at all times.

Documentation should include temperature and humidity logs, batch numbers, expiration dates, and details of any product recalls or deviations.

6.5 Proper Storage Conditions

The warehouse must maintain proper environmental conditions (e.g., temperature, humidity, light exposure) based on the specific requirements of the stored products.

Storage systems should prevent contamination, cross-contamination, or damage to products, ensuring that products are stored in clean, well-organized spaces.

6.6 Training and Personnel

Warehouse personnel should receive appropriate training in Good Warehouse Practices, including safe handling, storage conditions, and quality control procedures.

6.7 Regulatory Compliance

Warehouses must comply with both local regulations and international standards for pharmaceutical storage and distribution.

The warehouse operations should align with global frameworks such as Good Distribution Practice (GDP) and Good Manufacturing Practice (GMP) which often incorporate ICH principles.

7. IMPOTANT OF GOOD WAREHOUSING PRACTICE

7.1 Inventory Management

Proper warehousing ensures that inventory is org anized and easily accessible, minimizing the risk stockouts, overstocking, and errors. This leads to more accurate stock levels and better order fulfillment.

7.2 Product Safety and Quality

Implementing good warehousing practices ensures that products are stored under appropriate conditions, reducing the risk of damage, spoilage, or contamination. This is especially critical for perishable goods or sensitive materials.

7.3 Time Management

By using efficient layouts, clear labeling systems, and automation technologies (where applicable), warehousing can streamline picking, packing, and shipping processes, reducing lead times and improving customer satisfaction.

7.4 Customer Satisfaction

Fast, accurate, and reliable order fulfillment is critical to customer satisfaction. Good warehousing practices support these outcomes, enhancing a company's reputation and leading to repeat business.

7.5 Scalability

As a business grows, having well-established warehousing practices in place makes it easier to scale operations without sacrificing efficiency or increasing costs.

8. FUNCTIONS OF WAREHOUSING

8.1 Receiving and Recording of goods

While receiving the goods it is the responsibility of the warehouse
department to check and verify the goods that are coming into the warehouse by weighing the shipper
coming in and counting the same. The correctness and quantity of the goods coming in should be
verified at the time of receipt and recorded in a document. It should be mutually agreed and signed
between the person transferring the goods and the personreceiving the goods.

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8.2 Storage

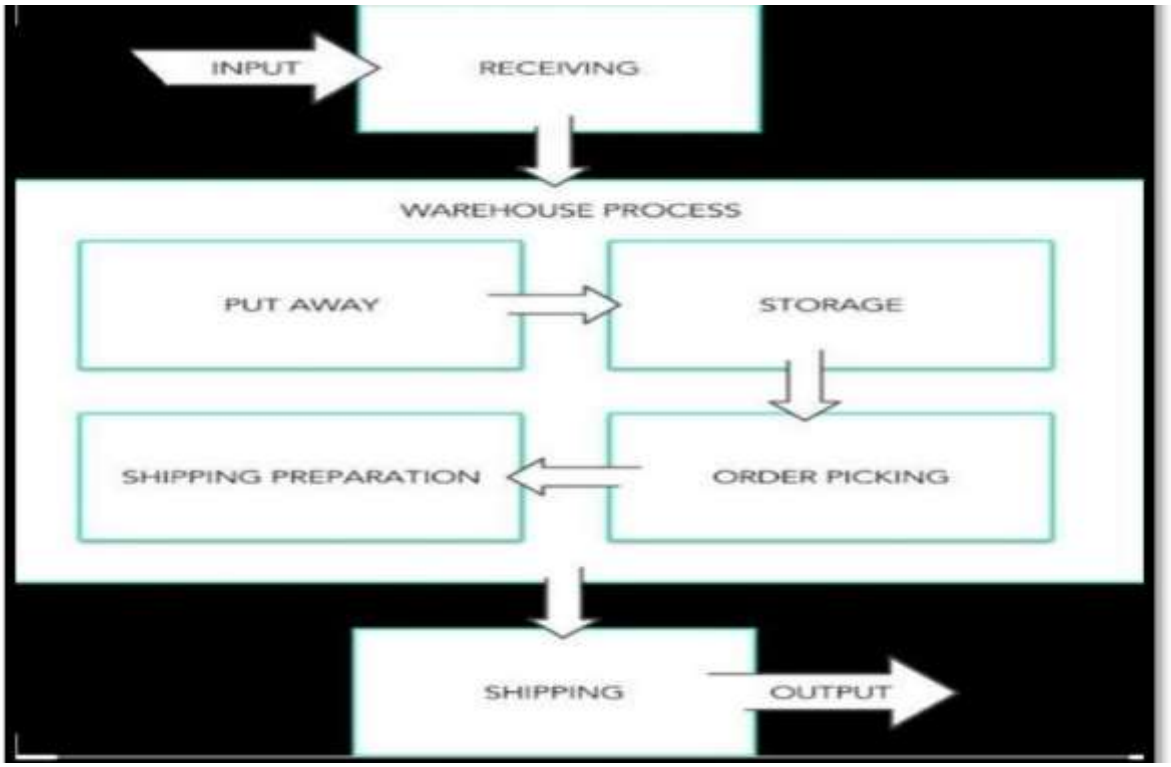
Major function of storage is to ensure that the product is protected and stored in a manner to ensure that the goods are easy to identify and as per the category. It is advisable to have zoning concept where the products can be stored as per the zone.

8.3 Order Picking

After the receipt of the order the line manager shall ensure that he has picked the same order as indicated in the picking list and the same batch member should appear in all the documents i.e., the invoice, the picking list and the delivery note.

8 .4 Distribution

The line manager hand over the goods to the packers who verify the goods against the delivery note and do the necessary marking on the shippers as per the customer. It is the responsibility of the loading supervisor to check the vehicle and confirm that it is matching as per the requirements and is clean and tidy for loading pharmaceutical goods.



9. PRINCIPLE OFF GOOD WAREHOUSING PRACTICE

9.1 Inventory Management

Implement effective inventory tracking systems, such as barcode scanning or RFID, to ensure accurate stock levels, minimize errors, and avoid stockouts or overstocking.

Regularly perform stock counts (e.g., cycle counting) to verify inventory accuracy.

9.2 Safety and Compliance

Adhere to safety regulations and standards to prevent accidents, including clear signage, proper safety equipment, fire exits, and regular training for staff.

Ensure proper labeling of hazardous materials and compliance with local and international regulations (such as OSHA or ISO standards).

9.3 Material Handling

Use appropriate handling equipment (forklifts, conveyors, pallet jacks, etc.) to reduce physical strain on workers and improve operational efficiency.

Ensure workers are trained in proper material handling techniques to prevent injuries and damage to goods.

9.4 Temperature and Environment Control

For sensitive goods (e.g., perishable items, pharmaceuticals), ensure temperature and humidity control systems are in place, along with regular monitoring to maintain the required conditions.

Ensure adequate ventilation, lighting, and cleanliness in the warehouse environment.

9.5 Quality Control

Establish procedures for inspecting goods upon receipt to ensure they meet quality standards and specifications.

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Implement quality checks at various points during storage and before dispatch to minimize errors and returns.

9.6 Technology and Automation: Utilize warehouse management systems (WMS) to improve real-time inventory tracking, order fulfillment, and warehouse processes.

Consider automation technologies (robotics, AI, etc.) to streamline operations and reduce human.

10. STOCK MARKET OF GOOD WAREHOUSING PRACTICE

10.1 Optimized Inventory Management

Using automated systems (like WMS) to track stock levels, reducing overstocking or stockouts.

10.2 Efficient Layout Design

Ensuring a logical flow for receiving, storing, and picking goods, which minimizes time and effort.

10.3 Technology Utilization

Implementing tools such as barcode scanners, RFID, and warehouse management software to improve accuracy and tracking

10.4 Regular Audits and Maintenance

Conducting regular audits to ensure inventory accuracy and maintaining warehouse equipment to prevent downtime.



11. STAFF OF GOOD WAREHOUSE PRICTICES

11.1 Warehouse Manager

Oversight: Ensure the overall operation of the warehouse meets GWP standards.

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11.2 Compliance

Ensure staff adhere to regulatory requirements and safety protocols.

11.3 Training:Organize training programs for warehouse staff to educate them on GWP, including inventory control, temperature management, and proper handling of goods.

11 .4 Receiving Staff

Inspection: Check incoming goods for quality, accuracy, and compliance with documentation.



11.5 Storage Conditions

Ensure that received goods are stored under proper conditions, including temperature, humidity, and handling.

11 .6 Documentation

Accurately record goods received and update inventory systems.

11.7 Warehouse Operators

Inventory Management: Organize and rotate stock in a manner that ensures FIFO (First-In-First-Out) or FEFO (First-Expired-First-Out) principles

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11.8 Labeling

Properly label products with batch numbers, expiration dates, and storage conditions.



11. 9 Handling

Handle goods safely to prevent damage and contamination

11. 10 Quality Control Inspectors

Goods Inspection: Ensure that products meet quality standards before they are shipped.

Sampling: Randomly sample items to ensure batch consistency and quality.

Documentation: Record inspection results and report non-compliance issues.

11.11 Safety and Compliance Officers

Safety Protocols: Ensure that staff follow safety guidelines, including the proper handling of hazardous materials and equipment.

Health & Safety Audits: Conduct regular safety audits to identify risks and ensure compliance with workplace safety standards.

Regulatory Compliance: Stay updated on regulations (e.g., FDA, GMP, ISO) relevant to warehousing and ensure

12 . CHARACTERS OF GOOD WAREHOUSE

12.1 Properly cleaned.
12.2 Good preservation of drugs & equipments.
12.3 Provide safety for staff & stocked goods.
12.4 Control of air, light, humidity & temperature.
12.5 Products to be purchased according to needs.
12.6 Order the destruction of unsuitable products.
12.7 Promote rational use of pharmaceutical products.

13. MAINTANANCE OF GOOD WAREHOUSE PRICTICES

13.1 Any building used in the manufacture, processing, packing, or holding of a drug product shall be maintained in a good state of repair.

13.2 Deterioration of buildings not only presents a poor image of the facility, it can also impact on product quality.

13.3 Cracks and holes in walls, floors, or ceilings can provide access for insects, rodents, birds, dirt, or microorganisms

.13.4 They can also hinder cleaning and sanitation, thereby

13.5 Floor cracks can also become a safety hazard for people or even dislodge materials from trucks.

13.6 The ingress of water from roof leaks can cause significant

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13.7 damage to materials and equipment, give rise to electrical failures and fires and result in damage to the basic structure of the building

14. RULES FOR GOOD WAREHOUSING PRACTICE

14.1 Systematic storage of the delivered goods.
14.2 Use air circulation & protection against rodents.
14.3 Keeping a space at least 50cm between the rows of pellets walls.
14.4 Providing each products have only one specific place.
14.5 On shelves clear labeling of products should be there.
14.6 Adequate space should be provided for each goods.
14.7 Provide separate stoke card for each products.
14.8 All boxes in stock should be closed.
14.9 Flammable products should stored in separate place

15. GENERAL GUIDE LINES FOR GOOD WAREHOUSE PRICTICES

15.1 Materials received against specific supply devices
15.2 Each such consignment have written documents (delivery Chelan)
15.3 All materials received by responsible persons
15.4 materials to be checked for cleanliness & package integrity
15.5 Damaged container separated & reporting immediately

16. PROCUREMENT OFF EQUIPMENT IN WAREHOUSE

16.1 Points to be noted before purchase of an equipment:
16.2 Latest technology
16.3 of maintenance & repair facility, with minimum down time
16.4 Post warranty repair at reasonable cost
16.5 Upgradeability
16.7 Reputed manufacturer
16.8 Availability of consumables.
16.9 Low operating cost



17. PREVENTIVE MAINTENENCE GOOD WAREHOUSE PRICTICES

17.1 Purchase with warranty spares.
17.2 Safeguard the electronic equipments with: (as per guidelines)
17.3 Voltage stabilizer, UPS
17.4 Automatic switch over generator
17.5 Requirement of electricity, water, space, atmospheric conditions, etc. Must be taken into

18. CONSIDATION FOR GOOD WAREHOUSING PRACTICE

18.1 Well equipped maintenance cell must be available
18.2 Monitoring annual maintenance contracts, [AMC]
18.3 Maintenance cell
18.4 Communications between maintenance cell & suppliers of the equipment
18.5 Follow-up of maintenance and repair services Repair of equipment

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19. DISPOSAL

19.1 Circulate to other units, where it is needed
19.2 Return to the vendor, if willing to accept
19.3 Sell to agencies, scrap dealers, etc
19.4 Auction
19.5 Local destruction

20. PREMISES, WAREHOUSING AND STORAGE

Precautions must be taken to prevent unauthorized persons from entering storage areas. Employees should comply with the company policies to mention a safe, secure and efficient working environment. Storage areas should be of sufficient capacities to allow the orderly storage of the various categories of pharmaceutical products namely commercial and non-commercial products, products in quarantine, and released, rejected returned or recalled products as well as those suspected to the counterfeits. Storage areas should be clean and free accumulated waste and vermin. If sampling is performed in the storage area, it should be conducted in such a way as to prevent contamination or cross contamination. Adequate cleaning procedures should be in place for the sampling areas. Radioactive materials, narcotics or other hazardous, sensitive and or dangerous pharmaceutical products, as well as products presenting special risks of abuse, fire or explosion should be stored in dedicated areas that is subject to appropriate additional safety and security measures A system should be in place to ensure that the pharmaceutical products due to expire first are sold and or distributed first. Exceptions may be permitted as appropriate provided that adequate control are in place to prevent the distribution of expired products.Storage conditions for pharmaceutical products should be in compliance with the recommendation for the manufacturer. Equipment used for monitoring of storage conditions should also be calibrated at defined intervals. Stock discrepancies should be investigated inaccordance with a specified procedure

21. VEHICLES & EQUIPMENTS FOR GOOD WAREHOUSE PRICTICES

These are used to distribute, store or handle pharmaceutical products should be suitable for their purpose and appropriately equipped to prevent exposure of the products to conditions that could affect their stability and packaging integrity and to prevent contamination of any kind. Where feasible considerations should be given to adding technology such as Global Positioning System (GPS), electronic tracking devices and engine kill buttons to vehicles, which would enhance the security of products while in the vehicle. Where special storage conditions (e.g. Temperature/ Relative humidity), different from or limiting the expected environmental conditions are required during transportation, these should be provided, checked, monitored and recorded. All monitoring records should be kept for the shelf life of the product distributed



22. RAW MATERIAL HANDLING SYSTEM (RMHS) IN A WAREHOUSE

f processes and equipment used to move, store, and protect raw materials:
Equipment

RMHS equipment can include conveyors, stacker cranes, automatic guided vehicles, and robotic delivery systems.
RMHS processes can include quality control checkpoints, real-time inspection, and just-in-time inventory manageme Location Raw material warehouse are often near manufacturing area

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23. TRANSPORTATION FOR GOOD WAREHOUSING PRACTICE

Cross-Docking

Transferring goods directly from an incoming delivery to an outgoing shipment, which eliminates the need for warehousing.

Batch picking

Allows the picker to travel to one pick location to fulfill multiple orders, which reduces travel time and congestion.

Advance shipping notification (ASN)

Using electronically transmitted ASNs can help avoid inefficiency in the distribution center.

Synchronize transport schedules with warehouse activities

Using a transportation management system (TMS) and warehouse management system (WMS) together can optimize warehouse operations.

Use automated systems

Automated systems can receive products, put them away, pick them for orders, and ship them to the customer.

Cycle counting

Regularly counting inventory throughout the year can keep back-office systems accurate and the warehouse organized.

Replenishment



AS/RS systems can reduce the time needed to pick up goods, minimize risk to warehouse

24.SANITATION FOR GOOD WAREHOUSING PRACTICE

Written sanitation programmes should be available. These should include validated cleaningprocedures for premises and equipment, a quality standard for water, instructions for hygienewhen manufacturing and handling goods, and instructions relating to the health, hygienicpractices, and clothing of personnel and the disposal procedures for waste materials andunusable residues. Eating, smoking, and unhygienic practices should not be permitted in manufacturing areas.There shall be written procedures for use of suitable rodenticides, insecticides, fungicides,fumigating agents and cleaning and sanitizing agents. Cleaning procedure to be followed, including equipment and materials

and Discussion

25.TRANSPORTATION AND WAREHOUSING FOR RAW MATERIAL

Here are some best practices for transportation and warehousing:

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Synchronize transport schedules with warehouse activities

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Regularly counting inventory throughout the year can keep back-office systems accurate and the warehouse organized.
Replenishment
Implementing effective replenishment strategies can improve operational efficiency, customer satisfaction, and inventory control.
Use automated storage and retrieval systems (AS/RS)
AS/RS systems can reduce the time needed to pick up goods, minimize risk to warehouse workers, and save floor space.
Use compact storage systems Compact equipment like forklifts, hand trucks, pallet jacks, and electric stackers can save warehouse space.

26. CONCLUSION

good warehousing practices are essential for the efficient operation of any supply chain. They not only help ensure the safety and quality of goods but also improve operational efficiency, reduce costs, and enhance customer satisfaction. Implementing proper inventory management, optimizing storage space, maintaining safety standards, and using technology to track and manage products are key components of effective warehousing. By continually assessing and improving these practices, businesses can stay competitive, reduce errors, and streamline their operations for long-term success.

The implementation of good distribution practices (GDP) and good warehouse practices (GWP) at the agro-hub needs to be improved with the design of duties and responsibilities on warehousing and distribution. It is necessary to pay attention to routine hygiene procedures, room layout settings, and storage conditions on a regular basis. In regard to tools and transportation means, it is necessary to schedule maintenance, maintain cleanliness, and maintain usage schedules so as not to interfere with the warehousing
and distribution process. Documentation must be performed in complete. Product receipt, delivery, and stock must be recorded. Self-inspection of processes, tools, transportation,and products is required.

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