

REGULAR ARTICLE

IMPLEMENTATION OF BRITISH RETAIL CONSORTIUM (BRC) GLOBAL STANDARD ISSUE 9 IN THE PRODUCTION PROCESS AREA OF FROZEN TUNA FISH PT. XYZ

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ABSTRACT

Tuna fish is a high-value marine fishery commodity that is widely exported to meet consumption needs and increasing market demand. PT XYZ produces and exports a wide variety of processed frozen seafood by paying attention to food safety aspects and applying international quality standards. The purpose of this study is to determine and identify the application of British Retail Consortium (BRC) Global Standard issue 9 in the frozen tuna production process area at PT XYZ. The methods used are observation, participation, interviews, and literature studies then the data obtained are analyzed descriptively. The results showed that PT XYZ has implemented the British Retail Consortium (BRC) Global Standard issue 9 quality and food safety management system in the frozen tuna production process area. Aspects such as layout, facilities, equipment, utilities, housekeeping and others have fulfilled most of the clauses and sub-clauses in BRCGS.

Keywords: BRC, Frozen Tuna Fish, Production Area, Food Safety

INTRODUCTION

Tuna fish is one of the marine fishery commodities in Indonesian waters that has high economic value and is used to meet consumption needs. Tuna has a high protein content between 22.6 - 26.2 g/100 g of meat, low fat between 0.2 - 2.7 g/100 g of meat, minerals (phosphorus, calcium, iron, sodium), vitamin A (retinol), and vitamin B (thiamin, riboflavin, and niacin) (Hadinoto and Idrus, 2018). Fish is easily damaged or deteriorated due to enzyme, microorganism, and chemical activities. Providing certain treatments such as refrigeration and freezing can maintain the quality and quality of fish. Freezing is the storage of food in a frozen state to preserve fishery products, extend the shelf life of fish, keep the quality of fish as raw material good and inhibit microbiological activity and enzymes that cause decay (Sahubawa & Ustadi, 2019).

PT XYZ is a company engaged in the seafood processing industry by utilizing freezing technology. PT. XYZ has frozen fish products, including tuna, salmon, snapper, shrimp, processed products and others. PT XYZ exports frozen fish products to America, Japan and Europe. Quality assurance and food safety are among the requirements from importing countries that need to be considered for export-scale marketing of frozen tuna products. Food safety is important for overall public health so that productivity and quality of life will be high. Developed countries such as the United States, Australia, Japan and European countries demand a high level of food safety. Therefore, the management of a company or food industry must meet BRC international quality standards (Kurniawan, 2011).

The British Retail Consortium (BRC) is the leading trade organization for retailers in the UK which is recognized worldwide as the global standard for quality management systems and food safety (BRC, 2006). Food processing requires a quality management system that is used in determining the quality of a product. Companies that implement BRC-compliant standards can improve food safety at all stages of the production, packaging, storage and distribution processes so that products are safe to trade. The British Retail Consortium (BRC) Global Standard issue 9 requirements set in the food industry consist of 9 sections, including senior management commitment, the food safety plan - HACCP, food safety and quality management system, site standards, product control, process control, personnel, high-risk, high-care, and ambient high-care production risk zones, and requirements for traded products (BRCGS, 2022). The purpose of this study is to determine and identify the application of the British Retail Consortium (BRC) Global Standard issue 9 in the frozen tuna production process area at PT XYZ, and see the suitability between the categories, clauses and subclauses in BRCGS with actualization in the field.

MATERIAL AND METHODS

The methods used in this research are observation, participation, interviews and literature studies on the British Retail Consortium (BRC). Observation is carried out by direct observation and participating in all activities in the frozen tuna production process area, namely processing, packaging, storage and then conducting interviews with the head of the department, supervisor, and employees of PT XYZ. Data analysis was carried out descriptively using data from observations and interviews while in the field then comparing literature and actualization when implementing BRC standards in the frozen tuna production process area.

RESULTS AND DISCUSSION

PT XYZ is a food industry that processes seafood with freezing technology and then exports products to America, Japan and Europe. PT XYZ applies the British Retail Consortium (BRC) standard as a quality management system and food safety that is recognized in international trade. BRC global standard for food safety is a standard that has been recognized by the Global Food Safety Initiative (GFSI). PT XYZ has a BRC standard certificate as a guarantee of all aspects of quality and food safety so as to increase customer confidence in the products produced by the company and as a completeness in shipping products by export. The British Retail Consortium (BRC) issue 9 set in the food industry consists of 9 clauses, including 1) senior management commitment, 2) HACCP-based food safety planning (the food safety plan - HACCP), 3) food safety and quality management system, 4) site standards, 5) product control, 6) process control, 7) personnel, 8) high-risk, high-care, and ambient high-care production risk zones and 9) requirements for traded products (BRCGS, 2022).

Clause 3 concerns the quality management system and food safety. Clause 3.1 of the food safety and quality manual describes the company's processes and procedures to meet requirements. PT XYZ has clearly legible procedures and work instructions (WI), using photos and diagrams to enable employees to make correct applications. Work instruction (WI) procedures are posted on every wall of the production area at PT XYZ and are available to relevant employees. Clause 3.9 Traceability describes that the company must be able to trace all lot codes of primary raw materials and packaging products from its suppliers through all stages of processing and delivery to its customers and vice versa. PT XYZ performs traceability procedures to identify raw materials and packaging for the final product.

Clause 4 regarding site standards includes Clause 4.3, plant layout, process flow, and separation. The layout of PT XYZ is in accordance with standards by taking into account the risk of contamination of products which includes access to the movement of personnel, raw materials, production process flow, staff facilities, packaging, and waste: clause 4.4 building, raw material handling, preparation, processing, packing and storage areas. The production area of PT XYZ uses walls made of wall panels, polyurethane, and ceramics, while the floor is made of concrete, which is waterproof, easy to clean, and the meeting between the floor and the wall does not form a dead angle but is curved. The roof and ceiling in the production area have a height of 3 meters from the floor. Drainage is located on the floor of each process so that process wastewater and water, after sanitization, directly flow into the sewage drain. The external doors of the production room are made of solid iron coated with anti-corrosive paint, can close tightly, and are watertight and equipped with internal doors of plastic curtains that do not absorb water and are very tight so as to prevent the entry of insects and pests. Processing areas should be equipped with doors to minimize contamination that may be carried by dust and dirt and prevent the entry of insects, cockroaches, and rodents (Graham, 2005). The lighting during operations in the production area of PT XYZ is adequate and bright and has lampshades.

Clause 4.5 Utilities - Water, Ice, Air, and Other Gases. Water in the PT XYZ production area used for sanitizing machinery, equipment, floors, and washing hands is provided in sufficient quantities and meets the requirements for safe, direct contact with food surfaces so that there is no risk of contamination. Water used during the processing process and in direct contact with food must be water that meets the sanitary hygiene requirements that apply to clean water and drinking water (Novianti et al., 2017). Air and other gases that come into direct contact with the product are constantly monitored and filtered to avoid the risk of contamination. Clause 4.6 Equipment: The production area of PT XYZ uses stainless steel equipment and machinery that meets the standards, has waterproof surfaces, is rustproof, and is easy to clean so that it is safe to come into direct contact with food ingredients and minimize the risk of product contamination. Equipment and machinery are always cleaned before, during, and after processing using water, soap, chlorine, or alcohol. Clause 4.7 Maintenance on effective maintenance programs are in place for plants and equipment. The production area of PT XYZ has a documented maintenance schedule and condition monitoring system covering all plant and processing equipment. Authorized employees inspect equipment and machinery to ensure the removal of hazardous contamination before being accepted back into operation.

Clause 4.8 Staff facilities at PT XYZ include lockers for storing outerwear and personal belongings, changing rooms, food racks, canteens, toilets, and handwashing facilities available before entry to the production hall and at any point within the production hall. Toilet and hand washing facilities provide water, liquid soap, chlorine, and air dryers. Clause 4.9 Control of Chemical and Physical Product Contamination: Raw Material Handling, Preparation, Processing, Packing, and Storage Areas. In the production area, PT XYZ does not use equipment, containers, and packaging from glass, wood, and fragile materials—clause 4.10 Foreign

Object Detection and Removal Equipment. Metal detection equipment (detector machine) is available in the factory's production area. XYZ is used to detect foreign object contamination of the product. The detector machine is equipped with a belt stop system with an alarm if the product is detected with metal—clause 4.11 Housekeeping and Hygiene.

The equipment, machinery, and premises of the production area at PT XYZ have been maintained in a clean and hygienic condition because sanitization and disinfection are carried out every day both before, during, and after the production process. Equipment and machinery made of stainless steel are cleaned using water, soap, and chlorine. Cleaning of equipment and machinery is done by cleaning in place. Clean in Place (CIP) is a method of cleaning product residues from production equipment automatically without the need to disassemble the machine (Woolley et al., 2018)—clause 4.15 Storage Facilities. PT XYZ has procedures to maintain product safety and quality during storage in cold storage with temperature control for raw materials and final products so as to maintain the quality and temperature of the products inside. In the food industry, cold storage is a cooling room to store raw materials or production products that function to extend product life and maintain quality (Kurnia and Suryono, 2017)—the temperature of the cold storage area or cold storage of PT. XYZ is around -20 to -25°C. Packaging materials are stored away from raw materials and finished products to avoid cross-contamination.

Clause 5 regarding product control. Clause 5.5 Product packaging used by PT XYZ has specific standards, can be in direct contact with the material (food grade), and is resistant to tearing. Packaging materials are stored separately and away from the production area to prevent contamination and minimize damage—clause six regarding process control. Clause 6.1 Process Control of PT XYZ production area is carried out temperature monitoring once every hour so that the temperature in the production room is maintained and consistent, monitoring the temperature in the cold freezer machine when freezing the product, monitoring the time and pressure in the vacuum machine when vacuuming the product. Process monitoring such as temperature, time, and pressure are controlled and recorded to ensure that products are manufactured within the required process specifications. Clause 6.2 Labeling and Package Control, PT XYZ's final product packaging by putting the product into labeled MC packaging includes production date, ingredient composition, product weight, country of origin, and others. Product labeling activity checks are conducted to ensure products are correctly labeled and coded. Clause 6.4 Calibration and Control of Measuring and Monitoring Equipment, The production area of PT XYZ, uses measuring equipment, namely digital scales, and rulers, which are calibrated once every 6 months so that the measuring equipment can be read accurately and has the appropriate accuracy.

Clause 7 regarding personnel includes Clause 7.2 Personal Hygiene, where all employees and visitors who will enter the PT XYZ production area must maintain personal hygiene by washing hands, using protective clothing, head coverings, gloves, not wearing watches, bracelets, jewelry, false nails, and perfume. All workers in direct contact with the product should not wear watches and jewelry when processing food because these objects can fall and cause physical contamination of the product (Iliriana, 2013). Employees who have cuts and scratches on exposed skin must be cleaned and covered with plaster to prevent infection and contamination of the product. Clause 7.4 Protective Clothing: Employees or visitors to the Production Area of PT XYZ have protective clothing readily available in sufficient quantity and appropriate design and are equipped with hair cover, mask, disposable food-grade rubber gloves, and boots to prevent product contamination. Protective clothing for workers in the food industry must be able to cover all parts of the worker's body that have the potential to come into contact with the product (Elstone, 2007). PT XYZ ensures adequate separation between dirty and clean protective clothing, and effective cleaning of protective clothing is carried out according to procedures in the PT XYZ laundry.

Clause 8 regarding high-risk, high-care, and ambient high-care production risk zones. Clause 8.1 Layout, product flow, and segregation in high-risk and high-care zones. PT. XYZ's production area map is differentiated by risk, namely high risk and low risk, and includes the location of pathogen control stages. PT. XYZ has physical separation between the high maintenance area, which is part of the physical production site, and other parts, such as raw material storage areas, packaging materials, waste disposal, and others, to minimize the risk of product contamination—clause 8.5 Housekeeping and Cleanliness in High Risk and High Maintenance Areas. The environmental cleaning procedure in high-risk areas of PT XYZ lists the person in charge of cleaning the sanitation PIC, contact and nonfood contact cleaning items, cleaning frequency, and cleaning method and is recorded in the form. Environmental cleaning procedures are implemented to ensure appropriate cleaning standards are achieved.

CONCLUSION

British Retail Consortium (BRC) is a quality and food safety management standard recognized in international trade to guarantee quality, safety, operational criteria so as to ensure that producers have met quality assurance and food safety that can provide protection for consumers. PT XYZ has implemented the British Retail Consortium (BRC) Global Standard Issue 9 quality and food safety management system in the frozen tuna production process area which shows that all aspects such as layout, facilities, equipment, utilities, housekeeping and other aspects have met most of the clauses and sub-clauses in BRC.

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