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The application status of Good Food Production Method (GFPM) production of corn crackers in SME Mawar Merah Luwu Utara

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Abstract. Good Food Production Method (GFPM) requires several requirements that must be fulfilled by all industries involved in the whole production chain from raw materials to the final product. This study aims to identify the application of GFPM in the production of corn chips, and assess the status of GFPM implementation which was conducted through observations, interviews, and documentation of all activities related to the production process. The assessment used a reference adapted from the Decree of Indonesian Minister of Industry Affairs (Permenperin) number 75/M-Ind/Per/7/2010 and the regulation of Head of National Drug and Food Control Agency (KB POM) number HK.03.1.23.04.12.22007 in 2012. The result showed several inappropriate conditions including: (1) absence of continuing maintenance of the wall and ceiling of the production room; (2) unstandardized ventilation in the production room; (3) absence of net weight and production labels on the packages; and (4) the absence of health label informing health claims and nutrition claims. The status of GFPM implementation in UKM Mawar Merah is at D (poor) level with a rate of IV.

1. Introduction

Good Food Production Method (GFPM) is a guideline for production which aims to ensure that food producer meets the prescribed requirements to produce quality [1]. It is started from raw materials to processing stage and to go with until the final product for sure. The purpose of the study was to identify and to assess the applicability status of GFPM in the Mawar Merah Small and Medium Enterprises (SME), in North Luwu. The method used was descriptive method, in which that Small and Medium Enterprises (SMEs) was one of the activities of the community which would become a driving force in the country's economic development. Mainly it could improve economic resilience at the household level. Also, it became an important part that was influential in enhancing the competitiveness of a country. The movement of the SME sector was to create economic growth and employment; it encouraged equitable distribution of income and distribution of development outcomes, and it was adaptable to the ups and downs and direction of market demand. It contributed to the provision of food products for public consumption. However, in its operations, there were some disadvantages such as safe, vulnerable, and unattractive packaging [2]. Without any strategic effort, SMEs would have a high risk of losing competitiveness. One of the initiatives that could be done was to apply Good Food Production Method (GFPM). It is a guideline for production strategy which is aimed at ensuring that



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food producer. It meets the prescribed requirements to produce quality and safe food products by consumer demands [3]. The purpose of this study is to identify and assess the applicability status of GFPM in the Mawar Merah SME, North Luwu.

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2. Material and Method

This research was conducted at SME Mawar Merah, North Luwu which produced the most popular maize crackers. The method used was descriptive method, which described the phenomenon, application and business conditions observed. Working procedure: (1) Observation, interview, and documentation of all activities related to the production process were performed. (2) Observation to perceive precisely the movement and behaviour, environment, and general picture of SME location. Interviews were conducted in depth to the business owner. Any reference to the status of GFPM-IRT application used is adapted from Permenperin RI No.75 / M-Ind / Per / 7/2010 and KBPOM regulation no. HK 03.1.23.04.12.22007 year 2012 shown in table 1.

Table 1. References to the appraisal of GFPM-IRT

Rating levels	Amount of Deviation Value				Category
	Unfavorably	Serious	Mayor	Minor	
I	0	0	1	1	A (Very Good)
II	0	0	2-3	1	B (Good)
III	0	1-4	5 or more	Not used	C (Average)
IV	Yes	Not used	Not used	Not used	D (Less)

Source: Agency for Drug and Food Control (2012)

3. Results and discussion

The scope of the GFPM included production goods since raw materials enter the plant until the product was produced, including other requirements that must be met. Stages of corn cracker production process were: (1) sorting of raw materials, (2) immersion (3) boiling, (4) milling, (5) mixing, (6) stirring, (7) printing, (8) drying, (9) frying pan, (10) refrigeration and (11) packaging. According to Susianawati [4], there were 8 GFPM keys that must be applied by industry. By the results of observations at the study site, the application of GFPM in the Red Rose Mawar based on eight key GFPM was as follows.

3.1. Water Protection

The role of water in the industry was significant, ranging from washing production space, washing materials, washing equipment and variety of other means. Use of clean water should be considered to avoid contamination of dirty water. The water used in the Mawar Merah SME came from a local water company (PDAM), Luwu Utara, which was piped, then collected and deposited in a particular water reservoir. The protections were clean storage container and water in colourless condition, tasteless and odourless. The Regulation of the Minister of Health of the Republic of Indonesia (2011) was that the minimum quality of clean water must meet the physical requirements of colourless, tasteless and odourless. Also, the water used in the SME was available in sufficient quantities for production activities. According to [5], water used in the processing must be processed such as, firstly to reduce the number of microbes as low as possible, secondly treating water which was undergone chemical and physical treatment.

3.2. Conditions of Hygiene Surface in Contact With Foodstuffs

The expected objective was to assure that surfaces which direct contacted with food was in a clean state included the status of the contact surface with the food. In the SME Mawar Merah, equipment and

containers conditions used have to be clean enough. Such as plastic basket, tray, bucket and frying pan. Before the activity begins and after completion of production activities, the equipment was cleaned by brushing and washed with soap and then all of them must be dried carefully. It was expected to reduce the occurrence of contamination of the product by hanging above the room and stored in a cupboard. It was explained that all material which was contacted directly with the product must be washed with proper washing technique and use sanitizer [3].

3.3. Prevention of Cross-Contamination

There was no place for raw material in SME Mawar Merah, but they kept it in a processing location. The cleanliness and sanitation of the processing area and the walls were poorly maintained, and it was not supported continuously. The practice of worker hygiene, clothing and hand washing as well were in good shape, even in the modest circumstances.

3.4. Handwashing, Sanitation and Toilet Facilities

The importance of maintaining hand-washing facilities, sanitation and toilets to avoid contamination was usually fatal because the possibility of pathogenic bacteria being carried could be contaminated in foodstuffs. Therefore, every worker or employee who performed the processing must ensure that the hand condition was clean constantly. State of hand-washing facilities, they were well-maintained toilets and located away from production sites, as well as the concentration of hand sanitizing materials which were available although not in accordance with the requirements. Each employee has a small container for washing their hands so that before starting the processing, each employee should wash his hands as well as after finishing the processing.

3.5. Protection from Contaminant Materials

The purpose of protection of contamination-causing products was to ensure that food product, packaging materials and direct contact surfaces were protected from microbial, chemical and physical contamination. The storage container was located separately from the processing room, and it was closed. The condition of ventilation in the production room was not yet suitable because pests such as bird that became carriers of bacteria could easily enter the production room.

3.6. Labeling and Storage

The containers used in food products should have label that included the kind of raw material and the name or address of the manufacturer. Food grade material and non-food grade one must be considered primarily. The labelling of corn crackers in SME Mawar Merah has been done quite well, but for marketing strategy, the position of the logo and writing brand "Sar Intan" should be designed bigger than the product name (Corn Chips product name). Therefore, the brand "Sar Intan" would be better known by consumers. Beside that, the critical information which not included in the packaging label was the net weight, the production code and the health claims as well.

3.7. The Supervision of the Personal Health Conditions

Owners should pay attention to the health conditions of workers. It was not justified when one of the employees performed the production process suffered from illness or they have wounds that could be as source of contamination. Employees worked in processing room, sorting, and packaging should always wear work clothes, headgear, masks and gloves. This was done to maintain cleanliness by paying attention to the aspects of sanitation and hygiene because these aspects were potential sources of contaminants.

3.8. Eliminating Pests from Processing Units

SME Mawar Merah was located close to the residential area, where no fence, and easy for animals such as chickens and birds to enter the processing area. In this case, it could be a source of contamination from a) flies and cockroaches: source of *Salmonella*, *Streptococcus*, *C. Botulinum*, *Staphylococcus*, *C.*

perfringens, Shigella., b) rodents: sources of *Salmonella* and parasite, c) birds: source of *Salmonella* and *Listeria*

Based on the assessment at the study site, and the guidance of the appraisal that were adapted from Permenperin RI No.75 / M-Ind / Per / 7/2010 and KBPOM regulation no. HK 03.1.23.04.12.22007 year 2012, showed that SME Mawar Merah has D status (unacceptable) with rating IV because some deviations occurred in processing area (table 2).

Table 2. Irregularities in SME Mawar Merah

No	Serious deviation	Unfavorably deviation
1.	The walls and ceiling in the production room were not maintained continuously.	Packaging labels did not include net weight and production code
2.	Ventilation in the production room did not meet the standard.	There was no health labels that included health claims and nutritional claims (nutritional content)
3.	-	The existence of a pet in the production room

Severe and unfavorably deviations were irregularities which were not adequately corrected and would affect the food safety as well [6]. The application status of GFPM in various food industries varied. For example the SME Deni Deva in Surabaya which produced sea cucumber crackers. It got poor status and needed to be improved from design aspect, facility of production room, maintenance of production facility, sanitation activity and administrative record [7]. Another study stated that there were still many SME crackers in Padang City which have not applied GFPM optimally, either from the aspects of quality control, employee and infrastructure as well [8]. It has been reported that 38.78% of food households in Cianjur were considered to be lacking in water supply and treatment parameters, pest control and sanitation practices [9]. GFPM processing of corn crackers was essential to produce good quality products, guaranteed security and by consumer expectations. Ensuring products were manufactured and controlled consistently according to standards [9]. Thus the stages of improvement against deviations that occurred become the main thing in the process of development in the future [10]. This research provided some managerial implications, namely:

- a. Fixing the walls and ceiling by the Regulation of the Minister of Health of the Republic of Indonesia 2011[11] to facilitate the maintenance of production space. (1) The inner wall surface should be flat, smooth, and easy to clean. If the surface of the wall was exposed to splashes, it should be coated with waterproof material and easy to clean as porcelain as high as 2 meters from the floor. Part of the waterproof wall was made smooth, flat and bright colored. (2) The ceiling surface should be flat, light-coloured, and easy to clean. Also, the ceiling should not be hollow, and the height of the ceiling was at least 2.4 meters from the floor.
- b. Fix the vent in the production room and the packing room, and complete it by installing the insect barrier insertion. Ventilation was necessary to maintain comfort by lowering indoor heat, preventing condensation (humidity), and removing smells, smoke, and dust in the room. The ventilation was divided into natural and artificial ventilation. Natural ventilation should be sufficient (10% of the floor area) and capable of ensuring proper air circulation and should be able to remove steam, gas, smoke, odours, and indoor dust. Artificial ventilation was required when natural ventilation could not meet the requirements.

Implications of improvements to critical deviations were as follows [12]:

- Label include. According to government regulation No. 18 of 2012 where provisions on food product label are as follows: (a) Product name according to IRT food type in Regulation of Head of

POM HK.03.1.23.04.12.2205 Year 2012 on Granting of Certificate (b) Name and address of PIRT, (c) Date, month and year of expiration, (d) Production code of the Household Industry, (e) List of materials or composition used;) P-111 Number.b. Include health labels such as health clones and nutritional claims. Based on the Regulation of the Head of the POM Number HK.03.1.23.11.11.09909 In 2011, the claim was any form of description which states, suggests or declares the specific characteristics of a food concerning the content, nutritional content, nature, production, processing, or other quality factors. Claims on processed foods included dietary claims and health claims.

- Nutrition claims included: (1) claims of nutrient content i.e. claims that described the nutrient content in food; and (2) claims for the comparison of nutrients,i.e.claimsto compare the content of nutrients and energy content between two or more foods.
- Health claims included: (1) a nutritional function claim that was a claim that described the physiological role of nutrients for growth, development and normal function of the body; (2) another claim of function that was claim related to the beneficial effects of food or food components in the total diet to normal biological function or activity in the body, which was associated with positive effects to improve body function or maintain health; and (3) disease risk reduction claim was a claim that connected food consumption or food components in the total diet with a reduced risk of a particular disease or health condition. However, it should be understood also that by the reduction of the major risk factors for a disease that caused multifactor, it was not necessarily beneficial for health by reducing one risk factor for the occurrence of the disease.
- Protection from pets
Based on the Regulation of the Minister of Health of the Republic of Indonesia (2011), food processing places should be spared from pets such as chickens, birds, rodents and insects as they could cause health problems such as dengue fever, malaria and dysentery. Each hole in the building must be installed with a wire of cassa measuring 32 eyes per inches in the vents to prevent the entry of animals and made trellises with a distance of 2 cm from the door to prevent the entry of rats and other pets.

4. Conclusion

The status of GFPM application in SME Mawar Merah, North Luwu producing corn cracker was not in good (status D) with rating IV.

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