

Evaluation of employee sanitation and hygiene in the production of javanese noodles

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ABSTRACT

Evaluation of Industrial Sanitation and Employee Hygiene in Javanese Noodles Production. In the food industry, sanitation and hygiene are essential things in a food product or food safety from external contaminants or microbes that can affect the final product of the food production. The method of analysis used is the method of observation, interviews, direct practice, documentation, and library research. Check sheet based on CPPB-IRT reference Regulation of the Head of the Drug and Food Control Agency of the Republic of Indonesia Number HK.03.1.23.04.12.2206 of 2012 and the Food and Drug Monitoring Agency of 2020. This practical work report aims to determine the evaluation and application of industrial sanitation principles and employee hygiene and the efforts that can be made to improve industrial sanitation and employee hygiene. For things to be further evaluated, such as window construction or air ventilation. Steps that can be made to improve sanitation and hygiene for employees in the production of Javanese Noodles are to increase employee awareness of the importance of implementing sanitation and hygiene. This aims to minimize contamination of product production. It resulted from. From the results of direct observation and with a check sheet, it has been carried out according to the BPOM RI CPPB-IRT policy regulations.

Keywords: Javanese Noodles, Check Sheet, Employee Sanitation and Hygiene

INTRODUCTION

Food is one of the essential basic human needs. Safe and quality nutrition must be available for all levels of Indonesian society. Safe and quality food has been produced in household kitchens and from the food industry. Food Home Industry (IRTP) needs guidance so that the food products made are excellent and safe for consumers because they meet quality and safety requirements (Badan Pengawas Obat dan Makanan Republik Indonesia, 2002). Based on Food Law no. 18 of 2012, one of the articles regulates food safety. Food safety is held to keep food safe, hygienic, of good quality, and not conflict with religion, beliefs, and community culture. Food safety also intends to prevent biological and chemical contamination that can harm human health.

Noodles are one of the culinary delights of various groups, from the old to the young. Noodles is food thrown away with the basic ingredients of flour dough, printed long like a rope, and was initially made to replace staple food for Asians during times of economic crisis.

Sanitation is a health effort to maintain the subject's environment's cleanliness. Sanitation is control efforts aimed at environmental factors that can form a chain of disease transmission. Hygiene is a health effort to maintain and protect the cleanliness of the subject, such as washing hands with clean water and soap to protect hand hygiene, washing dishes to maintain the cleanliness of dishes, and throwing away damaged food parts to maintain the cleanliness of food integrity as a whole. Hygiene and sanitation are essential in determining the quality of food where *Escherichia coli* is an indicator of food contamination which can cause food-borne diseases. E-coli in food and drink is contaminated due to poor handling of food and beverages.

RESEARCH METHOD

Materials

1. Flour

Depending on its use, flour is a solid particle in the form of fine or even excellent grains. Flour is usually used for industrial raw materials, research purposes, or household needs, for example, making noodles, cakes, and bread.

2. Salt

Salt is a solid white object in the form of crystals which is a collection of compounds, with the most significant part being Sodium Chloride and other compounds such as Magnesium Chloride, Magnesium Sulfate, Calcium Chloride, and others. Salt has hygroscopic properties or characteristics, which means it quickly absorbs water, has a bulk density of 0.8-0.9, and has a melting point at a temperature level of 801°C (Subhan, 2014).

3. Water

Clean water is healthy water that is used for human activities and must be free from disease-causing germs free from chemicals that can contaminate the clean water. Water is an absolute substance for every living thing, and water cleanliness is the main requirement for ensuring health (Dwijosaputro, 1981). Water is the raw material used as the main ingredient in making noodles. The water used comes from SNI-certified gallons of water. PT Tirta Investama supplies the water used with the trademark Aqua.

4. Grinding machine (Astro NOD 300S)

The Astro NOD 300S grinding machine rolls dough into noodle sheets until they become dense and homogeneous, as seen in Figure 1.24. The specifications for this machine have a voltage of 220V, engine capacity of 35-40 kg/hour, electric engine power of 1,500 watts, and machine weight of 78 kg with dimensions of 55x37x91 cm.

5. Noodle grinding machine (Matrix MJ-180)

Mi matrix Grinding Machine MJ-180 function as a dough smoothing after the previous milling process; Matrix MJ-180 machine specifications have a voltage of 220V, a machine capacity of 20-25 kg/hour, electric power of the machine is 370 watts, a weight of 35 kg with dimensions of 37x39x40 cm.

6. Noodle grinding machine (Matrix MJ-180)

The NOD-200 noodle printing machine has the function of printing noodles into noodle strands. The specification of this machine is voltage 220-240V, engine capacity of 25-30 kg/hour, the engine power of 550 watts, and weighs 23.5 kg with dimensions of 350x310x350 mm.

Methods

The methods used in collecting data are observation, interview, direct practice, documentation, and literature study.

1. Observative methods

The observation method is carried out by making direct observations of the objects of activity during the processing of raw materials, sanitation, and hygiene of employees, which are the author's primary focus.

2. Interviews

Interviews were conducted by asking directly to those who could answer about the entire process of processing raw materials, sanitation, and hygiene of employees in the company.

3. Direct practice

Direct practice, namely carrying out the processing of raw materials, sanitation, and hygiene of employees by participating in all activities from receiving raw materials to selling products.

4. Documentation

Documentation is done by recording and collecting data from documents, books, reports, or pictures related to the object of discussion.

5. Literature review

The literature study method is carried out by collecting data and studying literature/references about problems related to this practical work.

Data Analysis

The analytical method used in evaluating the implementation of employee sanitation and hygiene in the production of Javanese noodles is the check sheet method based on the CPPB-IRT reference to the regulation of the head of the drug and food control agency of the Republic of Indonesia number HK.03.1.23.04.12.2206 of 2012 and the food and drug control agency of the year 2020. Determination of the category of non-conformity or deviation in findings at production facilities is carried out following this regulation. The results of the initial condition evaluation are used as a basis for the introduction of CPPB principles and evaluation efforts to improve employee sanitation and hygiene.

RESULT AND DISCUSSION

The principle of Sanitation and hygiene is controlling the factors of the place or building, cutlery, and people or employees. The following is a check sheet table for applying industrial sanitation and hygiene for Javanese noodle production employees based on the Food and Drug Monitoring Agency of the Republic of Indonesia Number HK.03.1.23.04.12.2206 of 2012 (Badan Pengawas Obat dan Makanan Republik Indonesia, 2012).

Table I. Check Sheet evaluating the application of industrial sanitation and employee hygiene based on CPPB BPOM RI.

| No. | Regulation | Suitable | Deviate |
|-----|---|----------|---------|
| 1. | Health surveillance by the company. | √ | |
| 2. | Use of work equipment | | |
| | a. Gloves | | √ |
| | b. Hair nets | √ | |
| | c. Work uniform | √ | |
| | d. Appropriate shoes | | √ |
| 3. | Maintenance of nails and hair. | √ | |
| 4. | It is forbidden to wear jewelry. | √ | |
| 5. | It is forbidden to bring food and drink. | | √ |
| 6. | Smoking is prohibited on the production site. | √ | |
| 7. | Spitting is prohibited in a Factory environment. | √ | |
| 8. | Wash hands after using the toilet. | √ | |
| 9. | Take off work equipment when going to the toilet or taking a break. | √ | |
| 10. | Maintenance and cleaning | | |
| | a. Environment, | √ | |
| | b. buildings, equipment, and others are in good condition. | √ | |
| | c. Production equipment is cleaned | √ | |
| | d. regularly. | √ | |
| | e. Garbage cannot accumulate in the environment and production space. | √ | |
| 11. | Employees use hand sanitizer after being in public places and touching objects that other people frequently feel. | | √ |

(Source: CPPB BPOM-IRT Regulation of the Head of BPOM RI Year 2012)

Based on the 2012 BPOM CPPB-IRT employee sanitation and hygiene check, it is obtained:

1. Health supervision by the company

A household business pays attention to the condition of its employees. This can be proven when recruiting healthy employees is a priority to be able to work. This is due to wanting to create a healthy work environment free from disease.

2. Use of Work Equipment

Before entering the production room, employees must wear gloves, hair nets, masks, work clothes, and shoes according to standards when in the production room. Several things become evaluation material which should be the use of standard gloves and shoes, but employees do not use standard gloves and do not use shoes. This equipment aims to prevent contamination from outside the production room.

3. Maintenance of nails and hair.

This employee's hair and nails have been maintained following the 2012 BPOM CPPB-IRT regulations. The maintenance of this employee's nails is not allowed to be long, and the pins are neatly trimmed. Hair care for this employee for women's hair must be neatly arranged, and for men hair is not allowed to be extended. Maintaining employee nails and hair is not to disturb employees' work and to avoid product contamination.

4. It is forbidden to wear jewelry.

This employee's hair and nails have been maintained following the 2012 BPOM CPPB-IRT regulations. The maintenance of this employee's nails is not allowed to be long, and the pins are neatly trimmed. Hair care for this employee for women's hair must be neatly arranged, and for men hair is not allowed to be extended. Maintaining employee nails and hair is not to disturb employees' work and to avoid product contamination.

5. It is forbidden to bring food and drink.

Based on practical work observations, the prohibition of bringing food and drink needs further evaluation because this has not been appropriately implemented. Some employees get food/snacks for employee meals and eat them during breaks; for snacks, employees eat them in their free time. This causes the employee's work focus to be disrupted.

6. Smoking is prohibited on the production site.

Employees have implemented the no-smoking regulations in the production room location properly. The prohibition of smoking in this production location is so as not to contaminate the product and the production environment.

7. Spitting is prohibited in a factory environment.

The company maintains cleanliness in the production environment, so the regulation on the prohibition of spitting in the production environment has been implemented very well. This aims to avoid microbial/bacterial contamination of the product.

8. Wash hands after using the toilet.

Based on observations during this practical work, employees have carried out the rules properly: washing hands with soap and running water after using the toilet in the sink/hand washing area provided.

9. Take off work equipment when going to the toilet or taking a break.

Based on observations during practical work, they have complied with the regulations correctly, namely removing work equipment before going to the toilet or during breaks. This aims to prevent bacterial/microbial contamination of the equipment used during production.

10. Maintenance and cleaning

Based on direct observation, the maintenance of the environment, buildings, and production equipment have complied with regulations. For production equipment, after production, the equipment used is cleaned. Thus, maintenance and cleaning comply with the rules properly.

11. Employees use hand sanitizer after being in public places and touching objects that other people feel frequently.

The application of employee hygiene is good, but it is still not optimal. During practical work, employees often use masks that do not comply with SNI 8913:2020, which states that the use of cloth masks consists of at least two layers of cloth. Employee discipline is good, such as maintaining hand hygiene, but it still needs to be evaluated because they don't use hand sanitizers.

The following is a check sheet for implementing building sanitation and Javanese noodle production equipment based on BPOM RI No. HK.03.1.23.04.12.2206 (Badan Pengawas Obat dan Makanan Republik Indonesia, 2012)

Table II. Check sheet CPPB-IRT application of building sanitation and production equipment.

| No. | Regulation | Suitable | Deviate |
|-----|--|----------|---------|
| 1. | Location and Production Environment | | |
| | a. IRT locations should be kept clean and free of garbage, odors, smoke, dirt, and dust. | √ | |
| | b. Garbage is removed and does not accumulate | √ | |
| | c. Trash cans are always closed. | √ | |
| | d. The road is maintained so that it is not dusty | √ | |
| 2. | Buildings and Facilities | | |
| | a. Building | | |
| | - The production room is not used to produce other products besides food. | √ | |
| | - The chamber construction is made of durable materials, easy to maintain, and clean. | √ | |
| | - The floor is made of a material that is waterproof, flat, smooth but not slippery, firm, and facilitates water disposal. | √ | |
| | - The floor is clean from dust, slime, and other impurities. | √ | |
| | - Walls or room dividers are waterproof, flat, smooth, light-colored, durable, not easy to peel off, and strong. | √ | |
| | - Doors should be made of durable materials, strong, not easily broken or damaged, flat, smooth, light-colored, and designed to open outwards or sideways. | √ | |
| | - Windows are made of durable materials, strong, not easily broken or damaged, flat, smooth, bright in color, and easy to clean. | | √ |
| | - The window construction is designed to prevent dust accumulation and is equipped with screens to prevent the entry of insects. | | √ |
| | - Adequate ventilation, always clean, not dusty, and not filled with cobwebs and complete gauze. | | √ |
| | b. Facility | | |
| | - The production room is well-lit and has a place for washing hands equipped with soap and dryers. | √ | |
| | - Food storage area | √ | |
| | - Food storage areas are separate from final products and easy to clean. | √ | |
| | c. Water supply | | |
| | - The water used for the production process must be clean and sufficient to meet the needs of the production process. | √ | |
| | d. Equipment | | |
| | - Production equipment is made of materials that are strong, durable, non-toxic, and easy to move or disassemble. | √ | |

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|---|---|
| - Surfaces that come in direct contact with food must be smooth, free of cracks, and not peeling or corroded. | √ |
| - Production equipment is placed following the sequence of the process. | √ |
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(Source: CPPB IRT Regulation of the Head of BPOM RI, 2012).

Based on the 2012 BPOM CPPB-IRT Check Sheet regarding the sanitation of buildings and facilities, it is known that:

1. Location and production environment

The company is very concerned about cleanliness around the production site and environment. IRT locations are always clean and free of garbage, odors, smoke, dirt, and dust. Waste is disposed of and not allowed to accumulate, trash cans are always closed, and roads are maintained adequately by sweeping and cleaning so they are not dusty.

2. Building and facility

The production room is only used for producing products. The room/building construction is made of durable materials, easy to maintain, and clean. The floor construction of the production room and storage room is different. The floor is made of ceramic in production room, so it is easy to clean and watertight because the floor construction with ceramic material cannot absorb water. The floor construction in the storage room is made of ceramic, making it easy to clean and impermeable to water, and the construction of this floor has fulfilled the CPPB-IRT regulations properly.

3. Water supply

According to Industry RI No. 75/M-IND/PER/7/2010, water is sourced from wells/PAM and equipped with pipes and reservoirs to drain the water. The source of clean water for the production process must meet the requirements for clean water quality. Clean water used for the production process and water for consumption must be separated. The water supply system or water supply is used in production, derived from clean gallons of water. While well water/water reservoirs are only used to flow water to the toilet (Menteri Perindustrian Republik Indonesia, 2010).

4. Production equipment

According to the Regulation of the Minister of Industry of the Republic of Indonesia No. 75/M-IND/PER/7/2010, Machinery and equipment must follow the type of production. Surfaces that do not come into direct contact with food must be smooth, not cracked, not peeling, not absorbing water, and not rusty. Equipment is easy to clean, disinfect and maintain to prevent the digestion of processed food (Menteri Perindustrian Republik Indonesia, 2010). Almost all machines and tools are on the CV. Sundoro Indonesia uses stainless steel material, so it is easy to clean and durable. The equipment used follows the reference, which has a smooth surface, is not perforated, and is easy to clean.

CONCLUSION

The sanitation and hygiene principles evaluation for noodle production employees is quite good. It can be seen from the sanitation and hygiene check sheet that almost all of the employees meet the CPPB-IRT regulatory standards. It's just that some things must be evaluated, such as the use of work equipment for employees and the prohibition of bringing food into the production room. From the results of direct observation and with a check sheet, it has been carried out according to the BPOM RI CPPB-IRT policy regulations. For things to be further evaluated, such as window construction or air ventilation. Efforts that can be made to improve employee sanitation and hygiene in production are to increase employee awareness of the importance of implementing sanitation and hygiene, which aims to minimize contamination of the production of the products produced.

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