



# Analysis of Quality Control of Bread Products Using the Seven Tools Method and Kaizen in Banana Bread Shop Jombang

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## ABSTRACT

Banana Bread Shop Jombang is a micro company engaged in the food industry by producing sweet bread with various variants. However, in the production process there are still defects in the product, there by reducing the quality of the bread production. The purpose of this study was to minimize defects in Mexican chocolate bread products produced by Banana Bread Shop Jombang by conducting an analysis using the seven tools and kaizen methods in the production process. The data collection technique used was interview, observation and documentation methods during March-May 2023. The results of the analysis showed that the types of defects that occurred in Mexican chocolate bread products were non-standard forms, burnt, flat, and cut by the packaging machine. Based on the four types of disability, flat is the most dominant with a total of 2.198 pcs. The occurrence of defects in mexico chocolate bakery products is caused by 5M factors: man, methods, machines, materials, and milieue. Improvements made to minimize the occurrence of defects in Mexican chocolate bread are by implementing the kaizen method.

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## 1. INTRODUCTION

Business world with a very competitive climate, organizations have to improve the quality of their respective products in an effort to achieve consumer satisfaction and be able to compete with other companies in similar industries. One of the main factors that determine the performance of a company is to produce high quality products. A product can be said to be of high quality if it can meet and satisfy consumer needs. Products must be produced in accordance with the specifications or standards set by the company, so that the company can

more easily control the quality of the products it produces. Quality control is carried out to produce products that meet the expected and planned standards, as well as to improve the quality of products that do not meet predetermined standards and maintain the appropriate quality as much as possible. The better the quality control is carried out, the fewer defective products are produced and in the end can increase sales and prevent a decrease in the company's income. The seven tools method is a statistical tool for finding the roots of quality problems, so you can use these

seven tools to find out the root causes of defective products, and to find out the causes of defects. Kaizen is a focused and structured continuous improvement process. Kaizen analysis is used to identify the causes of damage based on aspects of humans, machines, methods, materials, tools, and the environment (Alfadilah et al., 2022). The kaizen process does not stop after improvements are successfully implemented, but every progress will be incorporated as a new work performance standard. However, today's standards apply until new standards for improvement are found (Tri et al., 2019).

Banana Bread Shop Jombang is one of the Small and Medium Enterprises (SMEs) engaged in the bread processing industry with various flavors. However, in the midst of Banana Bread Shop Jombang's efforts to produce quality bakery products, there is a phenomenon that needs attention, namely the emergence of defects in bakery products. Defects in bakery products can include various things such as inappropriate shape, burnt, flattened, cut by packing machines, and other problems that can affect product image and consumer satisfaction. Defects in bread products can be caused by various factors, including production processes that lack relief, lack of labor knowledge and skills, and environmental factors such as temperature and humidity. These defects not only impact product image, but can also result in wastage of raw materials, decreased productivity, and lost customers.

Based on data on product defects that occur, researchers will make quality improvements for products that have a defect percentage of more than 5% according to the target of SMEs. In March 2023, a bakery product that has a defect percentage of more than 5% is Mexican chocolate bread with a defect percentage of 5.8%. In the context of the phenomenon of defects in bakery products described above, this study uses the seven tools method to identify the main causes of these defects and propose solutions that can help bread-producing MSMEs (Micro, Small and Medium Enterprises) reduce the rate of product defects and improve the quality of their bakery products. As well as an in-depth analysis of the

factors that influence the emergence of defects in bakery products, both in terms of technical and managerial aspects. This study also uses the Kaizen method to assist in identifying root causes of problems and finding appropriate solutions through a systematic and sustainable approach to improve production processes and product quality.

## **2. LITERATURE REVIEW**

### **2.1 Quality and Quality Control**

(Rufaidah, 2020) argues that quality basically functions as a weapon in competition and is used to provide guarantees to customers (users). Quality is expected to be used as an indicator of the success of an engineering and reduce product variations, quality will have an impact on increasing profitability. In terms of operational management, product quality is an important policy in increasing product competitiveness which must provide satisfaction to consumers that at least exceeds the quality of competitors products. Literature The word "quality" has multiple definitions, ranging from conventional to more strategic. The conventional definition of quality usually describes the direct characteristics of a product, such as performance, reliability, ease of use, aesthetics, and so on (Novianti, 2023). Quality control is an engineering and management activity that involves measuring the quality characteristics of a product products, compare them with specifications or requirements, and take appropriate action if there is a discrepancy between the actual and default views (Nofal Azhar Pratama et al., 2023). Control and quality assurance (QC) are involved with inspecting and evaluating finished work. Following World War II, Japan was the first country to introduce the idea of quality control. In later years, the quality-control idea expanded to the United States, the United Kingdom, and other nations, where it was first used in the industrial sector (Sutrisno, 2022).

### **2.2 Seven Tools**

Seven Tools is a set of tools that can be used for the purposes of analyzing data through mapping, compiling data, making diagrams, to tracing things that might happen and can explain a phenomenon that is happening in a company (Ansori, 2023). The seven quality tools are tools that play a role in monitoring,

obtaining and analyzing data used to detect and solve problems that exist in the production process, with the hope of achieving superior performance within the organization. The seven tools include (Wardana & Nina Mahbubah, 2022): (a) Flow chart, is a step-by-step process for completing the analysis, discussion, and communication tasks (b) Check sheet, is a data collection tool to simplify data recording, (c) Histogram, is a bar chart like tool used to display frequency distributions. The frequency distribution shows how often each different value in the dataset occurs, (d) Pareto diagram, is a bar charts and line chart tools used to compare different data types. This diagram serves to display the problem so that it knows how to solve the problem, (e) Control chart, is a tool to evaluate changes in data and the causes of deviations, (f) Scatter diagram, are used to determine the causes of two data, and (g) Cause and Effect Diagram, is a tool that functions to determine the factors.

**2.3 Kaizen**

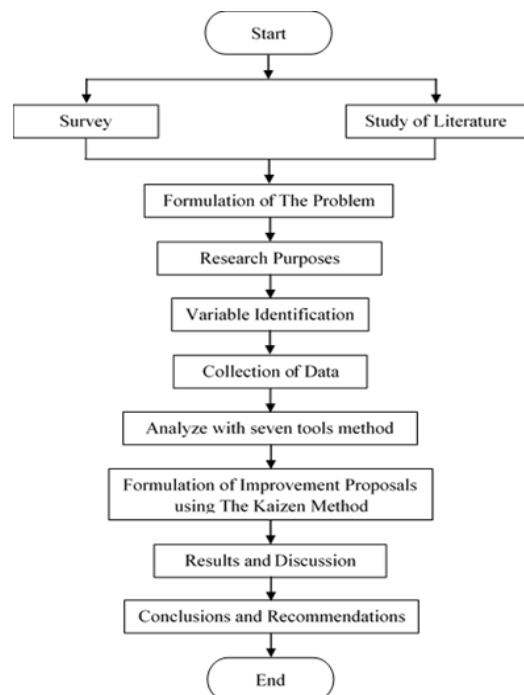
Kaizen comes from the word "Kai" means improvement and "Zen" means good. Kaizen is defined as continuous improvement. Key features of kaizen management include paying more attention to process than results, cross-functional management and using quality circles and other tools to support continuous improvement using quality circles and other tools to support continuous improvement (Indrawansyah & Jutika Cahyana, 2019). The implementation of kaizen is carried out using tools consisting of: (a) Kaizen five step plan. The five-step plan is the implementation of the 5-S (seiri, seiton, seiso, seiketsu, shitsuke) on the company as a suggestion repair (Indrawansyah & Jutika Cahyana, 2019), (b) Five M-checklist. Improvements using the 5M Checklist method. Viewed from the fishbone diagram, there are factors that cause product defects, namely humans, machines, methods, materials, and the environment. Suggestions for improvement can be made by analyzing these factors and looking for problems and then looking for solutions (Sejati et al., 2023), (c ) 5W+1H. The improvement using the 5W+1H method is that on the several factors found earlier, several questions are made which include What, Why, Where, When,

Who, and How. ). Then it will look for actions to be taken based on these questions (Sejati et al., 2023).

From the literature review that has been carried out, several research centers can be identified as the basis for further research. The following are some conclusions regarding the research center that can be concluded: (1) Lack of Focus on Kaizen Implementation in SMEs: Although the Kaizen concept is known to be effective in continuous improvement, it is rare to find research that specifically discusses the application of the Kaizen method in the context of bread-producing SMEs, (2) Lack of Solution-Oriented Research: Most of the research focuses more on identifying the problems and causes of bread defects. However, there is a need for research that is more solution-oriented, namely how UMKM can overcome these problems with concrete steps that can be implemented.

**3. RESEARCH METHOD**

In general, the methodological strategy that carried out in this study which describing the problem, literacy studies analytical methods and tools used as well research steps used detailed in the flowchart, as shown in Figure 1.



**Figure 1.** Research stages

To find out the quality control of products produced by a company, it is necessary to examine the production process so that these products can compete with other competitors. Therefore, it is necessary to carry out a quality control analysis of defective products produced during the production process. The data used in

this study are production data and data on types of defects for Mexican chocolate bread products in March-May 2023 at the Banana Bread Shop Jombang. The following is data on total production and total defects of Mexican chocolate bakery products from March-May 2023 (Table 1).

**Table 1.** Total production and defects of Mexican chocolate product during March-May 2023

Period	Production (pcs)	Defect (pcs)	Percentage (%)
March	19,665	1,148	5.8%
April	21,845	1,162	5.3%
May	23,680	1,465	6.4%
<b>Total</b>	<b>65,190</b>	<b>3,775</b>	<b>17.5%</b>

There are 4 types of defects that will be examined, namely flat, burnt, non-standard form, and cut by the packaging machine. The following is an explanation of the types of defects that occur in Mexican brown bread: (i) Burnt: Bread products absorb too much heat which is too high, so the product becomes dark brown in color, (ii) Flat: Bread products cannot expand properly, so the bread products become flat, (iii) Non-standard form: Bread products have a non-standard shape (not perfectly round), and (iv) Cut by the packaging machine: Bread products are cut by packing machines, so the bread is not whole.

**4. RESULT AND DISCUSSION**

Analysis and discussion are used to solve research problems regarding improving the quality of Mexican chocolate bread products at UMKM Banana Bread Shop Jombang using seven tools and kaizen methods. The analysis and discussion in this study are based on the results of data processing that has been done in the previous stages. The data analysis and

discussion section is carried out to identify problems and find out the factors that cause a decrease in quality, so that recommendations for improvements are obtained to minimize defects that occur in the production process of chocolate bread at UMKM Banana Bread Shop Jombang.

**4.1 Analyze with The Seven Tools Method**  
**1. Checksheet**

After obtaining data on production quantities and data on the number of defects on Mexican chocolate bread from UMKM, the next step is to make a checksheet or inspection sheet to find out the number of defects that occur in the Mexican chocolate bread production process period March-May 2023 at Banana Bread Shop Jombang. A check sheet is a tool for recording the results of data collection presented in the form of informative data. The results of the defective checksheet data for Mexican chocolate bread can be seen in Table 2.

**Table 2.** Checksheet of Mexican chocolate bread production period March-May 2023

Period	Total Production	Burnt (pcs)	Flat (pcs)	Non-Standard Forms (pcs)	Cut by The Packaging Machine (pcs)	Total Defect (pcs)
March	19,665	39	760	293	56	1,148
April	21,845	67	685	328	82	1,162
May	23,680	52	753	582	78	1,465
<b>Total</b>	<b>65,190</b>	<b>158</b>	<b>2,198</b>	<b>1,203</b>	<b>216</b>	<b>3,775</b>

During March-May 2023 Banana Bread Shop Jombang produced 65.190 pcs of Mexican chocolate bread and there were defects in the flat, burnt, non-standard form, and cut by the

packing machine. The most dominant defects were 2,198 pcs flattened, 1,203 pcs non-standard form, 216 cs cut by the packaging machine, and 158 pcs burnt, with a total defect

of 3.775 pcs pcs in 3 months.

## 2. Histogram

Histogram is a diagram that represents a number of data grouped into classes and intervals. The histogram is used as a tool in Banana Bread

Shop Jombang to determine the overall distribution of the number of defects that occur in bakery products. The following is Figure 2. histogram of Mexican chocolate bread defect data for March-May 2023 (Figure 2).

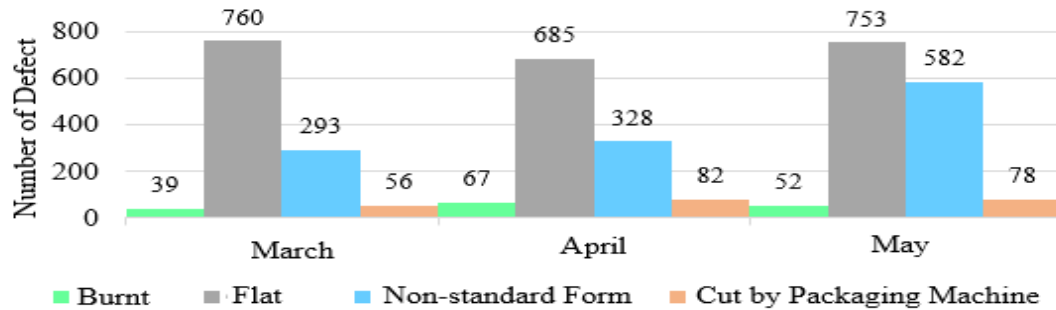


Figure 2. Histogram of defect product

## 3. Pareto Chart

The pareto chart also depicts a cumulative curve showing the effect of cumulative quality problems. This can help identify the most important issues that need to be resolved immediately (highest rating), rather than those that don't need to be resolved immediately (lowest rating) (Saori, 2021). Pareto charts can also be used to look for 20% type of defects which is 80% defects of the whole process production. Pareto chart function is to identify or select a problem key to improving that quality largest to smallest (Hairiyah et al., 2019). After the production data and product defect data for March-May 2023 have been collected, the next step is to make a Pareto chart to make it easier to see and check the percentage of each type of defect that occurs.

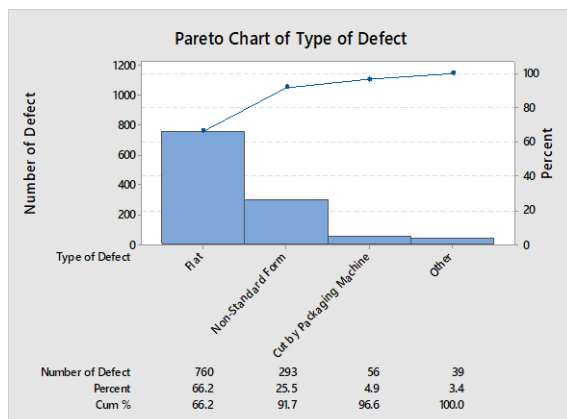


Figure 3. Pareto chart of defect in March 2023

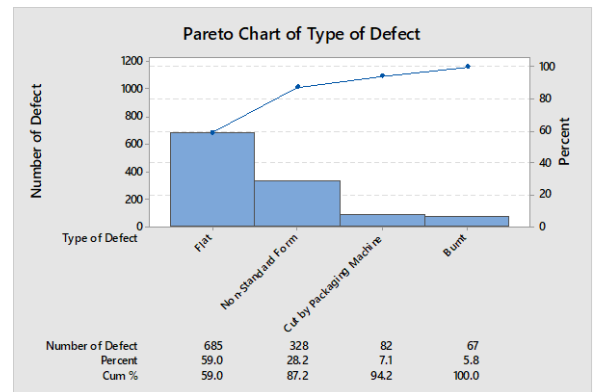


Figure 4. Pareto chart of defect in April 2023

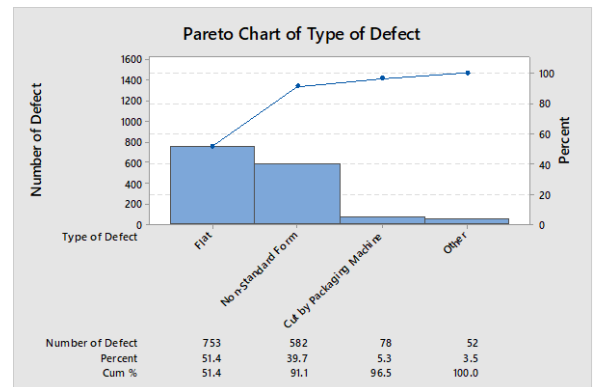


Figure 5. Pareto chart of defect in May 2023

## 4. Control Chart

After making a Pareto chart, the next step is to carry out an analysis using a control chart to find out whether the number of defects that occur is still within control limits or not. The control chart used in this study is the P attribute control chart. The P attribute control chart can measure the number of defects or defects in a production. The steps in the control chart are

calculating the percentage of damage and the Central line (CL), calculating the Upper Control Limit (UCL), and the Lower Control Limit (LCL). The p control chart used is a particular control chart for attribute data, namely the P-chart (Rahayu, Puji & Supono, 2020).

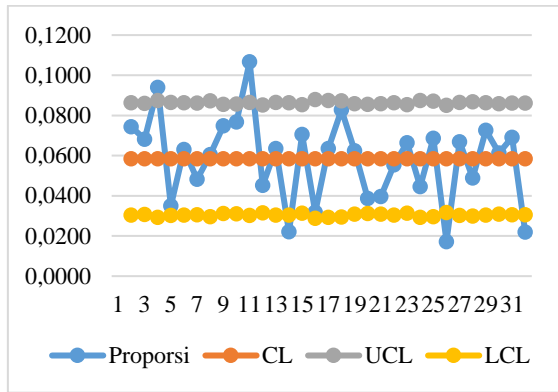


Figure 6. P-chart defects in March 2023

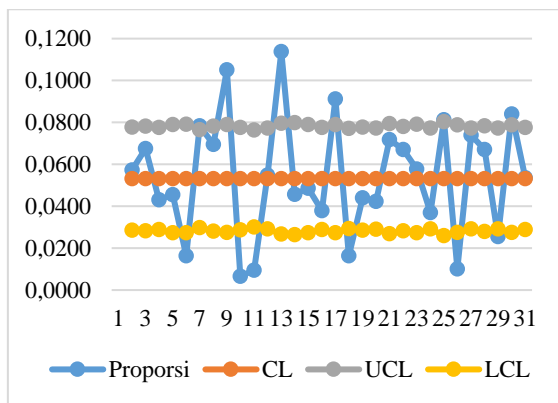


Figure 7. P-chart defects in April 2023

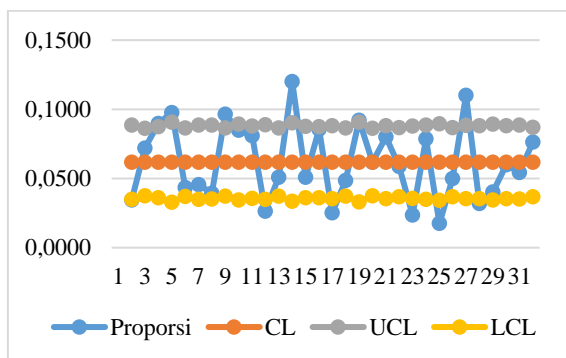


Figure 8. P-chart defects in May 2023

### 5. Scatter Diagrams

Furthermore, the presentation of defect correlation data is done by interpreting it through the Scatter Diagram, following the Scatter Diagram of the correlation of total

production with total defects (Figure 9).

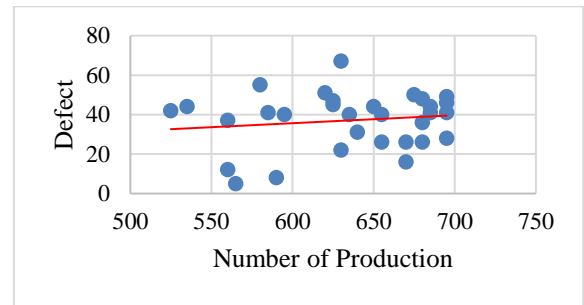


Figure 9. Scatter diagrams in March 2023

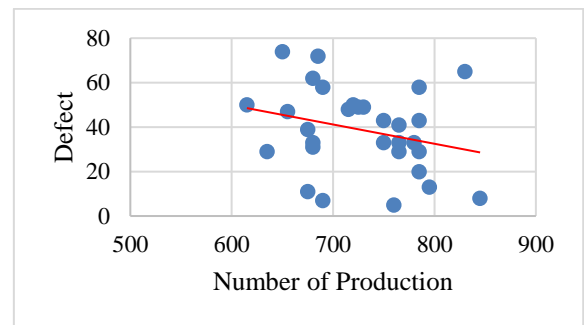


Figure 10. Scatter diagrams in April 2023

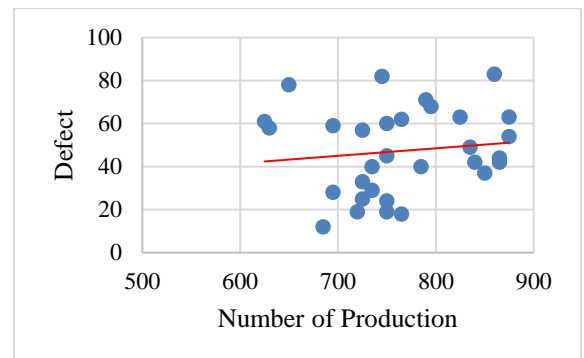


Figure 11. Scatter diagrams in May 2023

### 6. Cause & Effect Diagram

Fishbone diagram or cause and effect diagram because the diagram shows the relationship between cause and effect. With respect to statistical process control, causal diagrams are used to show the causative factors (causes) and quality characteristics (effect) that are elicited by these causal factor (Dewi et al., 2022). Likewise with Banana Bread Shop Jombang where in carrying out quality control of chocolate mexico bread products, it is known that the factors that cause defects in mexico chocolate bread products are man, method, machine, material and milieu identified by fishbone as from the processing results below (Figure 12).

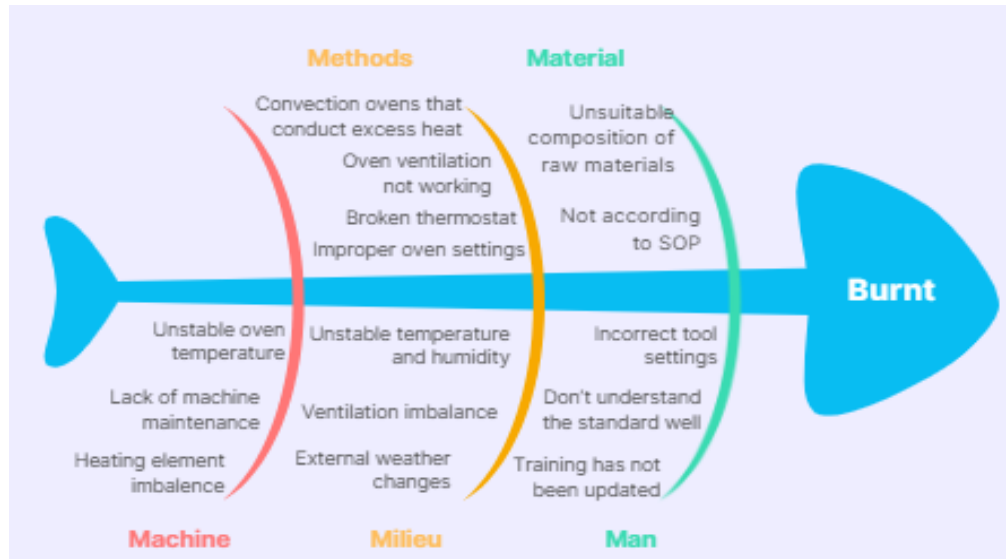


Figure 12. Fishbone diagram of burnt defect

Based on the analysis of Figure 12. above, the causes of burnt defects can be identified, namely there are five factors. First, man factors, such as not understanding the standards properly, errors in equipment settings, and inadequate training or supervision, can lead to errors in baking time or temperature, thus increasing the likelihood of burnt bread. Second, machine: Equipment issues, such as malfunctioning ovens or inconsistent heating, can lead to uneven baking, leading to some burnt bread. Third, material: inappropriate composition and quality of ingredients,

especially flour and yeast, can affect dough consistency and baking response. Poor quality ingredients can cause the dough to bake unevenly, increasing the risk of burning. Fourth, methods: baking processes and procedures, such as improper temperature or time settings, are critical. Deviations from standard methods often result in defects such as burnt bread. Fifth, milieu: external factors, such as high ambient temperatures or humidity levels, can affect oven performance and lead to overcooked or burnt bread.

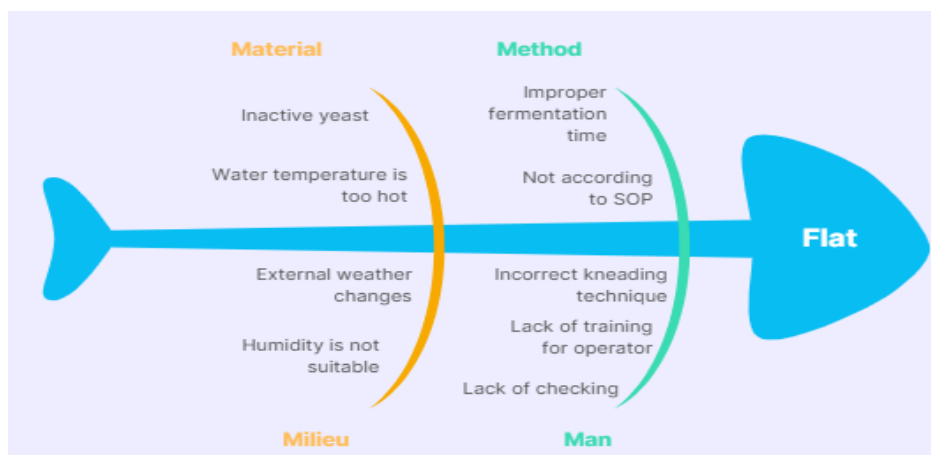


Figure 13. Fishbone diagram of flat defect

Based on the analysis of Figure 13. above, four factors have been identified as the causes of flat defects. First, man factors: Lack of understanding of production standards, errors in machine settings, and lack of training or

supervision can lead to errors in dough preparation and proofing, thus reducing the ability of the bread to rise. Second, material: yeast ingredients are inactive and the water temperature is too hot. Low-quality flour or



inactive yeast affects the elasticity and fermentation of the dough, reducing its ability to rise. Third, methods: Variations in processes and procedures, such as improper proofing time or dough handling techniques. Deviations from standard methods often lead to problems, including bread that remains flat. Fourth,

milieu: External factors, such as low ambient temperatures or humidity levels, affect dough fermentation and proofing. A cold or excessively dry environment can slow down or inhibit yeast activity, resulting in less dough rise.

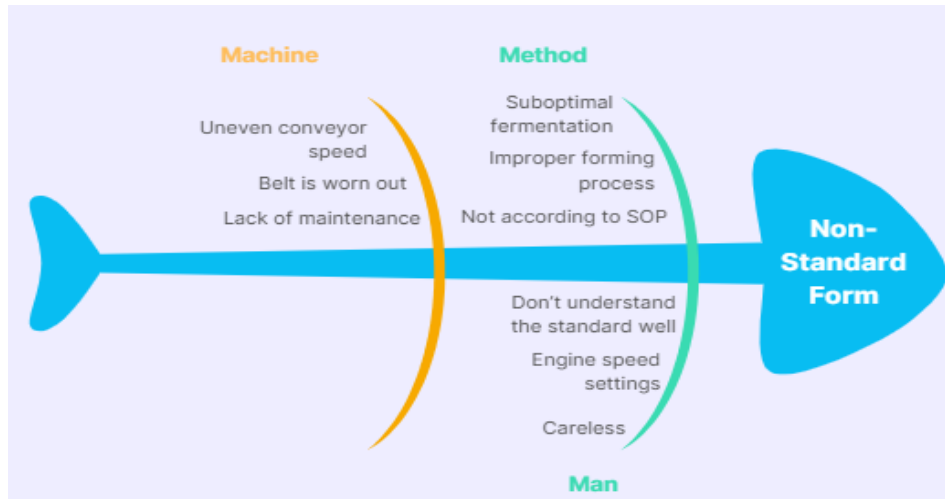


Figure 14. Fishbone diagram of non-standard form defect

Based on the analysis of Figure 14. above, the causes of non-standard form defect can be identified in three main factors. First, man: careless, not understanding the standards well or misunderstanding the standard procedures can lead to inconsistent dough handling, dough shaping, or improper positioning in the oven, which results in irregularly shaped bread. Secondly, machine: uneven conveyor speed, belts that are worn out, and lack of maintenance

can lead to inconsistencies in the dough portioning or shaping process. Third, methods: differences in technique, such as incorrect dough handling methods or insufficient resting time, can affect the elasticity and structure of the dough, leading to breads that do not conform to the desired shape. Following standardized procedures is essential to achieve a consistent shape.

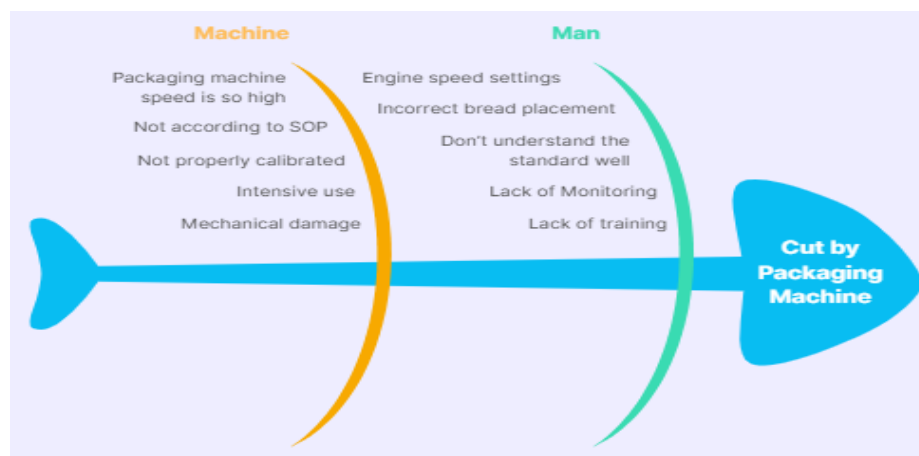


Figure 15. Fishbone diagram of cut by packaging machine defect

Based on the analysis of Figure 15. the causes of cut by packaging machine defect due to the

packaging machine can be attributed to two main factors. First, man: engine speed settings,



incorrect bread placement, inadequate training, lack of experience, or errors in operating the packaging machine can lead to improper handling and adjustment settings, thus causing the machine to accidentally slice or damage bread during packaging. Secondly, machinery:

extremely high machine speeds, damage or misalignment on the packaging machine, such as poorly calibrated knives or improper conveyor speeds, can increase the likelihood of damaged or sliced bread.

**4.2 Formulation of Improvement Plan with The Kaizen Method**

After the sources of the causes of the problem are identified, then the next step is to establish an improvement plan (action plan) for reduce the number of defects, the establishment of a corrective action plan aims to quality improvement. The improvement plan is

obtained by means of results brainstorming with the company. The implementation of this stage is only in the form of proposals for Banana Bread Shop Jombang. Where the proposed improvements made can provide input so that the number of defects can be reduced. Repair with implementing Kaizen using the Kaizen M Checklist method and Kaizen Five-Step Plan.

- a. Analyze with The Kaizen M Checklist

**Table 3.** Results of improvement analysis with Kaizen Five-M checklist for burnt defects

Factor	Problem	Proposed Solution
Man	1. Incorrect tools setting	1. Provide intensive training to related operators on how to use the tools properly and set the tools according to the required specifications. 2. Provide visual guidance or clear instructions on the job site. 3. Conduct periodic audits of training programs and ensure that materials and methods are always updated according to the latest developments.
	2. Don't understand the standard well	
	3. Training has not been updated	
Machine	1. Unstable oven temperature	1. Using an automatic control system that can regulate temperature continuously to maintain temperature stability. 2. Do regular checks on the heating elements and make sure they are working properly. 3. Establish a regular maintenance schedule to check and maintain the machine regularly.
	2. Heating element imbalance	
	3. Lack of machine maintenance	
Material	1. Unsuitable composition of raw materials	1. Checking the quality and characteristics of raw materials before they are used in production. 2. Double-check and clarify standard operating procedures (SOP) to ensure that clear and detailed instructions are in the manual. 3. Provide intensive training to employees on updated SOP.
	2. Not according to SOP	
Milieu	1. Unstable temperature and humidity	1. Make sure the production room is well isolated from external fluctuations in temperature and humidity. 2. Make repairs to the ventilation system to address air circulation imbalances. 3. Closely monitor external weather forecasts and plan production according to weather conditions that may affect the production environment.
	2. Ventilation imbalance	
	3. External weather changes	
Method	1. Convection ovens that conduct excess heat	1. Provides clear and detailed guidelines regarding the correct temperature, time and method settings for the type of bread produced. 2. Perform a thorough inspection of the oven ventilation system and repair any damage or obstructions preventing the ventilation from working. 3. Schedule regular maintenance on the ventilation system to keep it functioning properly. 4. Repair or replace a broken thermostat for more accurate oven temperature control.
	2. Oven ventilation not working	
	3. Broken thermostat	
	4. Improper oven settings	

**Table 4.** Results of improvement analysis with Kaizen Five-M checklist for flat defects

Factor	Problem	Proposed Solution
Man	1. Incorrect kneading technique	1. Provides operators with in-depth training on proper mixing techniques, including proper duration, intensity and speed. 2. Monitor the kneading process regularly to ensure that the correct technique is applied and the bread is properly prepared. 3. Establish clear procedures for carrying out periodic inspections throughout the production process, including when and how inspections are carried out.
	2. Lack of training for operator	
	3. Lack of checking	
Material	1. Inactive yeast	1. Yeast quality check before use in production to ensure it is still active and of good quality. 2. Store yeast in proper conditions and according to the manufacturer's storage directions.
	2. Water temperature is too hot	

		3. Give clear instructions to the operator regarding the proper water temperature for the fermentation process.
Milieu	<ol style="list-style-type: none"> <li>Humidity is not suitable</li> <li>External weather changes</li> </ol>	<ol style="list-style-type: none"> <li>Installing a more sophisticated humidity control system to maintain a stable production environment.</li> <li>Use a real-time humidity monitoring device to quickly detect fluctuations and take precautions.</li> <li>Closely monitor external weather forecasts and plan production according to weather conditions that may affect the production environment.</li> </ol>
Method	<ol style="list-style-type: none"> <li>Improper fermentation time</li> <li>Not according to SOP</li> </ol>	<ol style="list-style-type: none"> <li>Train operators on the importance of proper fermentation time and how to recognize the signs that the dough is ready.</li> <li>Monitor the fermentation process closely and use tools such as timers or temperature monitors to ensure consistent fermentation times.</li> <li>Review and update standard operating procedures (SOP) to ensure that clear and detailed instructions are in the manual.</li> <li>Train operators on updated SOP and the importance of following instructions properly.</li> </ol>

**Table 5.** Results of improvement analysis with Kaizen Five-M checklist for non-standard form defects

Factor	Problem	Proposed Solution
Man	<ol style="list-style-type: none"> <li>Engine speed settings</li> <li>Don't understand the standard well</li> <li>Careless</li> </ol>	<ol style="list-style-type: none"> <li>Provide special training to operators regarding machine speed settings according to the products produced.</li> <li>Provide clear and detailed user guide to adjust machine speed according to product standards.</li> <li>Have a verification process before production starts to make sure the machine speed is set properly.</li> <li>Provide intensive training to relevant personnel regarding product standards, standard operating procedures (SOP), and expected quality criteria.</li> <li>Include a periodic inspection process during production to reduce the risk of errors due to careless behavior.</li> </ol>
Method	<ol style="list-style-type: none"> <li>Suboptimal fermentation</li> <li>Improper forming process</li> <li>Not according to SOP</li> </ol>	<ol style="list-style-type: none"> <li>Ensuring the temperature and time of fermentation are in accordance with the recipe or SOP that has been set.</li> <li>Provide special training to operators in correct forming techniques, including proper pressure, desired shape and required process.</li> <li>Review and update SOP to ensure that clear and detailed instructions are in the manual.</li> </ol>
Machine	<ol style="list-style-type: none"> <li>Uneven conveyor speed</li> <li>Belt is worn out</li> <li>Lack of maintenance</li> </ol>	<ol style="list-style-type: none"> <li>Investigate and readjust the conveyor speed setting system to make it more even.</li> <li>Monitor conveyor speed regularly during production and use gauges to verify speed consistency.</li> <li>Carry out regular inspections of the conveyor belts for signs of wear or damage.</li> <li>Schedule regular maintenance on conveyor systems and related components to ensure optimal performance.</li> </ol>

**Table 6.** Results of improvement analysis with Kaizen Five-M checklist for cut by the packaging machine defects

Factor	Problem	Proposed Solution
Man	<ol style="list-style-type: none"> <li>Engine speed settings</li> <li>Incorrect bread placement</li> <li>Don't understand the standard well</li> <li>Lack of monitoring</li> <li>Lack of training</li> </ol>	<ol style="list-style-type: none"> <li>Provide clear and detailed user guide to adjust machine speed according to product standards.</li> <li>Provide clear instructions to operators on how to properly place loaves at each stage of production.</li> <li>Provide intensive training to relevant personnel regarding product standards, standard operating procedures (SOP), and expected quality criteria.</li> <li>Create a comprehensive and structured training program for operators</li> </ol>
Machine	<ol style="list-style-type: none"> <li>Packaging machine speed is so high</li> <li>Not according to SOP</li> <li>Not properly calibrated</li> <li>Intensive use</li> <li>Mechanical damage</li> </ol>	<ol style="list-style-type: none"> <li>Carry out a trial run and verify the speed of the machine to ensure that there is no risk of product damage during packaging.</li> <li>Adjust the speed of the packaging machine according to the capacity of the machine and the type of product being packaged.</li> <li>Review and update SOPs for the packaging process, ensuring clear and detailed instructions are in the manual.</li> <li>Schedule regular calibrations for packaging machines to ensure accuracy and consistency of measurements and settings.</li> <li>Schedule regular maintenance based on high usage frequency to prevent further wear and tear.</li> <li>Perform a visual inspection before and after each use for signs of damage or wear.</li> </ol>

b. Improvements using The Kaizen Five-Step Plan

The concept of kaizen consists of several things, one of which is the 5S Movement. The concept of the 5S movement is the process of changing

work attitudes by implementing structuring, cleanliness and discipline in the workplace, it can let someone know how to treat the workplace Correct (Santos et al., 2022).

**Table 7.** Results of improvement analysis with Kaizen Five-step plan

Kaizen Five-Step Plan	
Seiri (sorting)	<ol style="list-style-type: none"> <li>1. Separation of necessary items from unnecessary items based on their importance.</li> <li>2. Grouping defective products with those that are not defective by place so that defective products are not carried over to the packaging department</li> <li>3. Make data grouper machine according type and function to make it easier inspect and machine maintenance</li> <li>4. Grouping of machine components prone to damaged</li> </ol>
Seiton (arrangement)	<ol style="list-style-type: none"> <li>1. Placing manual procedures for using the machine around the machine area.</li> <li>2. Placing a backup component that machine prone to damage in which place easy achieved</li> <li>3. Setting up a humidity meter and humidity controller to automatically monitor and adjust ambient humidity.</li> </ol>
Seiso (cleanliness)	<ol style="list-style-type: none"> <li>1. Cleaning and caring engine from scraps production</li> <li>2. Cleaning up the environment or work area as a result of machine repair or scrap production</li> </ol>
Seiketsu (maintenance)	<ol style="list-style-type: none"> <li>1. Perform machine maintenance on a regular basis</li> <li>2. Management supervises operators in the use of production equipment</li> </ol>
Shitsuke (habituation)	<ol style="list-style-type: none"> <li>1. Get used to work accordingly Standard Operating Procedure (SOP)</li> <li>2. Get used to always do inspection good machine before and after the production process in accordance with the Standard Operation Procedure (SOP)</li> <li>3. Carry out seiri, seiton, seiko and seiketsu practices continuously without exception so that UMKM managers and managers as supervisors are always accustomed and create a more conducive work environment</li> </ol>

The results of research on the problem of bread defects provide an important contribution in understanding the factors that cause product defects and repair solutions that can be taken by UMKM. This research also strengthens previous similar research (Butanil, 2019; Nofal Azhar Pratama et al., 2023) using seven tools and the kaizen method where the use of these two methods can provide benefits for companies in identifying causes of defects and providing suggestions for improvements for companies that are sustainable and structured so that product quality can be improved to obtain increased customer satisfaction. increasing company profits, increasing company competitiveness to maintain industry sustainability in the future.

**5. CONCLUSION**

Based on the results of data analysis using the Seven Tools method, it can be seen that the biggest defect in Mexican chocolate bread products is flat. In this case, to minimize defects in Mexican chocolate bakery products, namely making suggestions for improvements using the kaizen method. The proposed improvements include providing training to refresh the Standard Operating Procedure (SOP), carrying out periodic maintenance of the machine so that

it doesn't get damaged quickly, getting used to always checking the machine, both before and after the production process according to standard operating procedure (SOP), and arrangement of air circulation equipment as needed. As for the advice that can be given to UMKM, it is hoped that the Banana Bread Shop Jombang can improve product quality by reduce the percentage of product defects by making improvements during the production process. UMKM are expected to consider the proposed improvements given by the researcher before being implemented.

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