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ANALYSIS OF QUALITY CONTROL OF SOY CHIPS WITH THE SIX SIGMA METHOD IN RAGILE SMEs, KEDIRI REGENCY

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Abstract
Tempe is a typical Indonesian food that is in great demand by Indonesian people, apart from its delicious taste, the price is also relatively cheap. Tempe can be processed into various kinds of processed tempe products, one of the processed tempe products is tempe chips. This research was carried out in April 2022, at Ragile UMKM, Kediri Regency. This study aims to reduce product defects by quality control and determine what factors affect the quality of soybean chip products. The data analysis method used to answer the objectives of this study is data analysis using the Six Sigma method, which is a philosophy in reducing and preventing defects so that costs are reduced and customers are satisfied with the expected product. Six Sigma is also defined as a well-designed approach to identify and eliminate defects, errors or failures in business processes or systems with a focus on the performance characteristics of these processes that are of interest to consumers. The results of this study are the types of product defects that occur in the production of Ragile MSME soybean chips including non-full round defects, double defects and thick defects. The highest defects occur in the size of defects that are not full circle with a defect percentage of 90.38%. This UMKM has a sigma value of 2.7 or it can be said that it is included in the category of the standard level of the Indonesian industry average. The solution to the factors that cause product defects caused by the fermentation place is to provide shelves so they are not exposed to direct sunlight, the hot room environmental factor is to provide a fan in the production room, and the factor of workers who are negligent in cleaning the chopping machine is by make SOP on the use of chopper machine.

Keywords: Tempe, Six Sigma.

PRELIMINARY

Tempe is a typical Indonesian food that is in great demand by Indonesian people, apart from its delicious taste, the price is also relatively cheap. Tempe can be processed into various kinds of processed tempe products, one of the processed tempe products is tempe chips. Ragile SMEs are SMEs that produce tempeh chips with processing made from soybean seeds. The tempe chips sold by Ragile SMEs are different from tempe chips in general, the difference is the size of the tempe chips produced by Ragile SMEs which are smaller in diameter than tempe chips in general, which is 3.5 cm. The small size of the chips produced makes MSME owners name their products soybean chips.

Umkm Ragile is one of the Micro, Small and Medium Enterprises in Kediri Regency, to be precise in Silir Village, Islamic Boarding School District. MSMEs engaged in food processing have superior products, namely tempeh chips. Ragile UMKM tempe chips are produced from raw materials, namely soybeans. UMKM Ragile markets its products to gift shops and also to resellers who sell their products online. UMKM Ragile was founded in 2019 to be exact in October.

Soybean chips produced by Ragile SMEs are made with the help of machines, namely automatic choppers and oil-slicing spiner machines. In producing soybean chips, there are often chips that are produced with defects, these defects include chips that are damaged, tangled and too thick. This could be caused by several factors, namely raw materials, production methods, equipment used and labor factors. These defective chips are one of the problems experienced by Ragile SMEs in terms of the quality of their production. According to (Dahliani 2020) The quality of production results is influenced by how operational the method is to carry out work or production until a product is formed so that an analysis of quality control is needed in the production process.

Quality control is an industry's effort to produce something in accordance with what consumers want. There are many methods used in quality control, one of which is Six Sigma. Statistical quality control using the Six Sigma method is often applied by companies in controlling product quality. The Six Sigma method can also be viewed as a production process control that applies the concept of DMAIC (Define, Measure, Action, Improve, and Control) in quality improvement (Gaspersz 2002) . Six Sigma is uniquely driven by a strong understanding of facts, data, and statistical analysis, as well as a keen eye for managing, improving, and reinvesting the business. Six Sigma also provides proven benefits of reducing costs, increasing productivity, growing market share, reducing defects, and also developing production or services (Pande 2000).

METHOD

Time and Place of Research

This research was carried out in April 2022, at Ragile UMKM, Kediri Regency.

Tools Tools used in Six Sigma

Quality control and measurement can use several statistical tools. Statistical tools assisting in the *Six Sigma process* are used to monitor, analyze, manage, and also improve processes based on the data obtained. Several statistical tools such as control charts, pareto charts, causal charts can be used to help identify and analyze product deviations during the production process. The following are the tools used in the Six Sigma method in analyzing data, including:

1. Flowcharts
2. Cause and effect diagram
3. Control Map
4. FMEA

Method of collecting data

The data collection stage is the stage for obtaining the completeness of the data in this study. There are two types of data collected, namely: Primary Data, namely data obtained directly at the research site (observation) by conducting interviews with Ragile MSME owners and taking documentation. The data obtained is in the form of the production process of Soy Chips, the types of defects produced, the number of defects in each production, and the causes of product defects. Secondary Data, namely data obtained by literature study that comes from several references such as books, articles, journals and theses related to reducing product defects and the Six Sigma method with the DMAIC approach (Define, Measure, Analyze, Improve, Control). Having a literature study can facilitate problem solving and can be used to compare one reference with another.

Data Analysis

The data analysis method used to answer the objectives of this study is data analysis using the Six Sigma method, which has DMAIC stages, namely *Define* (D), *Measure* (M), *Analyze* (A), and *Improve* (I). The DMAIC stages are as follows:

1 *Define*

The first stage that is carried out is the process of defining or defining. Define is done to collect information and data related to problems during the production process, in the form of company records or the results of interviews with related parties. Then determine the type of defect and *Critical To Quality* (CTQ). Determination of CTQ is done by calculating the frequency of each type of defect produced. Furthermore, making a pareto diagram to determine the type of defects produced.

2 Measures

This stage is carried out by measuring and calculating the product defect data obtained. Measurements are carried out by collecting data, making control charts, calculating process capacity and calculating the value of the Defect Per Million Opportunity (DPMO). The calculation steps are as follows:

1. Control Map Making

Control chart to find out the middle limit for product defects and whether the product defect data is still within the control limits. In this study used control chart p. The p control chart is used to observe the proportion or comparison between defective products and total production. Making a p control map can be done following the following steps (Khomah *et al* 2013):

A. Sampling is carried out.
B. Grouping of sample data obtained.
C. Center line calculation (p)

$$p = \frac{\sum \mathrm{p}}{\sum \mathrm{n}}$$

Description: $\sum$p = total defects found
$\sum$n = total inspections performed

D. Calculating the upper control limit (UCL) and lower control limit (LCL)

UCL$= P + 3\sqrt{\frac{p(1-p)}{n}}$

LCL$= P - 3\sqrt{\frac{p(1-p)}{n}}$

2. Calculation of DPMO and Sigma

Defect Per Million Object (DPMO) is a unit that expresses the probability of failure occurring for every one million products. DPMO is used as an analytical tool to measure the proportion of defective products in a group. To determine the DPMO value calculated by the formula:

DMPO$= \frac{\text{jumlah cacat}}{\text{Jumlah Produksi x Jumlah Potensi Kecacata}} x 1.000.000$

Calculation of the sigma level can be carried out with the help of the Motorola corporate concept. To get a sigma score, the DPMO value must be known and then converted to a sigma score through the sigma conversion table. The parameters for achieving sigma d can be seen in Table 1

Table 1 Sigma level conversion to DPMO

Percentage that meets specifications	DPMO	Sigma levels	Information
31 %	691,462	1 –sigma	Very uncompetitive
69.20 %	308,538	2-sigma	Indonesian industry average
93.32 %	66,807	3 –sigma	-
99.379 %	6,210	4 –sigma	US industry average
99.977 %	233	5 –sigma	Japanese industrial average
99.9997%	3,4	6 –sigma	World class industry average

Source: Gaspersz (2002)

2. Process Capability

Process capability is an analysis of relative variability of product specifications and to assist production development in reducing the amount of variability that occurs (Rimantho and Athiyah 2019). According to Sucipto et.al (2018) measurement of process capability can be seen from the calculation of the process capability index and final yield with the following formula:

Final yield = 100% - $(\frac{\text{jumlah cacat}}{\text{Jumlah Inspeksi}}) x 100$

cp = $\frac{\text{Nilai Sigma}}{3}$……………………………………….

The Cp assessment criterion is if the Cp value > 1.33 then the process capability is very good. If 1.00 ≤ Cp ≤ 1.33 then the process capability is good, but strict control is still needed. If Cp < 1.00, the process capability is low, so it needs to improve its performance through improving the process itself (Putri 2014).

Results and Discussion

Quality Control Analysis

Quality control at RAGILE SMEs is carried out manually by the owner. However, in this study the application of the theory regarding the quality control of tempe chips in RAGILE UMKM was carried out, so that the level of damage was known in April and May 2022. Based on the results of the research conducted, it was known that there were 3 types of defects in RAGILE UMKM, namely not full circle, too thick and the chips are not double.

1. Define

At this stage identification of data collection related to the problems faced. The results of identifying the type of defect are as follows:

1. Not Full Round

Chips that are not full round are the size of tempeh after the frying process with an incomplete shape. Based on the Indonesian National Standard number 2602: 2018 concerning the standard quality of tempe chips on display, the display standard for tempe chips is a ratio of less than 10% compared to the total

2. Thick Size

The thick size in question is tempe chips which have a thickness that exceeds the thickness of other tempe chips. The size that is too thick can cause the texture of the tempe chips to be too hard to consume.

3. Double Chips

Gancet chips cause the texture to become hard, the sticky tempeh chips occur during the frying process. 2 pieces of chips that merge causes the chips to double. Tempeh that is fried all at once without gradual steps can cause tempeh to stick because the dough that is not yet dry hardens together in the frying oil.

After identifying the type of defect then proceed with determining the CTQ (*Critical to Quality*). Critical To Quality (CTQ), are very important attributes to pay attention to because they are directly related to customer needs and satisfaction. CTQ is an element of a product, process, or practices that has a direct impact on customer satisfaction. The purpose of CTQ identification is to determine the level of defects that occur in the tempe chip production process.

Table 2 Percentage of Defective Types of Soybean Chips in Ragile SMEs (April-May Period)

month	Defect type	total production	number of defects	percentage of defects (%)
	Not full round		16285	89.06
April	Double	60000	1335	7.30
	Thick		665	3.64
	Not full round		17018	91.69
May	Double	60000	928	5
	Thick		614	3,31

Each month the percentage of chips with non-round defects is included in the highest type of defect, in April this type of defect has a percentage of 89.1%, for double defects it is 7.3% and for thick defects it is 3.64%. In May, non-round defects had a percentage of 91.69%, double defects were 5% and thick defects had a percentage of 3.31%. The next step is to carry out further analysis using a Pareto diagram to determine the highest defect value in soybean chips in more detail.

Pareto diagram is one of the diagrams used to identify defective products in quality control from the largest value to the smallest value. In the Pareto chart there are bar graphs and line graphs that illustrate the comparison of each type of data to the overall data (Devani and Fitri 2016). Pareto diagram images can be seen in Figure 4

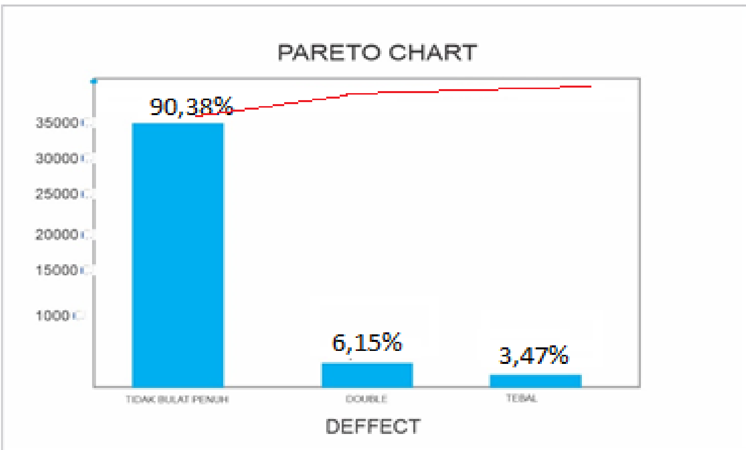


Figure 4 Pareto diagram of the number of defective soybean chips in April and May 2022

Based on the results of the pareto diagram, Figure 4 above shows the level of product defects based on the percentage of the number of defects based on the type of defect in Ragile SMEs. The highest percentage of defects is found in incomplete round defects with a frequency of 90.38%, then double chips with a percentage of 6.15% and thick defects with 3.47%. The number of chips that are not completely round has a presentation of 90.38%. The cause of the chips not being full round is thought to be caused by several factors, namely the tempeh used has less than optimal fermentation results or is not solid.

4.1.1 *measures*

Measure is an advanced stage of the *define stage* by performing calculations from the data that has been collected. Measurement of the number of products that experience defects during the production process is outlined in the P chart control chart then calculates the DPMO value and sigma value.

This P-chart is made by calculating the center line (Control Limit/CL), upper control limit (UCL), and lower control limit (LCL).

1. Calculates for each subgroup the value of the proportion of defective units
2. Calculates the average value of p
3. Calculating the control limit uses the following formula:

$$\mathrm{P} = \frac{\sum \mathrm{Cacat}}{\sum \mathrm{Jumlah\ Produksi}}$$

$$\mathrm{CL}\ (Control\ Limit) = \frac{\sum \mathrm{np}}{\sum n}$$

$$\mathrm{UCL}\ (Upper\ Control\ Limit) = \mathrm{CL} + 3\sqrt{\frac{\mathrm{CL}\ (1-\mathrm{CL})}{\mathrm{n}}}$$

$$\mathrm{LCL}\ (Lower\ Control\ Limit) = \mathrm{CL} - 3\sqrt{\frac{\mathrm{CL}\ (1-\mathrm{CL})}{\mathrm{n}}}$$

Description: n = Number of samples

np = Number of defects

- Calculate the average of the final product as follows:

$$\mathrm{CL} = \frac{36845}{120000} = 0{,}307$$

- Calculating *Upper Control Limit* (upper control limit):

$$\mathrm{UCL} = \mathrm{CL} + 3\sqrt{\frac{\mathrm{CL}\ (1-\mathrm{CL})}{\mathrm{n}}}$$

$$= 0{,}307 + 3\sqrt{\frac{0{,}307\ (1-0{,}307)}{4000}}$$

$$= 0{,}33$$

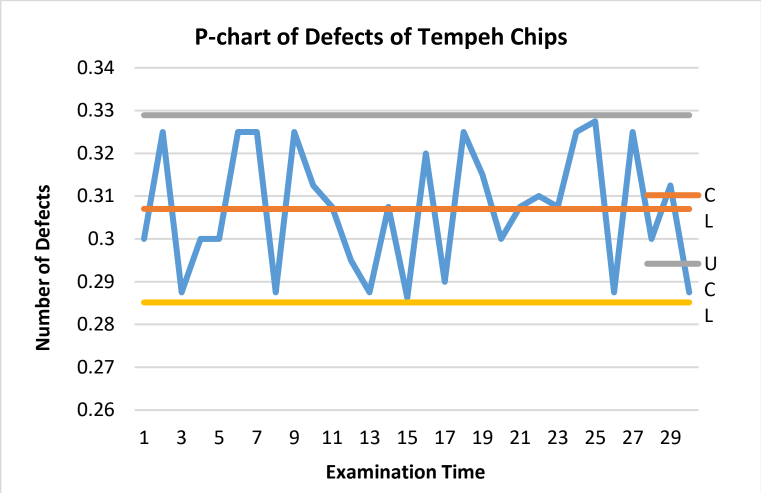
- Calculating the *Lower Control Limit* (lower control limit):

$$\mathrm{LCL} = \mathrm{CL} - 3\sqrt{\frac{\mathrm{CL}\ (1-\mathrm{CL})}{\mathrm{n}}}$$

$$= 0{,}307 - 3\sqrt{\frac{0{,}307\ (1 - 0{,}307)}{4000}}$$

$$= 0{,}285$$

Based on the formula above, the next step is to make a *P-Chart control chart, which* can be shown in Figure 5.



Based on the diagram of the results of processing with *Microsoft Excel* , the graph in Figure 4.4 is obtained. In the P - *chart* it is known that the upper control limit (UCL) is 0.3289, the average P is 0.307, and the lower control limit (LCL) is 0.285. UCL and LCL values are used as guidelines for determining processes within control limits (Wilujeng and Wijaya 2019) . Based on the graph, it can be seen that there is no chart that is outside the control limit line so that it can be said that the tempeh chips production process can still be controlled.

Then calculate the DPU, DPMO and sigma values as follows:

a. *Defects Per Unit* (DPU) is a benchmark that reflects the average number of defects of all types to the total units produced. For example, if the DPU is 1, it means that each unit will have 1 *defect.* If DPU 0.25 indicates a probability that 1 out of 4 units will have 1 *defect,* (Pande and Peter, 2002) with the formula:

$$\text{DPU} = \frac{\text{Jumlah defect yang terjadi}}{\text{Jumlah total unit}}$$

b. *Defects Per Million Opportunities* (DPMO) which indicates how many *defects* will occur if there are one million opportunities. DPMO is also often referred to as *Parts Per Million* (PPM) with the formula:

$$\text{DPMO} = \text{DPU x } 1.000.000$$

c. Sigma size is the most important variable in the *six sigma method,* because this variable indicates process variability and at what level the process sigma is managed. The sigma level also shows whether the process being carried out is efficient and correct. The sigma value is obtained by obtaining the DPMO value which is then converted using a sigma conversion table (Pande and Peter, 2002).

Table 3 Measurement of Sigma Levels and Defects Per Million Opportunities (DPMO) April -May 2022

MONTH	DATE	Number of Samples	Number of Defects	DPU	DPMO	Sigma Value
APRIL	4	4000	1200	0.3	300000	2,78
	5	4000	1300	0,325	325000	2,74
	7	4000	1150	0,2875	287500	2,8
	11	4000	1200	0,3	300000	2,71
	12	4000	1200	0,3	300000	2,78
	13	4000	1300	0,325	325000	2,73
	14	4000	1300	0,325	325000	2,68
	19	4000	1150	0,2875	287500	2,83
	20	4000	1300	0,325	325000	2,74
	21	4000	1250	0,3125	312500	2,76
	22	4000	1230	0,3075	307500	2,77
	25	4000	1180	0,295	295000	2.77
	26	4000	1150	0.2875	287500	2.77
	27	4000	1230	0.3075	307500	2.76
	28	4000	1145	0.28625	286250	2.83
	Amount	60000	18285	4.7125	4571250	
	Average	4000	1219	0.30475	304750	2.77
MAY	9	4000	1280	0.32	320000	2.7
	10	4000	1160	0.29	290000	2.8
	11	4000	1300	0.325	325000	2.7
	12	4000	1260	0.315	315000	2.75
	13	4000	1200	0.3	300000	2.78
	16	4000	1230	0,3075	307500	2,77
	17	4000	1240	0,31	310000	2,77
	18	4000	1230	0,3075	307500	2,77
	20	4000	1300	0,325	325000	2,73
	23	4000	1310	0,3275	327500	2,73
	24	4000	1150	0,2875	287500	2.81
	25	4000	1300	0.325	325000	2.73
	26	4000	1200	0.3	300000	2.78
	27	4000	1250	0.3125	312500	2.76
	30	4000	1150	0.2875	287500	2.81
	Amount	60000	18560	4.64	464000	
	Rate-rate	4000	1225	0.31	309333	2.76

Based on the calculation results in Table 4.3, it is known that the production value of soybean chips at Ragile SMEs has a sigma value in April of 2.77 with the possibility of defects occurring as many as 304,750 products in 1 million. Whereas in May it has a sigma value of 2.76 with a probability of defects occurring in one million products of 309,333 products. From the sigma results in April and May the Sigma value has reached the Indonesian industrial value standard. According to Carroll (2013), the average industry in Indonesia has a Sigma value of 2.00, far from the world's industry average. This needs improvement to achieve the highest Sigma value and reduce the number of defective products. The Sigma level is used to describe how well the process variations meet customer requirements (Pyzdek and Keller, 2010).

1. Analyze

Analysis is carried out to find and describe the factors that cause the chips to not be full round. The analysis process uses a causal diagram (fishbone) and FMEA (Failures Modes and Effect Analysis). The analysis was carried out with expert respondents, so that the factors that cause defects are known in more detail. The steps in the analyze phase are as follows:

2. Analysis of Cause and Effect Diagrams

Cause and effect diagrams are used to identify causal relationships with factors that cause problems. The cause and effect diagram describes several 4M & 1E categories, namely Manpower, Machine, Method, Materials, and Environment. The key to analysis is success in finding the root cause that drives risk (Susilo and Kaho, 2018). *The fishbone diagram* describes the problem from its roots, making it easier to determine corrective actions after it is known that the biggest defect data is tempeh chips that are not full circle, then they are analyzed. Cause and effect diagrams are prepared based on the results of discussions with MSME owners. According to Martono (2019), finding and eliminating the causes of defects can improve production performance. Analysis of the cause and effect diagram of Soybean Chips as follows:

A. Not full round chips

Environmental factors, namely changes in room temperature which often change due to several causes, namely the room is always too open, and the presence of a glass roof that does not catch the sun results in less than optimal results of fermented tempeh as a raw material. Placing the fermented tempeh on the table and covered with a cloth that is too thick or a prayer rug can affect the fermented tempeh because it is too hot and becomes deficient in oxygen. Because fungi are aerobic, if there is no oxygen, the spores will not germinate. (Yastanto 2020). Tempe mushroom requires oxygen in its growth. To ensure this, the tempe packaging material is usually punched with a nail. (Agrippina et al., 2017) . . According to Suprihatin (2010) tempe mold can be classified into microbes that are mesophilic, that is, they can grow well at ripening temperatures (25-27˚ C).

B. The chips are too thick

In the human factor, the cause of thick chips defects is due to negligence of employees, so they forget to clean the knife on the automatic slicing machine. Automatic slicing machines require cleaning the knife after each chopping because it will affect the chopping results of the machine. Chips that are too thick cause the texture of the chips to be too hard, making the chips difficult to eat.

C. Double Tempeh Chips

The defect in the production of double chips occurs during the frying process. Environmental factors, namely a room that is too hot has a temperature (34°C) during the day causing workers to be uncomfortable in carrying out their duties. The hot room causes workers to get tired easily, thereby reducing the level of concentration when frying tempeh chips so that when frying causes finished chopped tempeh to be fried simultaneously without pause causing tempeh to become sticky during the frying process which results in double chips. Human work productivity reaches its highest level at temperatures around 24°C – 27°C (Wignjosoebroto, 2003). If the air temperature exceeds 30°C, it can reduce comprehension and employees tend to make mistakes at work and can cause physical fatigue so that work productivity also decreases (Tjitro and Jerry, 2004).

4. FMEA

After analyzing the factors that cause defective products, the RPN value is then calculated to find out the problem that has the highest priority to be addressed immediately. The analysis used is the *Failure Mode Effect Analyze* (FMEA) method. According to Andiyanto et.al (2017) in this method there are three things that can determine the main priority that must be addressed first, including Severity (level of damage), Occurence (frequency), and Detection (level of detection). After obtaining the Severity (S), Occurence (O), and Detection (D) values, then proceed with looking for values.

Table 4 FMEA analysis on Ragile SMEs

No	Cause of failure	Severity / severity (S)	Occurrence/ incident (O)	detection/ Detection (d)	RPN (Risk Priority Number)	Rating
1	Place and room conditions for tempe fermentation	4	4	4	64	1
2	Workspace is too hot	3	3	2	18	2
3	Forgot to clean the chopper blades	3	2	1	6	3

Based on the results of Table 4. The highest RPN value is found in the place and condition of the tempe fermentation room with a value of 64. The highest value in the RPN indicates a problem with the main priority in the repair stage. After obtaining the ranking from the RPN in the FMEA calculation process, the next step is to propose improvements to the prioritized causes of failure. This aims to improve the quality of soybean chip products at Ragile SMEs. This proposed improvement is not only carried out on the highest RPN value but on all failures that occur during the production process.

5. *Improve*

This stage is carried out to determine the proposed improvements related to the problems that cause product *defects* . After that, an action plan is determined to carry out quality improvement (Gaspersz 2002 in Susetyo et al, 2011). This proposed improvement is used as a solution to fix and prevent problems that occur in the process. The proposed improvements can be seen in Table 5.

Table 5 Proposed Improvements

ranking	Cause of Failure	RPN	Proposed Improvements
1	Place and room conditions for tempe fermentation.	64	- Provide a special room with a stable temperature or not exposed to direct sunlight - Provide a shelf with a temperature thermostat
2	The frying pan is too hot.	18	- Gives a fan - Changing working hours earlier - Change layouts
3	Forgot to clean the chopper blades.	6	- Provide SOP on the chopping process - Supervise the MSME owners on a regular basis.

The solution to the causes of less dense tempeh fermentation due to the fact that the fermentation room is too open is that you should use a rack as a container or place during the tempeh fermentation process, and place it in a room with rather dark conditions or not exposed to direct sunlight. The purpose of adding the rack is so that during the tempeh fermentation process it is not directly exposed to sunlight and if the weather changes are too extreme it will be easier to handle such as placing a cloth on the rack and not directly touching the tempe so that it does not affect the oxygen and moisture needed when cooking. tempeh fermentation. Another suggestion given is to provide a temperature and humidity control thermostat or a temperature control device at the fermentation site so that the temperature during tempeh fermentation becomes stable and produces good tempeh.

A hot room during the day can make workers uncomfortable and tend to make mistakes. Suggestions for the problem of an overheated production room is to add a fan to the production workspace so that it can help reduce the heat of the room when workers are carrying out the production process, especially in the frying section. . Another suggestion given was to change working hours from 9am to 7am so workers can finish work before noon. Another suggestion given is to change the layout of the frying pan so that it does not face the wall so that the heat from the frying process becomes circulated by the wind.

Forgetting to clean the knife on the chopper causes the chopping results to be not the same thickness, the suggestion for improvement for this type of defect is to provide an SOP for using the chopper, an SOP can be defined as a document that describes operational activities carried out daily, with the aim that the work is carried out efficiently. correctly, precisely and consistently, to produce products according to predetermined standards" (Tathagati, 2014).

Control

After preparing an improvement plan at the improve stage using FMEA analysis, then at the control stage to maintain an increase in the six sigma level of the process, the expected control measures can prevent the same problem from recurring. The steps that must be taken at the control stage include:

1. Carry out routine maintenance on the tools used in the manufacture of soybean chips.

2. Supervise raw materials by the production employees so that the quality of the goods produced is of high quality.
3. Supervise the tempeh fermentation process.
4. Recording and weighing defective products every day.
5. Total defective products in a one-month period are collected for evaluation by MSME owners.

With quality control, it is expected that all problems can be resolved immediately, and it is hoped that existing problems will not recur. The control concept given is basically in the form of work instructions or work instructions for the production process.

CONCLUSION

Based on the results obtained it can be concluded that

1. Types of product defects that occur in the production of Ragile UMKM soybean chips include defects that are not full round, double defects and thick defects. The highest defects occur in the size of defects that are not full circle with a defect percentage of 90.38%. This UMKM has a sigma value of 2.7 or it can be said that it is included in the category of the standard level of the Indonesian industry average.
2. The solution to the factors that cause product defects caused by the fermentation place is to provide shelves so they are not exposed to direct sunlight, the hot room environmental factor is to provide a fan in the production room, and the factor of workers who are negligent in cleaning the chopping machine is by make SOP on the use of chopper machine.

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