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An Islamic Perspective on Tofu Industry at Kanoman, Gagaksipat, Ngemplak, Boyolali

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Abstract

Producing tofu at Kanoman uses the same process from soaking soybeans to molding tofu, the only ingredients used are soybean seeds and vinegar or water as a seasoning. The tools used in processing the average for production use selepan which is driven by a motor for the soybean milling process. The purpose of this study was to determine the principles of Islamic production for tofu making at the hamlet. This research is a field research that focuses on tofu production. With data obtained from interviews and observations. The results of data analysis indicate that there is one production that does not meet production standards and the disposal of tofu production waste is dumped into the river because the producer does not consider the surrounding environment as a place that must be protected.

Keywords: *food processing, production standard, process standard*

INTRODUCTION

Production activity is an activity that can create use for form, place and time in meeting human needs. Production is also an activity of converting resources into products or the process of converting inputs into outputs (Setiadi, 2008). So that production activities are activities that produce a useful product to meet human needs. In Islam, production activities are an attempt to exploit resources in order to produce economic benefits or an activity that ensures the realization of individual and community benefits (Effendi, 2003). Where production in Islam has the same activities as production in general, but production in Islam places more emphasis on Islamic teachings to produce products that can bring benefits to society. Carrying out a production process in Islam there are principles that must be considered, (Machmud, 2017) which principles are useful for directing production actors or producers in carrying out production in accordance with rules or guidelines so as not to cause harm or impact to the surrounding community.

There are so many types of production that are currently developing, thus giving birth to many business actors or producers to create a business that is felt to be profitable. Production activities are one of the most important aspects of economic activity (M & Mandala, 2008). It is not wrong if a country's economy increases because of the many types of production that develop. One of the productions that is increasing at this time is production that processes food, the large variety of processed food production makes human needs fulfilled.

The existence of tofu businesses for now can be found anywhere, even in every region there must be businesses that produce tofu. Tofu is a preparation made from the main ingredient of soybeans by means of a milling process, which is a food that is in great demand by all people. Kanoman, Gagaksipat Village, is a tofu business area which is well-known as a

tofu production warehouse, this is where local residents make tofu production which has been going on for generations. Initially there were 29 tofu business owners there but now there are 28 tofu business owners, there is one business that is not operating. Business owners know that some of their businesses are managed in a family manner, some are managed individually (Pramoko, 2021).

The tofu production requires soybean seeds as the main ingredient, besides the main ingredients used by the founders, the founders also use water with vinegar or vinegar which is useful as a seasoning in the production of tofu. The number of workers involved in tofu production depends on the tools available in the production. Where the tools used in the production of tofu use a *selepan* machine driven by a motor, a boiling tube or container and a container for starch, buckets, tofu molds, tank, long sticks for rulers, and knives. The tofu business, which is located in Kanoman, where the production process is located near the tofu business owner's house, is close to the residents' residences.

The researcher chose to conduct research in the area because the researcher has the assumption that there are problems in the production including the production process that does not meet the standards in the process of making tofu, where in the milling process what should be ground until smooth but there are mill results which is still rough. Also, in the cooking or boiling process of soybean seed porridge, you have to wait 10-15 minutes or three times to boil, but some have only boiled twice, the filtering process has been carried out. It is possible to happen tofu which tastes sour quickly, because the process is not appropriate. In addition, the second assumption is that in the production process there are residues or waste, liquid waste from tofu production is disposed of carelessly into rivers, causing water pollution.

In Islamic law there are production principles that are in accordance with Islamic teachings, including being prohibited from producing and trading commodities that are reprehensible because they are contrary to sharia (*haram*), prohibited from carrying out production activities that lead to injustice, all forms of hoarding (*ikhtikar*) of goods. goods for the community and protect the environment (Effendi, 2003). From the production principles in Islam, the researcher will conduct a review of the tofu production process that does not meet the standards and the process of disposing of tofu production waste that causes pollution.

METHOD

The type of research used is field research. Field research aims to study intensively the background of the current situation, and the environmental interactions of a social unit of course are what they are, individuals, groups, institutions or communities (Suryabrat, 1998). By using an approach in the form of descriptive field research. In this descriptive approach, usually the research report will contain data excerpts to provide an overview of its presentation. The data comes from interview scripts, field notes, photos, personal documents, official documents and so on (Arikunto, 2006).

Data Source

The source of the data in the study is the subject from which the data can be obtained (Arikunto, 2006). To make it easier to classify data sources, the researcher classify the data into two sources, namely primary data and secondary data. Primary data is a source of direct research on the subject or process that occurs in the field as a source of information under study (Sugiyono, 2018). The primary data sources in this study were the founders of tofu production, which amounted to 8 of the 28 founders of tofu production and 5 surrounding communities residing in Kanoman, Gagaksipat Village. Meanwhile, secondary data is a source that becomes supporting data from a number of writings, journals, proposals, theses and other

sources that are used to strengthen the results of the analysis that come from print and internet media (Sugiyono, 2004). Researchers use this data source as supporting data related to tofu production.

Research Location and Time

The place of research taken by the researcher is in a tofu production area. There the researchers conducted research on the production of tofu, in order to obtain a solution to the problem the research was taking place. In this study, the researchers took the location in Kanoman, Gagaksipat Village, Ngemplak District, Boyolali Regency. Meanwhile, the time of the research begins in early February until April 2021.

Data Collecting Technique

Data collection techniques used in this study using interviews, observation and documentation. Interviews were conducted by obtaining oral and conversational statements, using purposive sampling technique. Purposive sampling is a sampling technique of data sources with certain considerations (Sugiyono, 2014). This purposive sampling technique takes a sample of 8 founders of tofu production with the criteria of using soybean seeds as much as 3-5 quintals of soybean seeds. Observation is done by using non-participant observation, where the observer is not actively involved in the observed situation (Prasetyaningrum, 2018). As well as data collection that the researcher did in the form of documentation in the form of photos with the founder of tofu production, the process of making tofu and the state of the surrounding environment.

Analysis

A technique that describes or summarizes data using descriptive analysis. Where the researcher uses data analysis which consists of three flow of activities that occur simultaneously, namely data reduction, data presentation and conclusions or verification (Miles & Huberman, 1992). The results of the analysis will use a qualitative descriptive type using deductive thinking patterns, namely comparing theory with events obtained from the field. This method is used with the aim of objectively describing the tofu production business that is related to the process of making tofu and managing production waste in terms of production principles in Islam.

RESULTS AND DISCUSSION

Processed food production undergoes a processing process, both those that have undergone processing and those that have not undergone processing. Where the processed food production process in it is carried out from the initial processing (cleaning, grinding) and final (cooking, packaging) (Rustanti, 2015).

In principle, the production process of tofu is to extract soy protein with water and coagulate it with certain acids or salts. Broadly speaking, the manufacture of tofu consists of two stages, namely the preparation (making of soy milk) and the stage of coagulation (clotting) of soy milk to form tofu. (Indrasti & Fauzi, 2009). The raw materials used in the production of tofu are soybeans, water, acetic acid or vinegar. While the tools needed include a bucket, a tank, a soft cloth, a wooden stirrer, a mold made of wooden boards (Salim, 2012).

Several factors that affect the protein immersion and the quality of tofu are milling or extraction methods, selection of raw materials, coagulation materials and the general sanitary conditions of the processing process. (Purwaningsih, 2007). The quality of tofu is influenced by several processing processes, if a product is not in accordance with the proper process, it will affect the results of the tofu.

Tofu production in the area is carried out from generation to generation. A production has a purpose, which is specifically the production to increase the benefit (Machmud, 2017). Where the production of tofu has a goal to increase economic factors and to create jobs for the surrounding community who need work.

Production Factors

The production process will involve various production factors that are needed, because production factors are important in a production implementation that affects processed products. The factors of production that must exist are as follows (Effendi, 2003):

1. Human Resources

Labour is directly related to the demand for property rights through production, because the quality and quantity of production is largely determined by labour. In the production of tofu, the required workforce is about 3 to 6 people depending on the number of boiling places, because the boiling place or boiling container must wait for one person to carry out the boiling until it reaches the screening stage. The workforce in tofu production usually employs their own families, but there are also those who employ their own neighbours with expertise in tofu production. There are even workers who have just graduated from high school and work directly on tofu production.

2. Capital

Capital is directly involved with the production process, because there are two types of capital in the production process, namely the means of production and payment of labour salaries. The tools used in the production include a *selepan* machine driven by a dynamo for grinding soybean seeds, buckets, tanks, boiling tubes or containers and starch containers, wooden molded boards, long sticks that serve as rulers. and knife. In addition, other capital is the payment of employee salaries, all tofu production is paid for employees' salaries with a piecework system which is calculated from the number of cooks.

3. Management

Management can be interpreted as a strategy to investigate the time used by *labour*, or in the sense of a production factor of a production there must be a leader in running a business. Where in every tofu production, the operation has one owner who supervises the production process carried out by its employees, but there are also tofu production owners who are directly involved in tofu processing. Time management used starting at 07.00-16.00 WIB.

4. Technology

Technology in production factors is not defined as a tool but a way to utilize nature or its relation to the selection of locations or areas of production activities. The results of observations show that the choice of tofu production location most of the founders chose the location of production close to their own homes. The production area is square, where each sub-area has 4 to 5 tofu productions.

5. Materials

Materials or raw materials are another very important factor for the production process, especially the production of physical goods or materials used in a production. A tofu producer in its processing only requires raw materials in the form of soybean seeds as the main ingredient, soybean seeds that are needed are around 3-5 quintals. In addition to soybean seeds, other ingredients used are vinegar water or sour water as a seasoning for processed tofu, as well as clean water.

Tofu Production Process

After the production factors are met, a production activity can run smoothly. Food production converts resources into commodities from start to finish (Rustanti, 2015). In the production of tofu, Kanoman produces tofu from the process of soaking soybeans to the tofu printing stage. There are stages in making tofu, which are as follows (Indrasti & Fauzi, 2009):

1. Washing, washing is done by washing soybean seeds with water until clean. Tofu production initially washes soybean seeds with clean water.
2. Soaking, the soaking process is carried out by taking about 3 hours and adding 300 liters of water, at the end of soaking the soybeans are also cleaned of sand, twigs, leaves, skin, and others. Most of the tofu producers do their soaking differently, some soak for 3 hours and some even soak soybeans for up to 4 hours.
3. Milling, in the milling process added water which is carried out continuously to facilitate the grinding process. At the milling stage, the tofu production is used to grind soybean seeds into porridge using a tool in the form of a *selepan* which is moved by a dynamo. There is a production of tofu whose *selepan* machine is not good, so the results of the grinding are still rough and not smooth.
4. Cooking, the soybean porridge is then put into a cooking tank or container and clean water is added within 10-15 minutes or the boiling is carried out until it boils 3 times. From this cooking stage, in tofu production, there is a production that cooks or boils soybean porridge, there is no time limit for boiling, if it has boiled twice, then proceed to the next stage. But there is also a production that in the boiling process, give it 10 minutes to boil 3 times.
5. Filtering, then carried out by filtering the soybean slurry with a white *blancu* cloth, in filtering soy milk is obtained. After the boiling process has been carried out, the next stage is filtering, filtering is carried out by producer using white *blancu* cloth tied above and then filtering by shaking or sifting to get the starch essence.
6. Clumping, the protein in soy milk is further precipitated by adding coagulant or sour water. The starch that falls into the container is given sour water as a seasoning, all tofu production uses the sour water for seasoning in tofu processing.
7. Printing, pressing and cutting. The lumps formed are put into a mold that has been lined with white *blancu* cloth, then pressed to form a printed tofu. After knowing it was the last stage of cutting. For the printing process, all of tofu production uses a square-shaped printed board in which each mold has its own size made of wood. As for cutting tofu, it is still simple to use long wood as a ruler and sliced with a knife.

In the tofu production process, there is a residue or waste generated. In this process, various wastes are generated depending on the type of nuts, processing techniques, management, factory location, water use (Indrasti & Fauzi, 2009). The tofu production process produces a residue or tofu production waste, where the resulting waste contains solid waste and liquid waste. Solid waste is used for making *tempe gembus* and for animal feeds such as cattle, goats, pigs. Meanwhile, there is also liquid waste that is disposed of carelessly. Directly dumped into the river so that the disposal of the liquid waste causes pollution.

Based on the explanation above, it is known that the factors of production are very important in carrying out the production process. If no one of the factors is met then production activities cannot run. All production factors are applied in the production of tofu in Kanoman, such as labour, capital, management, technology and materials or raw materials. These production factors are the preparatory stage in carrying out production activities, so that production can be carried out when all production factors are ready. Meanwhile, in the production process using steps that are in accordance with the process of making tofu.

However, from the steps of making tofu, there is a production of Kanoman tofu that does not meet the standards for making tofu. At the milling stage, there is a production that results from the grinding process of rough soybeans, it should be ground until smooth but the results from the grinding are rough so that it can affect the quality of the tofu. Also, in the boiling stage, which should boil for 10-15 minutes or until it boils 3 times, there are three productions that are not up to standard. In the production of tofu, Mr. Agus PM and Mrs. Darsini, who only boil 2 times, there is no time limit, and the production of tofu, Mr. Ekoyulianto, which only boils for 8 minutes. Lack of meeting the standard of the tofu-making process so that it can lead to sour and not durable tofu results.

The tofu production process produces residue or waste, be it solid waste or liquid waste. Tofu production in Kanoman, there are still a number of tofu production founders who dispose of liquid waste into the river, in the production of tofu belonging to Mr. Edi Agus, Mr. Agus PM, Mrs. Darsini and Mr. Ekoyulianto. This careless disposal of waste causes the water in the river to be not clear, because the river water has been polluted by liquid waste from tofu production and gives an unpleasant aroma to the surrounding environment.

Whereas overall the production of tofu in Kanoman is a type of production that can be done, because the production activities are carried out in a halal environment and the production of tofu in Kanoman provides benefits, such as creating jobs for the neighbors. In addition, related to Islamic values applied to production activities, it is appropriate to do tofu production in Kanoman.

Islamic Principles of Food Production

In carrying out the production process there are principles that must be considered in running a business. If the principles are not met, then the production cannot run smoothly, the principles of the production process include (Effendi, 2003):

1. It is forbidden to produce and trade commodities that are reprehensible because they are contrary to sharia (*haram*).

In the Islamic economic system not, all goods can be produced or consumed. In the production, the production is not prohibited, because the processed goods are side dishes that contain healthy nutrients and protein for the body. The main ingredients used are soybean seeds, with a natural process which still uses *gerajen* fuel or sawdust which is useful for generating steam when boiling soybean porridge in the management of the tofu. This evaporation process is carried out so that the finished tofu will not have a strong smell. So that the production of this tofu does not conflict with the Sharia.

2. It is forbidden to carry out production activities that lead to injustice, such as usury where injustice becomes the legal *illat* for the prohibition of usury.

Tofu production activities are carried out with the same steps, but there are productions that do not meet the proper tofu production process standards. Related to the grinding and boiling process. There are productions that do milling with the results of tofu that are coarse not smooth and in the standard of making tofu that the boiling process is carried out for 10-15 minutes or up to 3 times boiling. However, there is a production that only boils soybean porridge, there is no time limit and only boils it 2 times, then proceeds to the next step. This makes the quality of the tofu different, resulting in a sour and not durable tofu. So that according to this principle there is an injustice carried out by tofu production in not meeting tofu-making standards.

3. All forms of hoarding (*Ikhtikar*) of goods needed by the community are prohibited as sharia protection for consumers from the community

Hoarding is a prohibited act. Tofu production carries out a production process every day, because processed tofu cannot be stored for too long. If stored too long will reduce the taste of the tofu. The producers provide soybean seeds in large quantities because the tofu is processed every day so that the tofu that will be taken remains fresh every day so as not to disappoint customers. From these data, there is no form of hoarding of tofu production in Kanoman, Gagaksipat Village, Ngemplak District, Boyolali Regency.

4. Protecting the environment

Maintaining the environment in production activities is very important for the sustainability of a business. But in the production of tofu in the area, the environment does not take care of the environment. This occurs in the disposal of the produced liquid waste which is directly discharged into the river. From the disposal of waste that is carried out by being discharged into the river so that the river water becomes cloudy or turns cloudy, because it has been mixed with the liquid waste of tofu production. Meanwhile, air pollution from waste disposal gives an unpleasant aroma when in the area, especially downstream from the tofu production.

As has been explained above, in the production of tofu in the area, after researchers conducted interviews and observations, it was found that the behavior of tofu production in Kanoman in carrying out the production process contained a production principle that led to injustice related to not meeting the standards in the process of making tofu and the principle of not maintaining environment related to the disposal of liquid waste from tofu production.

Where in the production of tofu should use standard steps so as not to reduce the results of the tofu. However, what happened in the field was that there were productions belonging to Mr. Agus PM, Mrs. Darsini and Mr. Ekoyulianto that did not meet the standards in the process of making tofu. This can be seen from the stage of grinding soybeans, where the results are still rough and at the stage of boiling soybean porridge, which is standardized to boil for 10-15 minutes or until it boils three times. But in fact, the production does not boil with a predetermined time and only boils 2 times directly to the next stage. From this inadequate process, the quality of the tofu is not good enough so that the tofu will taste sour and will not last long.

Besides, there are also products from production related to liquid waste. Liquid waste from tofu production, which business actors should not throw away indiscriminately, but in the case of tofu production in Kanoman, the disposal of liquid waste from tofu production is carried out indiscriminately by the flow of rivers carried out in the production of tofu Mr. Edi Agus, Mr. Agus PM, Mrs. Darsini and Mr. Ekoyulianto. Although there are also productions that have disposed of into biogas, not all of the production has disposed of into biogas. So that indiscriminate disposal of the flow of the river causes pollution, such as giving an unpleasant aroma to the area and the water in the river becomes cloudy and not clear.

CONCLUSION

Regarding the review of the production principles in Islam towards the manufacture of tofu starting from the production process to the stage of disposal of tofu production waste which is formulated and in accordance with the objectives of this study. Tofu production in Kanoman, Gagaksipat Village, Ngemplak District, Boyolali Regency, overall the tofu production is hereditary and there are even those who build it independently, not hereditary. It can be stated that the production is in accordance with the production factors, which include labor, capital, management, technology and materials or raw materials. Regarding the steps of making tofu, they are carried out sequentially and with tofu-making standards. However, there is a production of tofu that does not meet the standards for making tofu. So that the

quality of the tofu tastes sour and does not last long. And the tofu production process contains residual or liquid waste, where the liquid waste produced is still littering the river, causing pollution.

Through the analysis described in the previous chapter, it can be seen that the production process of tofu at the area based on a review of production principles in Islam is appropriate. However, there are two principles that are incompatible with tofu production. Regarding the principle that it is forbidden to carry out production activities that lead to injustice regarding the lack of compliance with the standard of the tofu-making process and the principle of maintaining the surrounding environment related to the disposal of tofu production liquid waste which is carried out indiscriminately by river flows.

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