

## IDENTIFY THE RISKS OF HONEY PRODUCTION IN CV. HONEY APIARI MUTIARA DEPOK- WEST JAVA

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### Abstract

Madu Apiari is pure honey that has been specific, depending on where the bees are grazed. The distribution is always supervised by IPB LPPM, IPB *Bee Experts*, and the Head of the Pest or Forest Entomology Laboratory, Faculty of Forestry, Bogor Agricultural University. In carrying out its business, the company risks any honey production process. This study aims to identify, measure, and map priorities, and risk mitigation strategies. In data research using observation and interview methods as well as data analysis methods used in experimental work, in this case, are *Fishbone* Diagrams, *House of Risk* (HOR) stage 1, Pareto Diagrams, and *House of Risk* (HOR) stage 2. The results of the study are known to be in the honey production process in CV. Madu Apiari Mutiara, there are 15 risk events or *Risk Events* (Ei). Then based on the mapping, 17 risks are priority risks. In terms of the causes of risk priority, 10 risk mitigation strategies will be determined.

**Keywords:** *Risk, Pareto Diagram; HOR; Fishbone; Honey.*

### INTRODUCTION

Farmers' honey production in Indonesia has only reached 5,000 tons per year, while the need for honey needed reaches 7,500 tons per year assuming a per capita consumption of 30 gr or a year (Ministry of Forestry, 2014). The most widely produced non-timber forest products in Java Island in 2015 after bamboo, namely honey, were produced in the amount of 664,581.75 liters. Honey produced especially in West Java in 2015 has the second order after bamboo, which amounted to 3,212.74 liters (BPS, 2015).

As for the consumer market, along with the increasing awareness of healthy living, the volume of market demand is increasing although not significant and limited among the upper middle class. One of the outlets selling honey and production in the West Java area is CV. Pearl Apiary Honey. CV. Madu Apiari Mutiara is one of the companies located in the West Java area, has its apiary, and regularly harvests bees from various flower gardens to get various variations of honey. The honey goes through a process to reduce moisture content so that good quality honey is obtained, and the packaging process and delivery are carried out hygienically and efficiently for customer satisfaction. At the beginning of the CV production process. Madu Apiari Mutiara does its honeybee livestock to meet its production needs, but the amount of honey production produced cannot meet production needs, so the company collaborates with several suppliers. The honey

supplier comes from a partner of honey beekeepers in Subang and Pati or takes forest honey in Sumatra (Riau, Jambi, Palembang, and Padang), in a day the company can produce 1000-1500 bottles of honey with several variants. CV. Madu Apiari Mutiara must pay attention to production management properly so that quality and quality remain guaranteed because it is related to customer satisfaction.

Based on data on the amount of honey production in 2015-2019, it can be seen the difference between the company's target and the conditions produced in CV. Pearl Apiary Honey. The difference is due to CV marketing. Apiari Mutiara Honey is not good, in addition to product marketing, there is a more important problem, namely the quality of honey in crystals which results in a decrease in the amount of demand from consumers and parties who have worked together. On the decrease in honey moisture content, packaging honey bottles, etc. This risk of honey production can reduce the company's profits, increase the cost of variables, and even cause losses. Based on the table damage to honey products every month has increased. This results in handling production risks must be carried out optimally so as not to hinder the achievement of company goals. Production risks can be mitigated by identifying and analyzing production risks. Product failure si dapat dikurangi atau diperkecil dengan mengetahui sumber dan penyebab risiko pada saat proses honey production, from the reception of raw materials to *shrinking*. Based on the explanation above, it is very relevant if research is carried out with the title "Identification of Honey Production Risks in CV. Madu Apiari Mutiara, Depok, West Java. "

Based on the background explanation above, the formulation of the problems that can be determined in this study is as follows (2) What are the risks identified in the honey production process, and calculate how much risk occurs in each honey production process in CV. Pearl Apiary Honey? (2) How is production risk mapping, and what are the appropriate strategies to avoid risk?

## RESEARCH METHODS

### Data Types and Sources

The data sources in this study use primary data and secondary data in the form of qualitative and quantitative data. The primary data used were obtained from observations and systematic interview techniques. The company is in Jalan Putri Tunggal Complex. Casa Corozza Number 102 Harjamukti Village, Cimanggis Depok District, 1654 West Java. The study was conducted from March- April 2018. The questionnaire used in this study consisted of a risk identification questionnaire and a risk impact assessment using the House of Risk (HOR) method. The data was processed using the help of Microsoft Excel 2010.

### Data Analysis and Data Processing Methods

The *House Of Risk* (HOR) phase 1 method is used to determine the potential value of the overall risk or *Aggregate Risk Potential* (ARP<sub>j</sub>). Data on the opportunity of the cause of risk (*occurrence*) and the level of impact of the risk event (*severity*) along with correlation data between the two been obtained from the questionnaire. After obtaining the ARP<sub>j</sub> value of each risk cause (A<sub>j</sub>), a priority calculation of the influence of the risk cause will be carried out using the second analysis tool, namely the Pareto diagram with a ratio of 80: 20. So that it is known the causes of risk that have great value for the company to determine the risk

prevention strategy that occurs in each process.

After knowing the causes of the risks that most affect the honey production process in cv. Madu Apiari Mutiara formulated a risk prevention strategy with the speakers. The third analytical tool used by this study is *the House Of Risk (HOR) phase*

2. Once a risk agent is found to be the problem with the Pareto diagram, it can be continued into Table HOR phase 2.

## RESULTS AND DISCUSSION

On the flow of the honey production process in CV. Apiari Mutiara Honey includes the identification of risk events and identification of risk causes that occur from the process of receiving raw materials and weighing. At the base of the fishbone body from the fishbone diagram, there is a variable in the study, namely the honey production process in cv. Madu Apiari Mutiara consists of the process of receiving raw materials, weighing 1, filtering, reducing moisture content, filling, weighing 2, installing stickers, and sealing. Then in the part of each bone, some activities are part of the corn vermicelli production process which are used as sub-variables wherein each of these activities there is a critical point that is the cause or risk agent of honey production.

The measurement of tofu supply chain risk is carried out on measurements to determine the degree of impact of risk events or *severity* ( $S_i$ ), the degree of probability of causing risk or *occurrence* ( $O_j$ ), the degree of correlation between the causes of risk and risk events and accumulating them with the calculation of *aggregate risk potential* (ARP) of existing risk causes using the HOR table phase 1. HOR table *phase 1* is made on each of the sections. This is done because each part has possible risks and causes, although each part is interrelated. At this stage, an assessment of the relationship between risk events and risk causes is carried out. If a cause of risk causes a risk to arise, it is said that there is a correlation. This correlation value also has weight, that is, the larger the scale obtained, the greater the correlation between the cause of risk and the risk event. The scale used is a value of 9 (when the correlation is strong), a value of 3 (when the correlation is moderate), a value of 1 (when the correlation is low), and a value of 0 (when there is no correlation). By knowing the degree of correlation between the level of impact of risk and the cause of risk, the risk map is known. The priority risk is taken based on the cumulative percentage of ARP in the Pareto diagram when there are 80% of the risk agents the cause of the risk event. The results of the calculation of the level of risk impact and the level of probability of risk are then entered into the HOR Table *phase 1*, as follows.

### 1. Risk Mapping.

After the results of the calculation of the *Aggregate Risk Potential* (ARP) value are known, risk mapping can be carried out using a Pareto diagram to determine the risk agent or cause of risk that must be prioritized for preventive action. The comparison used in the Pareto diagram in this study is 80:20 where less than or equal to 80% of risk agents cause risk events that will have an impact or influence on the company's business continuity, then risk causes that have a percentage less than or equal to 80% are prioritized for risk handling.

### 2. Determination of Risk Handling Strategies

Based on the mapping results, the priority of the risk causes has been

determined. From the causes of these risks, a risk management strategy will be determined to eliminate and or reduce the emergence of these risk causes. The following are the strategies proposed by several respondents in this study:

- 1) Supervise and check the recorder every day.
- 2) Conducting training and motivating to production employees.
- 3) Using stainless tools every production.
- 4) Regulate the room temperature at every start of working hours for employees.
- 5) Perform stirring using a *mixer machine*.
- 6) The moisture content is lowered based on the standard 20°C-18°C.
- 7) Sanitation on the means of production should be applied.
- 8) Preventive periodic maintenance.
- 9) Renew WI (*Work Instruction*).
- 10) Hold an evaluation meeting on employee performance in the harvesting process.

## CONCLUSIONS AND SUGGESTIONS

Based on the results of data processing and analysis that have been carried out to answer the problem formulation, the conclusions obtained are as follows: In the process of honey production in CV. Madu Apiari Mutiara identified 15 risk events or *Risk Events* (Ei) and 26 risk causes or *Risk Agents* (AJ). The results of risk measurement in the honey production process, are indicated by the ARP value. The assessment of the highest ARP results in the process of receiving raw materials must be prioritized to be given a preventive strategy, namely the operator does not carry out water content checks with a value of 1,896. The assessment of the highest ARP results in the weighing process 1 must be prioritized to be given a preventive strategy, namely the weight of the raw material does not match the value of 502.2. The highest ARP assessment in the filtration process must be prioritized to be given a preventive strategy, namely not conducting a water content reduction check with a value of 166.32. The highest ARP assessment in the process of reducing water content must be prioritized to be given a prevention strategy, namely the water content is not by the SOP with a value of 12.42. The highest ARP assessment on *the filling* process must be prioritized to be given a preventive strategy, namely stirring not using a machine with a value of 190.08. The highest ARP assessment in the weighing process 2 that must be prioritized to be given a strategy, i.e., the weight does not match the net weight specified with a value of 32.4. The highest ARP assessment in the labeling process must be prioritized to be given a strategy, namely that the operator did not re-examine with a value of 128.52. The highest ARP assessment on the sealing process that must be prioritized to be given a strategy, namely too thin plastic with a value of 64.00. Based on the results of risk mapping in the honey production process in CV. Madu Apiari Mutiara, there are a total of 17 risk causes that are a priority for handling risks.

Based on Pareto mapping, which is a priority for risk management, 10 preventive risk prevention strategies were obtained. The strategies used are to supervise and check the recorder every day, conduct training and provide motivation to production employees, use *stainless* tools every production, regulate room temperature every start of employee working hours, make complaints using *a mixer machine*, Water content is lowered based on national and international standards 20°C-18°C, sanitation in production equipment must be applied, preventive *maintenance* is periodic, updating WI (*Work Instruction*), and holding evaluation meetings on employee performance.

Based on the results of research that has been carried out, advice can be given to companies so that production risks can be optimally controlled. Carry out to increase the

capacity (*building capacity*) of human resources periodically, both in technical, managerial, and mental attitude aspects, through the addition of knowledge and training. Carryout supervision and inspection on recording every day, conduct training and provide motivation to production employees, sterilization of tools and materials according to SOP in every production carried out.

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