

Mey Wulandari. 125100301111028. Supply Chain Risk Assessment of Apple Taffy Using Fuzzy Failure Mode and Effect Analysis (A Case Study in KSU Brosem, Batu). TA. Supervisor : Dr. Siti Asmaul Mustaniroh., STP., MP., and Dr. Ir. Imam Santoso, MP.

SUMMARY

Malang has a lot of apple production, especially in Batu and Poncokusumo. Therefore, it should be developed to provide an extra value for the apple using a sophisticated processing technology. The apple can be processed into apple juice and also snacks such as chips, pia, and taffy. One of the apple taffy industry in Batu is KSU Brosem. KSU Brosem has a production capacity to processing the apple about 80 pack of apple taffy within a month. Unfortunately, at KSU Brosem the risk management has not been well-identified, so there are some problems, which are the inconsistency of apple supply quality, delayed production schedule, and inconsistency of apple taffy production in each month. The apple taffy supply chain is needed to be applied with a proper risk management to minimizing or eliminating the causes and risks of supply chain. Proper treatment for apples taffy risk management is identifying, measuring and assessing the supply chain risk at KSU Brosem. The results of the risk assessment can be used to determine a supply chain risk minimization strategies.

This study aim is to identify, to measure and assessing the supply chain risks and determining strategy alternatives to minimize the risks of supply chain of apple taffy at KSU Brosem. Methods for assessing the risk of supply chain is fuzzy Failure Mode and Effect Analysis (FMEA Fuzzy) and AHP (Analytical Hierarchy Process). Fuzzy FMEA method is used to perform a risk assessment on the KSU Brosem supply chain, while the AHP method is used to determine the alternative strategy of risk minimizing. The risk assessment in this study is considered from raw materials variables,

production variables, and product variables. Experts respondents that used are consisted of 2 farmers, 2 of the SMEs, 1 retailer, and one person academics.

Based on the results of the questionnaire potential risks at KSU Brosem are obtained. Risk on raw materials consist of a delays in the apples supply, fluctuating prices of apple, and the quality of the apples that do not meet the standards. Risks in production variables are the low amount of labor, production inconsistent apple taffy production capacity, machinery and equipment damages during the production process, apple taffy processing delays, and contamination of dust, hair or other out of place objects during the production. The risks in the variable product are shortage supply of apple taffy, similar competitors, product return claims from consumers, and fluctuating apple taffy's demand. From Fuzzy FMEA method, the highest risks is the delays in the apples supply, production delay schedule, and similar competitors. Potential risks need to be reduced by using minimization strategy, which are applying the human resources training, cooperation, production planning, information accessing and communication improvements.

Key Word : Apple Taffy, Minimization Strategy, Risk Assessment

