

UNIVERSITI TEKNOLOGI MARA

**HALALAN TOYYIBAN RISK
MANAGEMENT PLAN (HTRMP)
PRACTICES OF RICE (*ORYZA
SATIVA L.*) AT WAREHOUSE**

**NURUL FARAHAANIM BINTI
AHMAD RADZI**

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ABSTRACT

Halal food supply chain involve the process of managing the Halal food from farm to table, including storage at warehouse. There are some problems faced by warehouse provider where the rice stored might be contaminated by physical and biological contaminant. Majority of the warehouse providers refused to adopt Halal warehouse in their business operation as they are lacking HTRMP implementation in terms of food handling at which increasing the possibility of Halal food becoming non-halal because of physical or biological contamination. Therefore, this research aimed to identify the possible physical or biological contaminants with regards to handling of rice during storage, and also to establish the HTRMP element of monitoring that are required for rice during storage at warehouse based on Syariah compliance and toyyiban aspects. The method used in this research was divided into two which were qualitative (questionnaire and interview) and also quantitative (physical and biological analysis). There are three types of rice used in this study which were local rice, fragrant rice and Basmathi rice. From the result obtained through interview and questionnaire, several elements in HTRMP were taken into count including temperature of the warehouse, relative humidity, moisture content of rice, water activity of the rice, colour, hygiene, odour and foreign matters. For physical aspects biological spoilage which are yeast and mould. The physical analysis showed that, there were fluctuation in temperature of rice which ranging from 29.8⁰C to 32.3⁰C. While for moisture content, ranging from 10.7% to 12.9%. In addition, water activity showed the significance different by weeks and types of rice. There was a significance difference between weeks and types of rice in terms of rice. Foreign materials were found in the rice package. Hygiene analysis was analysed using swab test and there were several contaminations detected which can affect the halal and toyyiban status of rice. Lastly was the biological analysis, where yeast and mould were detected in the stored rice. However, it still within the acceptance level. The highest yeast and mould detected was on weeks 12 was 2.9CFU/g for Basmathi rice sample. If the warehouse house providers neglect the hygiene during handling, the rice might become non-Halal as it is unsafe for consumption. In conclusion, a complete HTRMP table has been developed for the future reference of rice warehouse providers.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Halal food industry in Malaysia is thriving in recent years. Vloreen et al., (2014) stated that consumer demand on halal food has also changed considerably. Halal products become more popular not only in Malaysia but become demanding by worldwide. The growth of Halal food industry in Malaysia increase in the year 2004 from USD 6.6 billion, to USD 9.4 billion in 2010, while in the world, the growth was 91.5% which were from USD 587.2 billion to USD 641.5 billion for the same year, 2004 to 2010 (Bahli, 2011). Earlier 2017, Malaysia's government announced that our country's halal industry is targeted to reach RM 50 billion in trade exports by 2020 with an increasing rate of 5% to 6% by the end of 2017 (The Malaysian Reserve, 2017)

Previous Halal Development Corporation (HDC) CEO, Datuk Seri Jamil Bidin said that government of Malaysia had involved in building a comprehensive ecosystem for our halal industry, and (which) has been one of our advantages at present. Some countries are only focusing on the production and not on building the infrastructure around them. Some are only focusing on the halal certificate. In Malaysia, we have an ecosystem that is thorough, backed by the government's incentives and the public-private partnerships. Besides that, all of these encouragements have led Malaysia to be the global reference centre for halal industry and we are being recognised by the Organisation of Islamic Cooperation countries (The Malaysian Reserve, 2017).

Malaysia has played a leading role in the development of halal standards with its MS 1500:2009, of which most of halal standards in the world today are based on (Tieman and Maznah, 2014). Halal is always moving and need to be transported along the supply chain, in 2010, Department of Standards Malaysia introduced the MS 2400:2010: "Halalan Toyyiban Assurance Pipeline Standard", which covers transportation, warehousing and retail. This standard, certified by JAKIM, is used for the certification of logistics operation in Malaysia (Tieman and Maznah, 2014).

The word "Halal" means permissible or lawful by Islamic laws. It refers to foods or products consumed by Muslim (JAKIM). According Ambali and Bakar (2014) the