UNIVERSITI TEKNOLOGI MARA

LAS VEGAN TECH

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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

The traditional reliance on meat for protein is facing challenges. Concerns about environmental impact, health risks, and ethical considerations from vegan, cruelty-free, and religious communities are driving a shift toward plant-based alternatives. However, existing plant-based meat options often come with drawbacks. Due to heavy processing, they frequently contain high levels of histamine-boosting additives, preservatives, flavorings, and even ingredients naturally high in histamine, limiting their suitability for some consumers. In recognition of this gap, our company, Las Vegan Tech is developing a unique low histamine plant-based meat product. Unlike its highly processed counterparts, our product will prioritize minimally processed ingredients and formulations that minimize histamine content. This focus ensures a more inclusive and potentially healthier option for those seeking plant-based protein sources.

Our product "Las Vegan" by Las Vegan Tech can be classified as improvements and revisions of existing products. While plant-based meat alternatives are already on the market, Las Vegan sets itself apart by prioritizing ingredients that cater specifically to those with allergies. This aligns perfectly with the current trend of consumers placing a greater emphasis on plant-based and alternative protein food due to health and environmental concerns. Las Vegan achieves this by utilizing a unique blend of safe, low histamine ingredients readily available in Malaysia, such as palm oil, rice flour, tapioca starch, and string beans. This focus on allergy-friendly plant ingredients, allows consumers to enjoy the delicious meat-like taste of Las Vegan without the risk of triggering allergic reactions. In essence, Las Vegan offers a healthier, more sustainable alternative to traditional meat by capitalizing on the growing demand for plant-based protein sources.

A survey was conducted by our team members which was done by using Google Form and distributed through WhatsApp and chats among our family, friends, and other possible consumers. We launched this survey to explore or gather insights into consumer knowledge and familiarity with both plant-based meat options and the potential impact of histamine content. From the data collected, we can see that there were 58.7% of respondents have knowledge about plant-based meat while 56.5% of respondent know about histamine. This means that with the rise of vegetarian and vegan diets, plant-based meat products have received a lot of attention in the media and grocery stores, while people may be familiar with histamine in the context of allergies. Besides, a strong majority which was 84.8% of respondents indicated that they expressed confidence that our product will be in high demand in Malaysia.

2.0 INTRODUCTION

The food industry has become so vastly developed that it would be unrecognizable to people from two generations ago. Scientific knowledge and technological developments are applied to food processing at an accelerating pace because every year, there are thousands of new food products and processes are being commercialized and developed (Fellows, 2022). Therefore, plant-based meat is also developed by food technology to fulfill the demand from consumers who are vegan, have religious beliefs, have allergic conditions, and cruelty-free community. Plant-based meat is also an alternative for the sustainability of food supply in the future because animal meat production is facing pressure specifically from the cruelty-free community and vegan people as they do not consume animal products for environmental, ethical, and health reasons. There are also consumers with religious beliefs that constrain them from eating animal meat. According to Sha et al. (2020), the increase in the meat alternatives market is driven by the force of negative impacts on health by consuming meat products, the environmental stress caused by animal breeding, and animal welfare. Thus, with the rapid development of food science and technology, plant-based meat has become possible to produce commercially.

Scientific researchers have discovered that processed meats, fermented drinks, and certain fruits and vegetables contain or trigger high histamine levels. Comas-Basté et al. (2020) stated that researchers who studied the functions of histamine were Dale and Laidlaw in 1910 and they described the effects of histamine on the body. This organic compound is synthesized and stored in mast cells, gastric cells, and other cells in the body in high concentration. Its function includes various immune and physiological mechanisms, inflammation, stimulation of gastric acid secretion, smooth muscle contraction, functions as neurotransmitters located in the brain, and many other processes. Therefore, this histamine is already abundance in the body because of its essential functions but exceeded concentration will affect people with allergies, skin diseases, migraines, gastrointestinal issues, and histamine intolerance because histamine will trigger an allergic reaction such as runny nose, skin rashes, diarrhea, headaches and many more. Histamine is presented naturally low in food but highly processed or fermented foods are usually containing high histamine. Other factors that contribute to high histamine in a product are using many preservatives for longer shelf life, ingredients that are naturally high in histamine or ingredients that can trigger white blood cells to produce histamine are used for food production.

Low-histamine plant-based meat is a result of food science and technology to produce a product that is low in histamine level that is suitable to consume for everyone, regardless of any allergies, skin diseases, migraines, gastrointestinal issues, or histamine intolerance conditions they may have. The product contains locally produced ingredients, such as rice flour, tapioca starch, string beans, and palm oil. These ingredients are naturally low in histamine and do not trigger the production of histamine in the body. In addition, only fresh string beans are used in the making of this product to maintain low histamine. Hence, this product will be low cost as all ingredients are available in Malaysia but full of nutrients such as protein, vitamin C, dietary fiber, vitamin E, sodium, and fat. The production of this product will require less processing from harvesting, handling, production, packaging, and storing as well as minimal preservatives used, to maintain a low histamine level in the final product.

2.1 Problem Statement/Issues

Meat is a source of protein on our daily basis. However, the meat market especially meat products has recently faced pressures when its production caused environmental stress and health issues for some consumers. There is also consumer that is vegan, cruelty-free community, and religious belief which all these factors lead to plant-based meat as an alternative to meat products. Besides, plant-based meat in the food industry is usually high in histamine levels because it is highly processed food, contains many food additives and preservatives for longer shelf life and flavorings as well as high histamine ingredients. This caused some difficulties in choosing meat alternatives for people who suffer from allergies, migraines, skin diseases, and histamine intolerance. Histamine in food will increase the concentration of histamine in the body, which causes allergic reactions, especially in allergic individuals. Other than that, plant-based meat is usually high cost to purchase and consume daily because the production of it in Malaysia is limited and many are imported which causes the price to be higher than animal meat. Therefore, Las Vegan Tech come up with improvise plant-based meat product that is not triggering allergic reactions, ready-to-cook, full of nutrients, delicious and affordable for everyone to purchase. With this, consumers can find better alternatives of meat products and reduce their histamine intake.