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Vegetarian Burger Innovation in The Vegetarian Food Trend

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ABSTRAK

Inovasi burger vegetarian menggambarkan perubahan paradigma dalam produksi dan konsumsi pangan, menyoroti titik temu antara keberlanjutan, teknologi, dan perubahan kebiasaan makan. Hal ini menggarisbawahi potensi alternatif nabati untuk tidak hanya hidup berdampingan dengan makanan tradisional tetapi juga membentuk kembali industri makanan global. Inovasi burger vegetarian berkontribusi dalam mengurangi dampak lingkungan dibandingkan dengan produksi daging tradisional. Mereka dapat membantu memerangi pemanasan global dengan menurunkan jumlah emisi gas rumah kaca, menghemat air, dan mengurangi penggundulan hutan.

ABSTRACT

The innovation of the vegetarian burger illustrates a paradigm shift in food manufacturing and food intake, highlighting the intersection of sustainability, technology, and changing dietary habits. It underscores the potential or chances for plant-based alternatives to not only coexist with traditional foods but also reshape the global food industry. Vegetarian burger innovations contribute to reducing environmental impacts compared to traditional meat production. They can play a vital role in combating global warming by lowering greenhouse gas emissions, conserving water, and reducing deforestation.

Keyword: ***traditional food, vegetarian burger, dietary habits, meat***

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1. BACKGROUND

The trend of vegetarian food is increasing along with global awareness about health, the environment and ethics in food consumption. People are turning to vegetarian diets for a variety of reasons, including reducing the risk of chronic disease, lowering their carbon footprint, and concern for animal rights. The following are some of the main points about the vegetarian food trend, supported by academics. Many studies show that the demand for plant-based food products continues to increase. Products such as plant-based meat, plant-based milk and egg alternatives are becoming increasingly popular. According to a study by He et al. (2021), this increase is driven by increasing public awareness about the health benefits of plant-based foods as well as the influence of celebrities and influencers on dietary choices.

Research shows that a vegetarian diet is associated with a reduced risk of heart disease, type 2 diabetes, and some types of cancer. The study by Tuso et al. (2013) concluded that a plant-based diet, which is high in fiber and antioxidants, plays a role in improving heart health and reducing inflammation. One of the main drivers for the adoption of vegetarian food is the environmental impact of the livestock industry. A vegetarian diet is considered more sustainable because it requires fewer natural resources such as water and land than meat production. A study by Poore and Nemecek (2018) found that plant-based diets have the greatest potential for reducing the global ecological footprint.

A survey by Szejda et al. (2020) shows that more consumers are trying to reduce meat consumption and replace it with vegetable protein. These changes are largely driven by health concerns and environmental awareness. Technological advances, such as the development of synthetic meat and protein from insects, have also had an impact on the vegetarianism trend. According to Wilks and Phillips (2017), although synthetic meat is gaining attention, consumer preference for plant-based products remains strong for natural and ethical reasons. Each type of vegetarian has different dietary principles and reasons, so it is important to understand what suits each individual's personal needs and values. These diet options can also have different health benefits and varying environmental impacts.

1.1 Veganism

Veganism is the most strict type of diet in which it eliminates all animal products and by-products such as meat, poultry, seafood, dairy, eggs, honey, gelatin, and other more products that come from animal

1.2 Ovo-Vegetarianism

Ovo-vegetarians eat eggs and food containing eggs but do not eat meat, poultry, seafood and dairy

1.3 Lacto-Vegetarianism

Lacto-vegetarians consume dairy products such as milk, cheese, and butter but do not consume meat, poultry, seafood, and eggs.

1.4 Pescetarianism

Pescetarianism consumes fish, seafood, dairy products, and eggs but avoids red meat and poultry

1.5 Flexitarianism

The flexitarian is considered the most flexible form of vegetarian because the diet consists of mostly plant foods but also includes meat and animal products

1.6 Research Problem

The relationship between vegetarianism and fast food has become closer in recent years. The fast-food industry, traditionally synonymous with

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meat-based products, has adapted to the increasing demand for vegetarian food options. Demand for plant-based fast food has increased rapidly, primarily due to consumers looking for healthier or environmentally friendly food options. People who are not full-fledged vegetarians also often choose vegetarian options, either for health reasons or simply as an alternative.

A survey by Mintel (2019) found that more than half of consumers in the United States are trying to reduce their meat consumption. This trend is known as flexitarians, which combines a plant-based diet with occasional meat consumption, and is a major driver for fast food restaurants to provide vegetarian menus. Despite increasing awareness of the importance of plant-based food options, vegetarians often face challenges in finding fast food that meets their needs. Many restaurants only offer one or two vegetarian options, which is often not enough to satisfy varying taste preferences or dietary needs. In a survey conducted by Mintel (2020), it was found that only around 30% of fast-food restaurants in the United States offer an adequate vegetarian menu.

Major fast-food restaurants such as Burger King, McDonald's, and KFC have introduced plant-based menus. Burger King, for example, introduced the Impossible Whopper, a burger that uses a patty from Impossible Foods, a company that develops plant-based meat that resembles animal meat. According to a report by Impossible Foods (2020), sales of the Impossible Whopper have succeeded in attracting the attention of non-vegetarian consumers who want to reduce meat consumption without sacrificing taste.

1.7 Objective

The aim of creating a vegetarian burger innovation is because vegetarian burgers are considered healthier because they contain less saturated fat and cholesterol than meat burgers, so they can support a healthier diet. In the culinary world, there is a push to create new and interesting products. Veggie burgers offer a variety of different flavors and textures than meat burgers, as well as the opportunity to experiment with plant-based ingredients.

Vegetarian burger innovation in the current era has very promising opportunities, especially with increasing public awareness of healthy and sustainable eating patterns. Some of the main factors driving the growth of this innovation include the global trend towards plant-based foods, environmental concerns, and an increase in the number of consumers choosing a flexitarian lifestyle—reducing animal meat consumption and switching to plant-based foods.

The opportunity is that consumer demand for healthy food alternatives is increasing rapidly, especially among the younger generation such as Gen Z and millennials. In Indonesia, for example, there has been an increase in healthy food consumption during the pandemic, with 62% of people buying fruit and vegetables more often. This shows that there is great potential for vegetarian products, including veggie burgers, to continue to grow in the market

1.8 Significance of the study

The significance of this study is to be able to create vegetarian hamburgers that do not use meat. Though this hamburger is to no avail to Buddhist vegetarians due to the presence of allium family vegetables which include onions, garlic, etc. The significant growth of vegetarianism boosts this paper to inspire more people to be able to create burgers that do not require meat from animals. Thus, creating a beneficial impact to the environment as well as to the animals.

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1.9 Scope and Limitations

Though the growth of vegetarianism has been proven by a significant growth throughout the years, such papers discussing the innovation of vegetarian burgers are limited. Despite the fact, most papers describe the comparison of minerals and nutritions that is in traditional burgers that are made of meat as their main source of protein and vegetarian or vegan burgers.

2. LITERATURE REVIEW

Research done by Boukid and Castellari (2021) mentions a nutritional challenge between vegetarian burger and meat burger. This paper also mentions the health concerns of meat burgers that may cause cancer such as colon cancer. Besides cancer, such health concerns include obesity and cardiovascular diseases. These concerns are mainly caused by high amounts of cholesterol, saturated fatty acids and also salt. Such a paper mentioned that the veggie market was clearly growing in 2020 in the European market describes that vegetarian burgers are a healthier option but with additional things to improve such as a product that can give more nutritional value with less sugars and more proteins which is also allergen-free.

3. METHODOLOGY

This paper uses articles and journals to conduct information needed such as the growth and recipes to make vegetarian burgers. In order to escort this vegetarian burger to success, such methods about the making of the vegetarian burger will be explained.

3.1 Burger Bun

1. Using a hook attachment, mix all dry and wet ingredients except for margarine
2. Mix until the dough becomes not sticky and gradually add cubed margarine
3. Cover and rest the dough for 20 minutes
4. After the dough rise, punch the air down and divide into 5g each. 5. Round and shape the dough and placed on a greased baking tray
6. Rest the rounded dough on the tray inside the proofer
7. Rest for 20 minutes until it doubles its size
8. Brush gently the surface of the dough with egg wash
9. Bake in the oven at 180º for 7 minutes until the bread is golden brown and serve

3. 2 Vegan Mayo

1. Combine soy milk, vinegar and lemon juice
2. Blend using hand blender and gradually pour oil
3. Blend until creamy
4. Season with sea salt

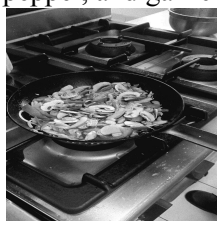
3.3 Vegetarian caramelized onion

1. Heat oil in a pan over medium heat.
2. Add the onions and sauté for 5 minutes until it starts to soften
3. Add salt and reduce the heat to medium low and cook for 50 minutes

4. Stir every few minutes or until the onions are very soft, golden brown and caramelized

3.4 Vegetarian burger patty

1. Cook quinoa with 1 cup of water
2. Sauté mushroom, onion, green bell pepper, and garlic with olive oil.



Picture 1.Sauteed mushroom

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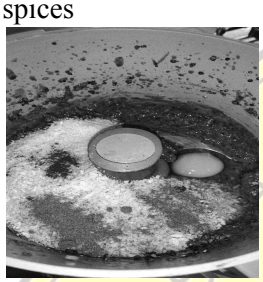
3. Blend the sauteed vegetables until smooth. Add black beans and cooked quinoa.

Picture 2. Blended vegetables.

4. Add panko bread crumbs, egg, and spices

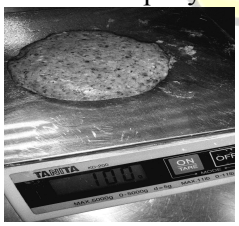


Picture 3. Patty mixture.

5. Cover and chill in the chiller for at least 30 minutes.

Picture 4. Chilled veggie patty.

6. Scale the patty at 100 grams each.



Picture 5. 100 grams of veggie patty

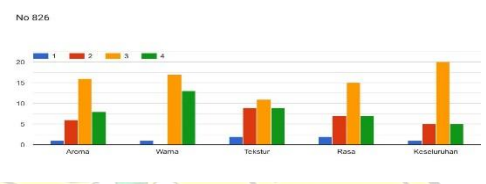
4. RESULT AND ANALYSIS

4.1 Nutritional Value

The nutritional value consist in one vegetarian burger with a mass of 270g consists nutrition as follows:

Menu	Vegetarian Burger								
Per serving 270 gram									
Serving 1 porsi									
Bahan	Jumlah	Unit	Calorie /100 g (kcal)	Total Calorie (kcal)	Gram of Protein /100 g	Total Protein	Gram of Lemak / 100 g	Total Lemak	Gram of Crb /100 g	Total Carb
Burger bun	150	g	120	180	17	25.5	14	21	24	36
Vegetarian patty	50	g	87.5	43.75	8	0.85	3	1.5	7	0.56
Vegan Mayo	20	g	18	3.6	0.2	0.04	15	3	0.12	0.00024
Romaine lettuce	50	g	8.5	4.25	1.2	0.6	0.3	0.15	3.3	0.0396
Total calorie per 1 serving				231.6		26.99		25.65		36.59884

4.2 Survey Result



In terms of aroma, 16 people like it, 8 of them really like it, 6 people don't like it and 1 person really doesn't like it.

In terms of color, 17 people like it, 13 of them really like it, and 1 person really doesn't like it.

In terms of texture, 11 people like it, 9 of them really like it, 9 people don't like it, and 2 people really don't like it.

In terms of taste, 15 people liked the taste, 7 of them really liked it, 7 people didn't like it, and 2 people really didn't like it.

Overall, 20 out of 31 people like the product, and 5 of them really like it and the remaining 6 people don't like it.

4.3 Controlled Survey Result

Produk	Mean Hasil Uji Kesukaan				
	Aroma	Warna	Tekstur	Rasa	Rata-rata
Vegetarian Patty dengan resep normal 213	3.00	3.37	2.87	2.87	3.03
Vegetarian Patty dengan 500 gram mushroom 341	3.17	3.37	2.93	3.27	3.18
Vegetarian Patty dengan 550 gram mushroom 451	3.37	3.53	3.50	3.07	3.37
Vegetarian Patty dengan 600 gram mushroom 584	3.23	3.47	3.37	3.13	3.30

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Such a test was done for another 3 different controlled variables. The controlled variables in this test is the amount of mushroom present in the experiment. The aim of this controlled experiment is to increase the score for texture and taste which both have one of the lowest scores on the first trial. Such results were found based on three different amounts of the mushroom. These results concluded that experiment 453 which consisted of 550 grams of mushroom tended to excel in its average scores, giving the best results among the other 3 different tests.

5. CONCLUSION

The innovation of the veggie burger illustrates a paradigm shift in food production and consumption, highlighting the intersection of sustainability, technology, and changing dietary habits. It underscores the potential for plant-based alternatives to not only coexist with traditional foods but also reshape the global food industry.

Veggie burger innovations contribute to reducing environmental impacts compared to traditional meat production. They can help combat climate change by lowering greenhouse gas emissions, conserving water, and reducing deforestation.

The rise of plant-based burgers reflects changing consumer demands for healthier, ethical, and eco-friendly food options. This trend indicates growing awareness of food's impact on personal health and the planet.

Breakthroughs in food technology, such as creating meat-like textures and flavors, have made plant-based burgers more appealing. Companies like Beyond Meat and Impossible Foods have set a precedent for blending science and culinary innovation.

The veggie burger market's rapid growth demonstrates its economic potential, challenging the dominance of the traditional meat industry. It also shows how innovation can disrupt established markets.

6. APPRECIATION

This research paper aims for the better of the future hoping for much more innovations and creativity for especially young generations. Through this, we would like to say our thanks for the time spent reading this research paper. Regardless of everything mentioned, we would like to apologize for any inconveniences and mistakes that are present in this research paper. We hope that this research paper can push the upcoming generations to develop healthier and more creative innovations for both the culinary and medical industry.

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