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Culinary Tourism Menu Variation in Mandalika Lombok through Pizza Making Innovation with the Addition of Coconut Oil

Kanom

Abstract: Mandalika Lombok is one of the super-priority tourism destinations in Indonesia. Culinary is one of the important elements needed by tourists, thus innovation and menu variations are needed. Pizza is one of the menus available at Mandalika Lombok, however, there are still not many variations. The availability of adequate and minimal use of Virgin Coconut Oil (VCO) is one of the considerations for making innovations, namely making pizza with the addition of Virgin coconut oil (VCO), as an alternative and a variety of culinary tourism menus in Mandalika Lombok. This study used a non-factorial randomized block design with organoleptic tests including hedonic quality tests and hedonic tests with concentrations of 0%, 50%, 75%, and 100%. The results of the analysis showed that the addition of Virgin coconut oil (VCO) had a significant effect on the Hedonic Quality Test ($P<0.05$) and significantly affected the Hedonic Test ($P<0.05$). The best treatment from the Hedonic Quality Test Results is T3 with a score of 4.20 and the best treatment in the Hedonic Test is T3 with a score of 4.46.

Keywords: Innovation; Pizza; Virgin Coconut Oil; Mandalika Lombok
JEL Classification: L83, Z23, L66

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Introduction

The tourism sector in Indonesia is one sector that can increase foreign exchange and the people's economy through its multiplier effect. This can be seen in various tourist attractions to tourist destinations in Indonesia, such as Banyuwangi in East Java, which can change its image from a city of witchcraft to an internet city with tourism activities in it, such as the tourist attraction of Songgon pine and its surroundings (Agustin et al., 2020). Tourism activities have been able to quickly change the image of an area such as Banyuwangi, East Java, and Mandalika Lombok.

Mandalika Lombok is one of the super-priority destinations in Indonesia with the concept of developing eco-smart resort tourism which is equipped with additional tourist attractions, namely the existence of an international standard circuit which is even one of the most beautiful circuits in the world, apart from having natural and cultural tourist attractions. The super priority tourism destination for Mandalika or the Mandalika Tourism Special Economic Zone (SEZ) has successfully raised the image of Indonesian and even world tourism amid the Covid-19 pandemic that hit the world including Indonesia. This success is proven by the successful holding of the World Super Bike (WSBK) event in November 2021 which is the beginning

of a revival of tourism, especially in Indonesia (Kanom & Darmawan, 2021). Apart from the success with the WSBK event in 2021, Mandalika will also repeat this success with the MotoGP event in March 2022 which is the next step in efforts to restart tourism starting from Mandalika (Estriani, 2019; Ramdani, 2020; Satrio, 2020).

The success of the event mentioned above is progress for Indonesian tourism, especially Mandalika Lombok. The success of the event cannot be separated from the role of culinary as one of the important elements for tourism activities that are needed by tourists. The presence of various menu variations for culinary tourism in Mandalaika Lombok makes tourists very happy at Mandalika, this is because there are culinary tours that are very adequate both from the typical culinary delights of Mandalika Lombok and the archipelago to foreign countries, such as burgers, pizza, and others. The pizza itself is available in Mandalika from classy restaurants to simple food stalls and even homemade ones are available. Pizza is also a fast food that is very popular with local and domestic tourists and even people in Mandalika Lombok.

Even though pizza in Mandalika Lombok is quite available, there are still not many variations and innovations, including the use of various local resources or raw materials, such as the use of Virgin coconut oil or Virgin Coconut Oil (VCO), because so far people have only used it as cooking oil. Even though in making virgin coconut oil it has many advantages such as not requiring high costs because raw materials are easily obtained at relatively cheap prices, the processing is simple and not too complicated, and energy use is minimal because it does not use fuel so that the chemical content and the nutrients are maintained, especially the fatty acids in the oil. Processed products that are popular lately are Virgin Coconut Oil which is beneficial for human life (Suhardiyono, 1993; Widiyanti, 2015; Aziz et al., 2017; Anjasari et al., 2012).

Munurut Rahma Ayu (2015) states that Virgin coconut oil or better known as Virgin Coconut Oil is a modification of the process of making coconut oil so that products with low water content and free fatty acid levels, are clear in color, smell good, and have a Long shelf life of more than 12 months. Meanwhile, pizza is a type of bread, but with a slightly different shape, appearance, taste, and finishing technique. Pizza has a flat round shape with a sprinkling of toppings on it, it has a savory taste and the finishing technique is with a special pan for pizza (Atom S, 2012; Barlina et al., 2012).

Culinary tourism menu variations in Mandalika Lombok through innovation in making pizza with the addition of coconut oil are intended to determine the sensory quality of pizza products using Virgin coconut oil as a substitute for olive oil with a percentage of virgin coconut oil of 50%, 75% and 100% seen in terms of taste, aroma, texture, and color. In addition, it is also to determine the acceptability of tourists for pizza using Virgin coconut oil as a substitute for olive oil with a percentage of 50%, 75%, and 100% virgin coconut oil in terms of taste, aroma, texture, and color.

Research Method

The research method concerning the organoleptic properties of pizza with a composite of olive oil and Virgin Coconut Oil (VCO) used an experiment with a non-factorial Randomized Block Design (RBD) using 4 levels of treatment, each treatment consisting of 3 replications to get 12 tries. The number of repetitions of treatment according to Hanafiah (2014) can be determined using the following equation: $(t – 1) (r - 1) \geq 15$.
Note:
t = number of treatments
r = number of repetitions

Parameter Testing

Organoleptic Test (Hedonic Quality)

Organoleptic testing aims to see tourists' acceptance of pizza-making innovations with the addition of Virgin coconut oil (VCO). Tests were carried out by hedonic quality testing by looking at aspects of color, aroma, texture, and taste involving 50 untrained panelists.

The hedonic test includes 4 aspects, namely color, aroma, texture, and taste with a scale of 1-5 based on the panelist's preferences, namely very dislike, dislike, rather like, like, and like. The bigger the number, the more the panelists like the product. Hedonic testing was carried out by involving 50 untrained panelists.

Determination of Requirements to Become a Panelist

There are seven types of panelists, namely individual panelists, limited tasting panelists, trained panelists, semi-trained panelists, untrained panelists, consumer panelists, and children's panelists. According to SNI 01-2346-2006, the implementation of organoleptic or sensory tests was carried out when the panelists were not hungry or full, namely around 09.00-11.00 and 16.00 or according to local time customs. The minimum number of standard panelists in one test is to involve 6 panelists, while for non-standard panelists it is 30 panelists.

The following are the requirements of the panelists used in the study: (a) Interested in sensory organoleptic tests and willing to participate, (b) Consistent in making decisions, (c) Have a healthy body, free from ENT disease, not color blind and psychological disorders, (d) Does not refuse the food to be tested (not allergic), (e) Does not carry out the test 1 hour after eating, (f) Waits at least 20 minutes after smoking, eating chewing gum, food, and soft drinks, (g) Does not test when you are sick with influenza and eye pain, (h) Don't eat very spicy food at lunch, if the test is carried out during the day, (i) Don't use cosmetics and wash your hands with odorless soap at when carrying out an odor test and it is advisable to wash your mouth with plain water when carrying out a taste test.

In this study, researchers involved at least 50 untrained panelists to make it easier for researchers to get panelists around tourism destinations and locations for research, namely in the Lombok Tourism Special Economic Zone (KEK) area, West Nusa Tenggara Province.

Pizza Code Determination

As contained in the sensory evaluation practicum module, the naming of the sample must be done in such a way that the panelists cannot guess the contents of the sample based on the naming (Arbi, 2016). When it comes to naming, 3 anglers, club, or 3 letters are used randomly. Sequential naming usually introduces bias, as panelists are drawn to give the best score for samples with the first name or code, for example, 1 or ^{A}, and 35 gives the lowest score for samples ending with code 5 or E for the code names 1, 2, 3,4,5 or $^{A, B, C, D, E}$. based on this description, in this case, the researcher created a 3-digit code, namely 345, 555, 888, and 579.

Data analysis technique

The experimental design used in this study was a non-factorial Randomized Block Design (RBD) with 4 treatments and 3 replications (4 x 3) so that 12 experimental units were obtained, in this study a randomized block design using Virgin coconut oil (VCO) 0% (Virginal), 50% (50gr), 75% (75ml) and 100% (100ml).

The equation of the design model is as follows:

$$Y_{ij} = \mu + a_i + \beta_j + \varepsilon_{ij}$$

Note:
Y_{ij}= Result of observation from treatment to I and repetition to j
μ = Common Middle Value
a_i = Effect of treatment i
β_j = Effect of treatment to j
ε_{ij} = Effect of an experimental error on the i and j treatments

The data analyzed were organoleptic tests including color, aroma, texture, taste, and overall involving 50 untrained panelists. The method used is a hedonic quality test and a hedonic test. The data obtained were then analyzed using ANOVA (Analysis of Variance).

Analysis of Variance (ANOVA)

As stated by David and Djamaris (2018), analysis of Variance (ANOVA) is an analytical method that belongs to the branch of statistical inference. The data obtained from the questionnaire sheet can be tabulated and its quality value determined by finding the average for each panelist at the 95% confidence level or 0.05 significance level (SNI 01-2346-2006).

The experimental design used was a non-factorial Randomized Block Design (RBD) with 4 treatment levels, namely the addition of 0% (Virginal), 50%, 75%, and 100% Virgin coconut oil (VCO). The test used is the hedonic quality test and the hedonic test with heterogeneous data, namely panelists as a measuring tool.

The data obtained were then analyzed using the Analysis of Variance (ANOVA) or variance using the SPSS (Statistical Package for the Social Sciences) application program and if there were significant differences in the results then it was continued with the DMRT test (Duncan's Multiple Range Test) with a confidence level of 95 % or a significance level of 0.05.

Result and Discussion

The variety of culinary tourism menus in Mandalika Lombok through the innovation of making pizza with the addition of Virgin Coconut Oil (VCO) shows that it needs to be done as an effort to add to the menu as an option for tourists visiting Mandalika Lombok, both local and domestic tourists, especially for international tourists. The details of the results and analysis are as follows:

Hedonic Quality Test Results

Taste Hedonic Quality Test

The results of the hedonic quality test for taste parameters in making pizza with the addition of virgin coconut oil (VCO) are presented in the Table 1.

Table 1 Results of Hedonic Pizza Quality Test on Taste Parameters

	Treatment			
Flavor	K0	K1	K2	K3
Savory	3.26^{b}	3.50^{ab}	3.56^{ab}	3.98^{a}

Note:
K0(100% olive oil + 0% Virgin coconut oil control),
K1 (50% olive oil + 50% virgin coconut oil),
K2(Olive oil 25%+ Virgin coconut oil 75%),
K3 (Olive oil 0% + Virgin coconut oil 100%).

Notations a, ab, b, bc, c, cd, and d in different columns show significantly different effects (P<0.05) while the absence of notations indicates no significantly different effects (P>0.05). The alphabetical order of notation indicates the best treatment. The notation a is better than the notation b and so on.

The results of making pizza with Virgin coconut oil (VCO) showed a significant difference (P <0.05) in the savory taste served to the panelists in the hedonic quality test. The results of this study explain that the value of the savory taste parameter on pizza with different substitution concentrations ranges from 3.26b – 3.98a.

Color Hedonic Quality Test Results

The results of testing the hedonic quality of color parameters in making pizza with the addition of virgin coconut oil (VCO) as a substitute for olive oil as presented in the Table 2.

Table 2 Results of Hedonic Pizza Quality Testing Color Parameters

	Treatment			
Color	K0	K1	K2	K3
Virginal Color Virgin Coconut Oil Pizza (VCO)	3.48^{a}	3.28^{a}	3.20^{a}	2.64^{b}

Note:
K0(100% olive oil + 0% Virgin coconut oil control),
K1 (50% olive oil + 50% virgin coconut oil),
K2(Olive oil 25%+ Virgin coconut oil 75%),
K3 (Olive oil 0% + Virgin coconut oil 100%).

Notations $^{a, ab, b, bc, c, cd,}$ and ^{d} in different columns show that the effect of ^{b} is significantly different (P<0.05) while the absence of notation indicates that there is no significantly different effect (P>0.05). The alphabetical order of notation indicates the best treatment. The notation a is better than the notation ^{b} and so on.

The results of the pizza-making innovation with the addition of Virgin coconut oil (VCO) showed a significant difference (P<0.05) in the color presented to the panelists (tourists) in the hedonic quality test. The results of this study explained that the values contained in the color parameter on pizza with different substitution concentrations ranged from 2.64^{b} - 3.48^{a}.

Texture Hedonic Quality Test Results

The results of the hedonic quality test with texture parameters in the innovation of making pizza with the addition of Virgin Coconut Oil (VCO) as a substitute for olive oil as presented in the Table 3.

Table 3 Results of Testing the Quality of Hedonic Pizza Texture Parameters

Texture	Treatment			
	K0	K1	K2	K3
Softness	3.60^{a}	3.34^{ab}	3.28^{ab}	2.98^{b}

Note:
K0(100% olive oil + 0% Virgin coconut oil control),
K1 (50% olive oil + 50% virgin coconut oil),
K2(Olive oil 25%+ Virgin coconut oil 75%),
K3 (Olive oil 0% + Virgin coconut oil 100%).

Notations $^{a, ab, b, bc, c, cd}$, and ^{d} in different columns show significantly different effects (P<0.05) while the absence of notations indicates no significantly different effects (P>0.05). The alphabetical order of notation indicates the best treatment. The notation ^{a} is better than the notation ^{b} and so on.

The results of the innovation of making pizza with the addition of Virgin Coconut Oil (VCO) showed that there was a significant difference (P<0.05) in the texture presented to the panelists (tourists) in the hedonic quality test. The results of this study explain that the value of the texture parameter on pizza with different substitution concentrations ranges from $2.98^{b} - 3.60^{a}$.

Aroma Hedonic Quality Test Results

The results of testing the hedonic quality of the aroma parameter in the innovation of making pizza with Virgin Coconut Oil (VCO) as a substitute for olive oil as presented in the Table 4.

Table 4 Results of Hedonic Pizza Quality Testing Aroma Parameters

Aroma	Treatment			
	K0	K1	K2	K3
Specially scented *Virgin Coconut Oil* (VCO)	1.58 [d]	2.54[c]	3.44[b]	3.98[a]

Note:
K0(100% olive oil + 0% Virgin coconut oil control),
K1 (50% olive oil + 50% virgin coconut oil),
K2(Olive oil 25%+ Virgin coconut oil 75%),
K3 (Olive oil 0% + Virgin coconut oil 100%).

The notations [a, ab, b, bc, c, cd], and d in different columns show significantly different effects (P<0.05), while the absence of notations indicates no significantly different effects (P>0.05). The alphabetical order of notation indicates the best treatment. The notation [a] is better than the notation [b] and so on.

The results of the innovation of making pizza with Virgin coconut oil showed a significant difference (P<0.05) in the aroma served to panelists (tourists) in the hedonic quality test. The results of this study explain that the value of the aroma parameter on pizza with different substitution concentrations ranges from 1.58^{d} – 3.98^{a}.

Overall Hedonic Quality Test Results

The overall parameter hedonic quality test results in the innovation of making pizza with Virgin coconut oil or Virgin Coconut Oil as a substitute for olive oil are presented in Table 5.

Table 5 Overall Hedonic Quality Test Results

Overall	Treatment			
	K0	K1	K2	K3
	2.98[c]	3.16[bc]	3.37[ab]	3.39[a]

Note:
K0(100% olive oil + 0% Virgin coconut oil control),
K1 (50% olive oil + 50% virgin coconut oil),
K2(Olive oil 25%+ Virgin coconut oil 75%),
K3 (Olive oil 0% + Virgin coconut oil 100%).

Notations a, ab, b, bc, c, cd, and d in different columns show significantly different effects (P<0.05) while the absence of notations indicates no significantly different effects (P>0.05). The alphabetical order of the notation indicates the best treatment. The notation a is better than the notation b and so on.

Innovation Making pizza with Virgin coconut oil showed a significant difference (P<0.05) to the overall parameters presented to the panelists (tourists) in the hedonic quality test. The results of this study explain that the value of the overall parameter on pizza with different substitution concentrations ranges from 2.98c -3.39a.

Hedonic Test Results

The results of hedonic testing in pizza-making innovation with the addition of Virgin coconut oil or Virgin Coconut Oil as a substitute for olive oil are presented in the Table 6.

Table 6 Pizza Hedonic Test Results

	Treatment			
Parameter	K0	K1	K2	K3
Flavor	3,98 [a]	3,74 [ab]	3,60 [ab]	3,48[b]
Color	3,10 [c]	3,24 [bc]	3,50 [b]	3,90 [a]
Texture	3,52[b]	3,52[b]	3,62 [ab]	3,92[a]
Aroma	2,36[c]	3,34[b]	3,64[b]	4,16[a]
Overall	3,24[b]	3,56[a]	3,59[a]	3,76[a]

Note:
K0(100% olive oil + virgin coconut oil 0% control),
K1 (50% olive oil + Virgin coconut oil 50%),
K2 (25% olive oil + Virgin coconut oil 75%),
K3 (0% olive oil + Virgin coconut oil 100 %).

Notations [a, ab, b, bc, c, cd,] and d in different columns show significantly different effects (P<0.05) while the absence of notations indicates no significantly different effects (P>0.05). The alphabetical order of notation indicates the best treatment. Notation [a] is better than notation [b.]

The results of the innovation of making pizza with the addition of Virgin coconut oil (VCO) show that it is significantly different (P<0.05) from the overall parameters presented to the panelists (tourists) in the hedonic quality test. The results of this study explain that the value of the pizza taste parameter with different substitution concentrations ranges from 3.24[b] – 3.76[a]. The value of the pizza color parameter with the substitution of olive oil with Virgin coconut oil (VCO) ranges from 3.10[c] – 3.90[a].

The value of the pizza texture parameter with the substitution of olive oil with Virgin coconut oil (VCO) ranges from 3.50[b] – 3.92[a]. Values for the characteristic aroma parameter (coconut) with the substitution of olive oil with Virgin coconut oil ranged from 2.36[b] - 4.16[a]. The results of the concentration of making pizza on the overall parameter or as a whole show a value at (3.24[b] - 3.76 [a]).

Pizza Making Hedonic Quality Test

Taste Hedonic Quality Test

The following are the results of the hedonic quality test of taste on the innovation of making Pizza substitution of olive oil with the addition of Virgin coconut oil or Virgin Coconut Oil as follows:

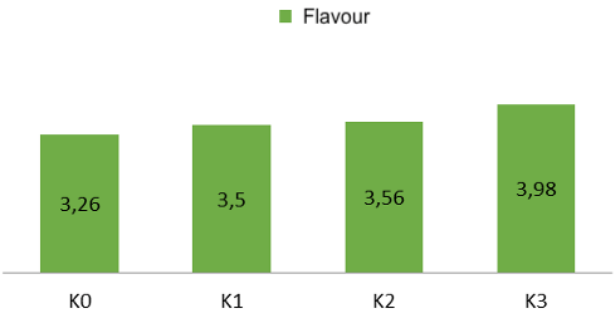

Figure 1 Pizza Flavor Hedonic Quality Test Results

The taste parameter consists of savory taste. The average value of the hedonic quality assessment results for savory taste on the Virginal pizza (K0) is 3.26 and pizza with olive oil substitution with Virgin coconut oil or Virgin Coconut Oil is 3.5 (K1), 3.56 (K2), and 3.98 (K3). The results of the ANOVA analysis showed that making pizza by substituting olive oil with Virgin coconut oil had a significant (P<0.05) effect on the savory taste. The results of Duncan's test showed that the savory taste quality of Pizza K3 (100% Virgin coconut oil had the highest order value with a score of 3.98 and was not significantly different from K2 (25% olive oil: 75 Virgin coconut oil and K1 (50% olive oil: 50% virgin coconut oil but significantly different from the K0 treatment (100% olive oil: 0% Virgin coconut oil.

From the results of this study, it is known that the more Virgin coconut oil (VCO) added, the more the level of the piquancy of the taste of pizza will increase. The addition of this savory taste is due to the mixing of virgin coconut oil solution in the dough. So that the content savory taste of coconut oil affects the level of quality of the pizza taste. Overall Virgin coconut oil had a significant (P<0.05) effect on pizza making. The scores for the K0, K1, K2 and K3 treatments had an average of 3.26, 3.5, 3.56, and 3.98. K3 treatment (100% Virgin coconut oil) has the highest value of the other treatments.

Color Hedonic Quality Test

The following are the results of the color hedonic quality test on the innovation of making Pizza substituting olive oil with Virgin coconut oil (VCO) as follows:

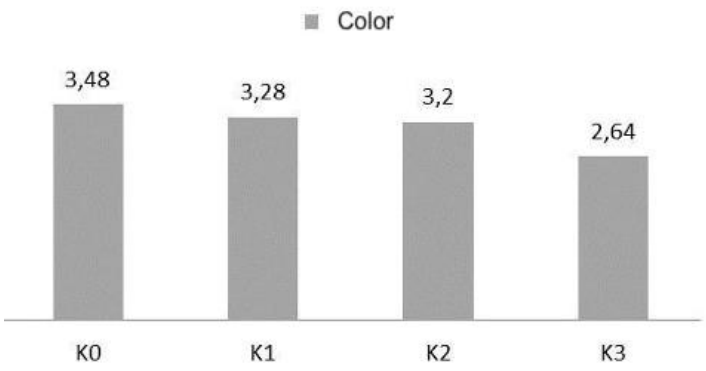

Figure 2 Pizza Color Hedonic Quality Test Results

Based on the average value of the results of the color hedonic quality assessment on Pizza (K0) is 3.48 and Pizza with virgin coconut oil (VCO) substitution is 3.28 (K1), 3.2 (K2), and 2.64 (K3). The results of the ANOVA analysis showed that making pizza with Virgin coconut oil substitution had a significant effect (P<0.05) on the color of the pizza ingredients.

The results of Duncan's test showed that the color quality of Pizza K0 (100% olive oil: 0% coconut oil) had the highest score, with a score of 3.48, not significantly different from the K1 treatment (50% olive oil: 50% Virgin coconut oil), and K2 (25% olive oil: 75 Virgin coconut oil), but significantly different from K3 (0% olive oil: 100% Virgin coconut oil). The brown color is due to temperature due to the drying process and the oven can change the color of a food ingredient, namely in this case virgin coconut oil which is caused by the dark color that appears. The decrease in anthocyanins causes a decrease in the intensity of the brown color so that the oil is brown. This is caused by several activities (Akissoe et al., 2003).

Texture Hedonic Quality Test

The following are the results of the texture hedonic quality test on the innovation of making Pizza substituting olive oil with Virgin coconut oil or Virgin Coconut Oil (VCO) as shown in the Figure 3.

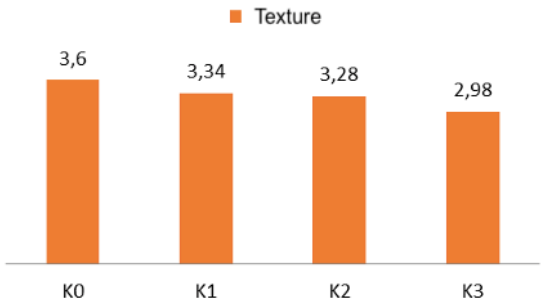

Figure 3 Hedonic Testing for Texture

The texture parameter consists of softness. The average value of hedonic quality assessment results for the softness of pizza (K0) is 3.6 and for pizza with Virgin coconut oil (VCO) is 3.34 (K1), 3.28 (K2), and 2.98 (K3). The results of the ANOVA analysis showed that making pizza with Virgin coconut oil substitution had a significant effect (P<0.05) on the texture of the pizza.

The results of Duncan's test showed that the texture quality of softness in Pizza K0 (100% olive oil: 0% Virgin coconut oil had the highest score with a score of 3.60, not significantly different from K1 (50% olive oil: 50%% coconut oil). virgin, and K2 (25% olive oil: 75%% virgin coconut oil but significantly different from K3 (0% olive oil: 100%% Virgin coconut oil. Overall Virgin coconut oil had a significant effect (P<0.05) on pizza-making innovation with scores from the K0, K1, K2, and K3 treatments as a whole having an average of 3.6, 3.34, 3.28, and 2.98. The K0 treatment (100% olive oil: 0% Virgin coconut oil had the highest score compared to the other treatments, while the K3 treatment (100% Virgin coconut oil had the lowest score.

Aroma Hedonic Quality Test

The following are the results of the hedonic aroma quality test in making Pizza substituting olive oil with Virgin coconut oil or Virgin Coconut Oil (VCO) as presented in the Figure 4.

Figure 4 Pizza Aroma Hedonic Quality Test Results

The average value of the hedonic quality assessment results on aroma (according to ingredients) on the Virginal pizza (K0) is 1.58 and pizza with virgin coconut oil substitution is 2.54 (K1), 3.48 (K2), and 3.98 (K3). The results of the ANOVA analysis showed that the innovation of making pizza with Virgin coconut oil substitution had a significant (P<0.05) effect on the aroma of the pizza. Duncan's test results show that the quality of the aroma on the pizza has a K3 value (100%% Virgin coconut oil has the highest score with a score of 3.98 and is significantly different from the K1 treatment (50% olive oil: 50%% Virgin coconut oil, K2 (25% olive oil: 75% Virgin coconut oil, and K3 treatment (0% olive oil: 100%% virgin coconut oil.

From the results of this study, it is known that the more virgin coconut oil or Virgin Coconut Oil (VCO) added, the stronger the coconut aroma. This is also following what has been stated by Kartiwan et al. (2015) aroma is a compound that is easy to fly (volatile) and reaches the top of the human olfactory sensor (olfactory cells) in the form of gas. The food industry considers odor

testing very important because it can quickly provide results regarding consumer or tourist preferences for a product (Setyaningsih et al., 2010).

Overall Hedonic Quality Test

The following are the results of the overall hedonic quality test in the manufacture of olive oil substitution pizza with Virgin coconut oil or Virgin Coconut Oil (VCO) as presented in the Figure 5.

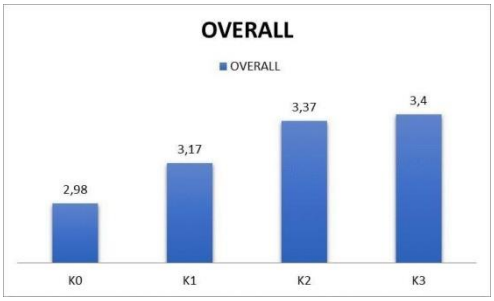

Figure 5 Pizza Aroma Hedonic Quality Test Results

The results of the analysis showed that overall the making of pizza with Virgin coconut oil (VCO) as a substitute for olive oil had a significant effect (P<0.05) on the overall hedonic quality of the pizza. Treatments K0, K1, K2, and K3 have an average of 2.98, 3.17, 3.37 and 3.4. The K3 treatment (the treatment containing 100% Virgin coconut oil had the highest average of 3.4 compared to the other treatments. This shows that Pizza with 100% substitution of Virgin coconut oil has the best hedonic quality value than other treatments. From the treatment K0, K1, K2, and K3 have the same average value, namely 3. The quality attribute that most contributes to the quality of the pizza can be seen in the spider chart image presented in the Figure 6.

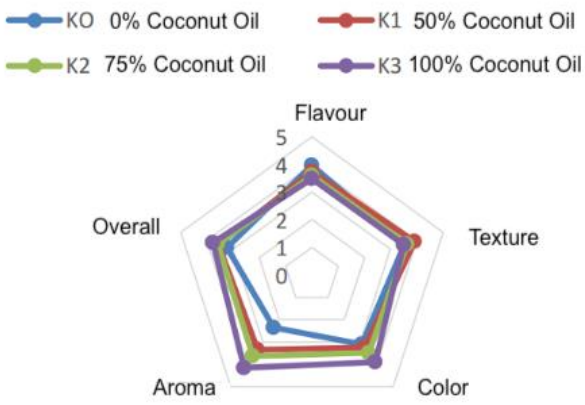

Figure 6 Organoleptic Test Results for Hedonic Quality

The results of the hedonic quality organoleptic test analysis based on Figure 6 show that the highest average score of the color, aroma, taste, and overall parameters was obtained by K3 with the addition of Virgin coconut oil (VCO) because the K3 treatment line is at the outermost spider chart where the outermost line of this spider chart is the highest score obtained and the innermost line is the lowest score obtained in each treatment. While the lowest average score of the hedonic quality organoleptic test was obtained by K0 with the addition of 0% Virgin coconut oil.

Pizza Hedonic Test

The following are the results of the hedonic (liking) test on pizza with the addition of coconut oil (VCO) as presented in the Figure 7.

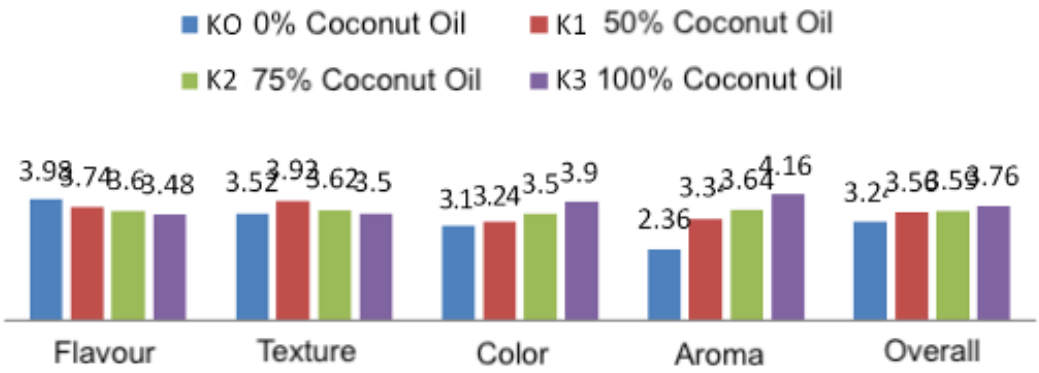

Figure 7 Hedonic Test

Flavor Hedonic Test

The taste of food is a characteristic that can be felt by the sense of taste. The taste of pizza substituted with olive oil is influenced by various concentrations of the addition of Virgin coconut oil (VCO). The results of the analysis of the average preference level of panelists (tourists) on the taste parameter of pizza K0 (0% Virgin coconut oil was 3.98 and pizza with substitutes for virgin coconut oil K1, K2 and K3 were (3, 74), (3.6), and (3.48). The results of the ANOVA test showed that the substitution of Virgin coconut oil (VCO) had a significant effect ($P<0.05$) on the preference level of the panelists (tourists) for the taste parameter. The results of the DUNCAN test showed that the level of preference for taste on pizza with the substitution and/or addition of Virgin coconut oil in the K1 and K2 treatments had no significant difference with the K0 treatment, but had a significant difference with K3.

The results of research on Pizza substitution or with the addition of Virgin coconut oil which has the highest value is the K0 treatment (100% olive oil: 0% Virgin coconut oil with a score of 3.98. This is because the panelists (tourists) like the taste of pizza which is synonymous with savory, because the more Virgin coconut oil added to the pizza will affect the taste of the pizza, the savory taste produced by olive oil will fade due to the addition of oil from Virgin coconut oil.

Texture Hedonic Test

The results of the analysis showed that the natural dye of Virgin coconut oil (VCO) as a substitute for olive oil in pizza had a significant (P<0.05) effect on texture. Treatments K0 (control), K1, K2, and K3 have an average of 3.52, 3.92, 3.62, and 3.5. K1 treatment (50% Virgin coconut oil had the highest score of 3.92. This indicated that K1 had a significant effect on K0, K2, and K3 treatments with an average of 3.52, 3.62, and 3,5.

The oil content in Virgin coconut oil will affect the texture of the pizza, the more oil content, the crunchier the texture will be. Virgin coconut oil has a different level of viscosity than olive oil. Virgin coconut oil (VCO) is thicker than olive oil, because virgin coconut oil (VCO) is made from the essence of coconut plants, where these plants produce a lot of good oil content, and if you use 100% virgin coconut oil Pizza the output will be perfect.

If the use of 50% virgin coconut oil results in a soft enough texture on the pizza, this is also reinforced by references from Winarno (1997) that oil is one of the important food ingredients that will affect the texture and physical appearance. Pizza should have a perfect crispy texture but not be hard for Italian pizza.

Color Hedonic Test

The results of the analysis showed that coconut oil as a substitute for olive oil in pizza had a significant (P<0.05) effect on color. Treatments K0 (control), K1, K2, and K3 have an average of 3.1, 3.24, 3.5, and 3.94. the K3 treatment (100% coconut oil had the highest score of 3.94 (Rather Liked) this indicated that the K3 treatment had a significant effect on K0, K1, and K2 with an average of 3.1, 3,24, 3,5.

Besides taste, color is also an important measure of food quality. This is supported by Rymbai et al. (2011) color is one of the main attractions, and an important criterion for the acceptance of products such as textiles, cosmetics, food, and others. The overall color change is influenced by coconut oil, this coconut oil has a color that is not too strong and not too bright like olive oil. because coconut oil is made from the essence of coconut plants, where these plants produce good oil content. This is supported by a statement from Paryanto, et al. (2012) coconut oil substance has weaknesses including unstable color, poor color uniformity, low pigment concentration, and limited color spectrum. However, coconut oil has its charm with the characteristic color produced, consumers will easily distinguish foods from olive oil and coconut oil.

Aroma Hedonic Test

Aroma is a sensory property that can be felt by the sense of smell. The aroma of Virgin coconut oil (VCO) is influenced by various concentrations of Virgin coconut oil. The results of the analysis of the average preference level of panelists (tourists) on the pizza aroma parameter K0 (0% Virgin coconut oil is 2.36 and pizza with coconut oil substitutes K1, K2, and K3 is 2.36, 3.64, and 4.16. The results of the ANOVA test showed that the substitution or addition of Virgin coconut oil had a significant (P<0.05) effect on the preference level of the panelists (tourists) for the

aroma parameter. The results of the DUNCAN test showed that the level of preference for aroma on substitution pizza or the addition of Virgin coconut oil K3 treatment had a significant difference with K0, K2, and K3 treatments (rather strong).

The results of research on pizza with the addition or substitution of Virgin coconut oil which has the highest value is the K3 treatment (0% olive oil: 100% Virgin coconut oil with a score of 4.16. This is because the more Virgin coconut oil is added, the more the aroma value will be added to the pizza.

The presence of an aroma in Virgin coconut oil is what makes the aroma of the K3 treatment pizza stronger than the K0 treatment (control). This is also relevant to what was stated by Kartiwan et al. (2015) that aroma is a volatile compound and reaches the human olfactory sensors (olfactory cells) in the form of gas.

Overall Hedonic Test

The results of the analysis show that overall the innovation of making pizza with the addition of Virgin coconut oil (VCO) as a substitute for olive oil has a significant ($P<0.05$) effect on hedonic overall (overall) pizza. The average value of panelists (tourists) on the overall parameter pizza K0 (0% Virgin coconut oil was 3.24 and pizza with substitutes for virgin coconut oil K1, K2, and K3 was 3.56 , 3.59, and 3.76. The results of the DUNCAN test showed that the overall preference level for pizza substituted with Virgin coconut oil K3 treatment had a significant difference with K0 treatment, but had no significant difference in K2 and K3.

The results of research on substitution pizza or the addition of Virgin coconut oil which has the highest value is the K3 treatment (0% olive oil: 100% Virgin coconut oil with a score of 3.76. The quality attribute that has the most contribution to the quality of pizza can be seen from the spider chart image presented in the figure 6.

Based on the results of the hedonic organoleptic (liking) test analysis based on the picture above (Figure 6) it is known that the highest mean score of the parameters of taste, color, texture, and overall was obtained by the K3 treatment with virgin coconut oil VCO substitution of 100% meaning that in terms of taste, color, texture, and overall panelists (tourists) prefer the K3 treatment because the K3 treatment line is on the outside of the spider chart where the outermost line of this spider chart is the highest score obtained and the innermost line is the lowest score obtained in each treatment.

The level of tourist acceptance in the Mandalika Lombok Tourism Special Economic Zone (SEZ) for pizza with K3 treatment 0% olive oil: 100% Virgin coconut oil is very good, this is because the pizza has a very natural looking color and the right aroma. The aroma produced will not interfere when the pizza is consumed, because before Virgin coconut oil (VCO) is processed as an aroma, a cooking process occurs first in virgin coconut oil where the juice is extracted after it becomes oil to produce virgin coconut oil is in the form of oil, it's just a little thick from the deposition process that occurs during manufacture. The taste produced by the K3 treatment is less savory due to the addition of Virgin coconut oil (VCO) which can reduce the level of sweetness. The K0

treatment tends to taste sweeter than the other treatments because there is no added coconut oil in it.

Conclusion

A variety of culinary tourism menus in Mandalika Lombok through the innovation of making pizza with the addition of coconut oil is urgently needed as an alternative menu for tourists visiting the Tourism Economic Zone (SEZ) in particular and Indonesia in general. Innovation is very important to continue to be carried out apart from being a menu variation that can potentially increase the number of visits and the length of stay of tourists.

The innovation of making pizza with the addition of coconut oil or Virgin Coconut Oil (VCO) can be done easily by all groups, this can be seen from the process of making very easy coconut oil, which only requires a few ways, and the process of making this oil can be done in 4-5 hours. to get very good results. The process of making substitution pizza or by adding Virgin coconut oil (VCO) has similarities to the process of making pizza in general. Starting from the first stage is weighing the ingredients first, making the dough, molding the dough in the pan, then the baking process, and so on until it's ready to serve.

Making pizza with the addition of Virgin coconut oil (VCO) affects taste, color, texture, aroma, and overall (overall) in the hedonic quality test. The best overall pizza taste based on the hedonic quality test is the K0 treatment (0% Virgin coconut oil) which is 3.98. The best pizza color based on the hedonic quality test is the K3 treatment (0% olive oil; 100% Virgin coconut oil) with an average of 3.48. The best overall texture of the pizza based on the hedonic quality test is the K0 treatment (0% olive oil:100% Virgin coconut oil) with an average of 3.6. The aroma of pizza is in the K3 treatment (0% olive oil: 100% Virgin coconut oil) with an average value of 3.98. Overall, the best pizza based on the hedonic quality test is K3 (0% olive oil: 100% p virgin coconut oil) with an average value of 3.4.

The taste of pizza based on the hedonic test is the K0 treatment (0% olive oil: 50% Virgin coconut oil) which is 3.98. The best texture of pizza based on the hedonic test is the K1 treatment (50% olive oil:50% Virgin coconut oil) with an average of 3.92. The best color of pizza based on the hedonic test is the K3 treatment with an average of 3.9. The aroma of Virgin coconut oil (VCO) pizza is in K3 treatment (0% olive oil: 100% Virgin coconut oil) with an average value of 4.16. Overall, the best pizza based on the K3 hedonic test.

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