



TITLE: ACCEPTABILITY OF ASHITABA LEAF AND BITTERGOURD FLAVORED PASTA

CATEGORY: PRODUCT DEVELOPMENT

RESEARCH AREA: INNOVATION OF THE PRODUCT

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ABSTRACT:

This study entitled "Acceptability of Ashitaba Leaf and Bitter gourd Flavored Pasta" aimed to determined and discover the trial method if ashitaba and bitter gourd can be made into flavored pasta.

The study aimed to produce Ashitaba and Bitter gourd Flavored Pasta especially it sought to answer the following questions: 1.) What are the methods used in preparing Ashitaba and Bitter ground Flavored Pasta.2.) What is the mean level of acceptability of Ashitaba and Bitter Gourd Flavored Pasta as rated by CTE students, parents and high school students based on the following criteria: Appearance, Taste, Texture and Nutritive Content, 3.) Is there a significant difference on the rating given by CTE students and Parents on the level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta, 4.) Is there a significant difference on the rating given by CTE students and High School Students on the level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta?

The experimental method of research was used to determine the level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta in terms of the sensory qualities as to appearance, taste, texture and nutritive content.

The study utilized (30) respondents consisting (10) CTE Students, (10) Parents and (10) High School Students. The researchers used random sampling to evaluate this study. In random sampling is the part of statistical practice concerned with the selection of a subset of individuals intended to yield some knowledge about the population of concern, especially for purpose of making prediction based on statistical inference.

The research instrument used was the scorecard. The researchers made the scorecard in evaluating the sensory qualities in terms of Appearance, taste, texture and nutritive content as well as acceptability of Ashitaba and Bitter Gourd Flavored Pasta. Ten (10) CTE students, Ten (10) Parents and Ten (10) High School Students served as respondents in this experimental.

Weighted mean and standard deviation were used to determine the respondent awareness on the finish product of Ashitaba and Bitter Gourd Flavored Pasta in terms of appearance, taste, texture and nutritive content. The t-test is used to determine if there is a significant difference on the rating given by CTE students and parents, CTE students and high school students on the acceptability of ashitaba and bitter gourd flavored pasta.

Ashitaba and Bitter Gourd Flavored Pasta was made through preparing the ingredients, tools and equipment needed, Wash the ashitaba and bitter gourd leaves and chopped, mix the flour, ashitaba and bitter gourd , add the remaining ingredients such as oil and eggs, form the dough into ball, kneading the dough until it become soft, rest for one hour in refrigerator, roll the dough until it become flat and slice into strips, dry the pasta strips for 30 minutes to one hour, blanced the ashitaba and bitter gourd flavored pasta, serve it with sauce.

The mean level of acceptability of Ashitaba and Bitter Gourd Flavored Pasta as rated by the average mean of 4.44 and standard deviation of 0.444 verbally interpreted as "high acceptable".

The mean level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta as rated by the parents based on the different sensory qualities such as appearance, taste, texture where highly acceptable as reflected by the average mean of 4.68 and standard deviation of 0.451 verbally interpreted as "high acceptable".

The mean level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta as rated by the High School Students based on the different sensory qualities such as appearance, taste and texture were highly acceptable as reflected by the average mean of 4.80 and standard deviation of 0.379 verbally interpreted as "highly acceptable".

There is no significant difference on the rating given by the CTE students and parents and CTE students and high school students on the Acceptability of Ashitaba and Bitter Gourd Flavored Pasta since the critical T-value is 2.045 which is 2.045 which is greater than the computed T-value of 2,000.

BACKGROUND and RATIONALE

Ashitaba is an herbal plant that grows at same parts of the country of japan. It has vitamins and minerals, it can also help to heal different kind of sickness, they also called this super food, because most of the people eat this in raw, and it is also ingredient in different dishes like ice cream, soba tempura and others.

Ashitaba (Tomorrow's Leaf) has its origins on the Island of Hachijo where the warm tropical currents pass by on their way North to meet the cold Arctic waters of the Pacific. How did ashitaba come by its name of tomorrow's leaf or weed. It was named for its ability to reproduce is green stem and leaf almost on a daily basis.

Several families specially the poor ones are deprived of nutritious food due to its high cost. Whereas, children from rich families also missed the opportunity for nutritious food due to eating patterns and lifestyles. Children are tolerated to each much less nutritious foods such as eating more meat and less vegetables. Furthermore, increasing number of food chains and establishments and rising numbers of working mothers specially in urban areas, compel them to depend on eating “outside” not considering the nutritive value of what they eat.

Children generally are not fond of eating vegetables more specially when they are not properly trained to do it. However, they like much of the junk foods, pastries and delicacies bought in stores. Vegetables like ampalaya are not known and familiar to them. Due to this, more of them even from rich families suffer from malnourishment. Even vegetable is offered in the meal, they prefer to eat the meat. Housewives now found it difficult to incorporate these health foods in the meal, how will they prepare it in prepare it in such a way that it will be liked and eaten by the children.

The researcher worked on this problem to provide housewives and the whole community with a technique to incorporate vegetables in a food preparation which will be liked by everyone. New flavored pasta were developed in this research incorporating ingredients such as ashitaba and ampalaya which are very nutritious but less eaten. The said vegetables are successfully made into flavored pasta which are very nutritious.

To test the products, the new flavored pasta were subjected into a test of acceptability in sensory qualities and to be able to innovate a product that will help people who can buy the expensive pasta for their food. As well as the individual to be listed in the choice of healthy food and the same time affordable.

OBJECTIVE

The main purpose of this study is to utilize Ashitaba Leaf and Bitter Gourd into flavored pasta specifically it sought to answer the following questions:

1. What are the methods used in preparing Ashitaba and Bitter Gourd Flavored Pasta?
2. What is the mean level of acceptability of Ashitaba (tomorrow's leaf) and Bitter Gourd Flavored Pasta based on its sensory qualities such as:
 - 2.1 Appearance
 - 2.2 Taste
 - 2.3 Texture
 - 2.4 Nutritive content
3. Is there a significant difference on the rating given by CTE students and Parents on the level of Acceptability Ashitaba and Bitter Gourd Flavored Pasta?
4. Is there a significant difference on the rating given by CTE students and High School Students on the level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta?

REVIEW OF THE RELATED LITERATURE

Ashitaba is a large herb that grows primarily in the central region of Japan. Its root, leaf, and stem are used to make medicine. Ashitaba contains a yellow sap which contains chalcones that are unique to this strain of angelica. It is these chalcones that are considered as the active ingredients that give rise to ashitaba's use as a diuretic, laxative, and aid to good metabolism. (www.ashitabagre.com)

Green plants such as Ashitaba are the basis of our energy conversion life cycle. These green plants contain chlorophyll which uses the energy from the sun to convert carbon dioxide into oxygen and create a by-product starch. Chlorophyll has shown an ability to be anti-bacterial, aid in the production of blood, and an ability to help heal wounds. (<http://herbs.lovetoknow.com/Ashitaba> plant)

Momordica charantia (MC; bitter gourd) is a traditional herbal commonly used for its antidiabetic, antioxidant, contraceptive and antibacterial properties. (<https://www.tandfonline.com>)

Momordica charantia (M. charantia), commonly referred to as bitter gourd, karela and balsam pear. Its fruit is also used for the treatment of diabetes and related conditions among the indigenous populations of Asia, South America, India and East Africa. Abundant pre-clinical studies have documented in the anti-diabetic and hypoglycaemic effects of *M. charantia* through various postulated mechanisms, clinical trial data with human subjects are limited and flawed by poor study design and low statistical power. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4027280/>)

Pasta have different variety mostly are long pasta, short pasta, minute pasta (pastina used for soup) pasta all'uovo (egg pasta), fresh pasta and pasta for pasta al forno (baked pasta) dishes.

The Webster's new collegiate dictionary (2002) stated the pasta a paste in a form of fresh dough that has considerable proportion in size and has different shapes, often prepared from semolina, farina or wheat flour mainly combined with starch and water.

Pasta is a generic term for the food made from unleavened dough of wheat or buckwheat flour and water.

Pasta generally a simple dish, but comes in large varieties because it is a versatile food item (Wikipedia.org/wiki pasta)

INGREDIENTS USED

Table I. List of Ingredients in making Ashitaba Leaf and Bitter Gourd Flavored Pasta

Quantity	Unit	Description
½	Cup	Ashitaba Leaves
½	Cup	Bitter Gourd

2	Cups	Bread Flour
2	Pieces	Eggs
$\frac{1}{4}$	Teaspoon	Salt (iodized)
2	Teaspoon	Vegetable Oil

The table shows the proportion of ingredients to be used in the production of pasta made from ashitaba leaf and bitter gourd (ampalaya) flavored.

PROCEDURE

1. Prepare all the ingredients, tools and equipment used in making ashitaba leaf and bitter gourd flavored pasta.
2. Wash the Ashitaba leaves, bitter gourd and chopped.
3. Add the remaining ingredients like flour, eggs, salt and vegetable oil.
4. Mix the ingredients form the dough into ball.
5. Place the dough into the refrigerator and rest for one hour.
6. Roll the dough until it become flat.
7. Cut the dough into strips.
8. Dry the pasta strips for 30 minutes to one hour.
9. Packaging of ashitaba leaf and bitter gourd flavored pasta.

RESULT AND DISCUSSION

The discussion below was the ratings obtained from the different respondents about the evaluation of Ashitaba Leaf and Bitter Gourd Flavored Pasta that served as the basis in formulating the findings, conclusions and recommendations.

Table 1. Showed the mean level of Ashitaba Leaf and Bitter Gourd Flavored Pasta as rated by the CTE students based on the different sensory qualities such as appearance, taste, texture and nutritive content. The table also shows the mean, standard deviation and the verbal interpretation.

CRITERIA	X	SD	VI
Appearance			
1.The appearance of ashitaba and bitter gourd flavored pasta is presentable to the consumer.	4.45	0.413	HA
2. The finished product achieved the shaped and color of pasta that made it more interesting.	4.55	0.407	HA
Average Mean	4.50	0.410	HA
Taste			
1.The product recognized the flavor of ashitaba and bitter gourd as you chew it.	4.45	0.413	HA
2. The finish product had improved taste due to ashitaba leaves and bitter gourd.	4.36	0.495	HA
Average Mean	4.41	0.454	HA
Texture			
1.The firmness of the finish product would reflect the quality of the same due to structure.	4.38	0.469	HA
2. The finish product has exact texture of pasta products.	4.45	0.464	HA
Average Mean	4.41	0.467	HA
Overall average mean	4.44	0.444	HA

Table 1. Indicated that the appearance of Ashitaba and Bitter gourd flavored pasta is presentable to the consumer as reflected by the mean of 4.50 with the standard deviation of 0.410 and verbally interpreted as highly acceptable.

The table proves that the taste was highly acceptable as reflected by the average mean of 4.41 with the standard deviation of 0.454.

The table indicated that the Ashitaba and Bitter Gourd Flavored Pasta has the firmness of the finish product would reflect the quality of the same due to structure as reflected by the mean of 4.41 with the standard deviation of 0.467 and verbally interpreted as highly acceptable. It reveals the quality of Ashitaba Leaf and Bitter Gourd Flavored Pasta has exact texture of pasta products.

Table 2. Showed the mean level of Ashitaba Leaf and Bitter Gourd Flavored Pasta as rated by parents based on the different sensory qualities such as appearance, taste, texture and nutritive content.

CRITERIA	X	SD	VI
Appearance			
1.The appearance of ashitaba and bitter gourd flavored pasta is presentable to the consumer.	4.70	0.458	HA
2. The finished product achieved the shaped and color of pasta that made it more interesting.	4.70	0.458	HA
Average mean	4.70	0.458	HA
Taste			
1.The product recognized the flavor of ashitaba as you chew it.	4.80	0.400	HA
2. The finish product had improved taste due to ashitaba and bitter gourd.	4.50	0.500	HA
Average mean	4.65	0.450	HA
Texture			
1.The firmness of the finish product would reflect the quality of the same due to structure.	4.80	0.400	HA
2. The finish product has exact texture of pasta products.	4.60	0.490	HA
Average mean	4.70	0.445	HA
Overall average mean	4.68	0.451	HA

Table 2. Indicated that the appearance of Ashitaba and Bitter gourd flavored pasta is presentable to the consumer as reflected by the mean of 4.70 with the standard deviation of 0.458 and verbally interpreted as highly acceptable. It revealed that the finished product achieved the shape and color of pasta that made it more interesting is the same to the typical pasta.

The table showed that the product recognized the flavor of pasta as you chew it and improved the taste due to ashitaba leaf and bitter gourd flavor as reflected by mean of 4.65 with the standard deviation of 0.450 and verbally interpreted as highly acceptable.

The table indicated that the ashitaba and bitter gourd flavored pasta has the firmness of the finish product would reflect the quality of the same due to structure as reflected by the mean of 4.80 with the standard deviation of 0.400 and verbally interpreted as highly acceptable. It reveals that the quality of ashitaba and bitter gourd flavored pasta has exact texture of pasta products as reflected by the 4.60 with the standard deviation of 0.490 and verbally interpreted as highly acceptable.

Table 3. Showed the mean level of Ashitaba Leaf and Bitter Gourd Flavored Pasta as rated by the High School Students based on the different sensory qualities such as appearance, taste, texture and nutritive content. The table also shows the mean, standard deviation and the verbal interpretation.

CRITERIA	X	SD	VI
Appearance			
1.The appearance of ashitaba and bitter gourd flavored pasta is presentable to the consumer.	4.90	0.300	HA
2. The finished product achieved the shaped and color of pasta that made it more interesting.	4.70	0.458	HA
Average mean	4.80	0.379	HA
Taste			
1.The product recognized the flavor of ashitaba as you chew it.	4.90	0.300	HA
2. The finish product had improved taste due to ashitaba and bitter gourd.	4.90	0.300	HA
Average mean	4.90	0.300	HA
Texture			
1.The firmness of the finish product would reflect the quality of the same due to structure.	4.70	0.458	HA
2. The finish product has exact texture of pasta products.	4.70	0.458	HA
Average mean	4.70	0.458	HA
Overall average mean	4.80	0.379	HA

Table 3 indicated that the appearance of ashitaba and bitter gourd flavored pasta is presentable to the consumer as reflected by the mean of 4.90 with the standard deviation of 0.300 and verbally interpreted as highly acceptable. The table proves that the appearance was highly acceptable as reflected by the average mean of 4.80 with the standard deviation of 0.379.

The table showed that the product recognized the flavor of pasta as you chew it and improved the taste due to ashitaba and bitter gourd as reflected by the average mean of 4.90 with the standard deviation of 0.300 and verbally interpreted as highly acceptable.

The table indicated that the ashitaba and bitter gourd flavored pasta has firmness and exact texture of the finish product would reflect the quality of the same due to structure as reflected by the average mean of 4.70 with the standard deviation of 0.458 and verbally interpreted as highly acceptable.

Table 4. Significance Difference between the CTE Students and Parents on the Level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta

Types of Respondents	Mean X	Mean difference	Computed T-value	Critical T-value	Verbal Interpretation
CTE Students	4.44	0.24	2.000	2.045	Not significant
Parents	4.68				

p<0.05

Table showed the significant difference between CTE students and parents on the Acceptability of Ashitaba and Bitter Gourd Flavored Pasta. It can be seen from the table that the parents result has a greater mean which is 4.68 than the CTE students result is 4.44. It also resulted that the T-value is 2.000 which is less than the critical T-value of 2.045 at the level of significance and verbally interpreted as “not significant”.

Table 5. Significant Difference between the CTE Students and High School Students on the Level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta

Types of Respondents	Mean X	Mean difference	Computed T-value	Critical T-value	Verbal Interpretation
CTE Students	4.44	0.36	2.000	2.045	Not significant
High School Students	4.80				

p<0.05

Table showed the significant difference between CTE Students and High School Students on the Acceptability of Ashitaba and Bitter Gourd Flavored Pasta. It can be seen from the table that the high school students result has a greater mean which is 4.80 than the CTE students result is 4.44. It also resulted that the T-value is 2.000 which is less than the critical T-value of 2.045 at the level of significance and verbally interpreted as “not significant”.

CONCLUSIONS

The following conclusions were drawn from the findings:

1. The mean level of Acceptability of Ashitaba and Bitter Gourd Flavored Pasta as rated by the CTE Students, Parents and High School Students based on the different sensory qualities such as Appearance, Taste, Texture and Nutritive content were highly acceptable.
2. There is no significant difference on the rating given by CTE students, parents and High School Students on the Acceptability of Ashitaba and Bitter Gourd Flavored Pasta.

RECOMMENDATIONS

Based on the findings and conclusions of the study the following are recommended:

1. Improve the Nutritive Content to be able to prolong the shelf life of the finish products.
2. Can use a modern technology in packaging materials like using vacuum.
3. Teachers in Home Economics and Food may include the new recipes of Ashitaba and Bitter Gourd Flavored Pasta as part of their lessons.
4. Further research should be conducted utilizing other ingredients in making pasta.

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