ADDITIONAL HERBAL ELEMENTS IN A FUNCTIONAL DRINKS TO RISE LEVEL OF INTEREST TO THE BEVERAGES

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ABSTRACT

Functional drinks are nutrients or non-nutrients beverages that have contribution to the health. Functional drinks can be made from herbal plants, the authors take samples processed functional drinks consist of ginger, lime and mint leaves as an additional herbal element. Addition of herbal mint leaves element which are known to benefit mint leaves (Mentha Cordifolia) has a fragrant flavor and refreshing cold taste. Fragrant flavor and cool mint leaves caused by the oil content asiri form of menthol oil. Mint leaves are believed to keep stamina, relieve headaches, prevent fever, give antioxidant. The goal of this research is to find out the respondent's tendency to color, taste, flavor and average of panelist acceptance of the best functional drink consisting of ginger and lime with addition of herbal elements of mint leaf into it. This research was classified as experimental research with 3 treatments of 10 mint leaves (X1), 20 sheets (X2), 30 sheets (X3) of mint leaves. Data collection using observation method through hedonic test. the sample was assessed by 30 respondents. Data from hedonic test results were analyzed by Friedman test. If there is a difference in power received will be continued with the Wilcoxon Signed Rank Test. The results showed: 1. that the functional drink of lime ginger with the addition of herb elements of mint leaves of 10, 20 and 30 sheets had an effect on taste and favorite level, but did not give real effect to the color and aroma. 2. Functional drink of lime ginger with the addition of 10 mint, 20 and 30 sheets of best herbal ingredients based on the average number of panelist receive power is X1 with 10 mint leaves added.

Keywords: herbal elements, functional drinks, favorite level.

1. INTRODUCTION
1.1 Background

Background Functional drinks are a type of food or food product that has functional characteristics so that it plays a role in the protection or prevention of disease, improvement of optimal body function performance, and slow the aging process (Karyadi, 2000 cit Roni, 2008). Functional drinks are beverages that contain elements of nutrients or non-nutrients and if consumed can provide a positive effect on the health of the body. Functional drinks can be made from herbs. Processing Functional drinks consisting of ginger, lime and mint leaves as an additional element of herbal where the three elements of the herb has some positive criteria for the health of the body.

Traditionally ginger extract is used among others as headache medicine, cough medicine, colds, to treat disease of the digestive tract, stimulants, diuretics, rheumatism, pain relief, anti-nausea and motion sickness, carminative (removing gas from the stomach) and as an external medicine to treat itching bitten insects, sprains, swelling, and bruises (Shukla, 2007).

Lime fruit efficacious as cough medicine, febrifuge, and drug aches. In addition, the fruit of lime is also useful as a drug dysentery, constipation, hemorrhoid, irregular menstruation, diphtheria, acne, headache / vertigo, hoarseness cough, increase appetite, prevent hair loss, dandruff, flu / fever, stop smoking , tonsillitis, anyanganyangan disease, nosebleeds, inflammation of the nose (sap), and so forth (Budipratama et al., 2011). Of the two elements of this herb has important benefits for the health of the human body.

Benefits Leaves mint (Mentha Cordifolia) has a fragrant aroma and refreshing cold taste. Fragrant aroma and cool mint leaves caused the oil content asiri form of menthol oil. This leaf contains vitamin C, provitamin A, phosphorus, iron, calcium and potassium. Fiber, chlorophyll and phytonutrients are also contained in many mint leaves. Mint leaves are believed to restore stamina, relieve headaches, prevent fever, have antioxidant properties to prevent cancer and maintain eye health. Mint leaves can also increase skin moisture, treat acne, remove dead cells, smooth

the skin, and vitamin A is contained in the mint leaves are able to control excess oil (Puspaningtyas, D. 2014)

Then by knowing the benefits of mint leaves above then the authors add mint leaves as elements of herbal plant into the processed functional drinks consisting of ginger, lime to add quality from functional drinks as a beverage that is beneficial to the health of the body.

The three elements of the above mentioned herbs are very easy to obtain in the market is also not a herbal element which depends on season and it is very affordable. So the author tries to make functional drinks can be consumed at any time to maintain the health of the human body. From the description above, the authors raised the title "The addition of elements of herbs in functional drinks to increase the level of fondness to the beverages"

2. RESEARCH METHODS
2.1 Experimental Design

The experimental design used in this study is single variable design, ie all the main ingredients of functional drinks remain the same except the treatment to be compared to its effect. The treatment provided is the addition of 10, 20 and 30 mint leaves on each recipe of functional drink of ginger and lime. The experimental design is presented in Table 1 and the prescription research formulation is presented in Table 2.

Table 1. Experimental Design

(X) Variabel Bebas	(Y) Variabel Terikat Uji Hedonik			
	Ya	Yb	Yc	Yd

	Ya	Yb	Yc	Yd
X1				
X2				
X3				

Information :
Free Variable (X):
X1: Adding 10 mint leaves to a functional drink recipe
X2: Adding 20 mint leaves to a functional drink recipe
X3: Add 30 mint leaves to a functional drink recipe

Bound Variable (Y):
Yes: The level of preference for color

Yb: Level of preference for aroma
Yc: Level of preference for taste
Yd: Passion level

Score:
1: Don't like it
2: Less likes
3: Ordinary
4: Like it
5: Very like

Calculation: Total value
_____
Number of panelists

a. Color Parameters
   Sample Code:
   X1: 4,033
   X2: 3,867
   X3: 3,867
b. Aroma parameter
   Sample Code:
   X1: 3.9
   X2: 3,933
   X3: 3,767
c. Taste parameter
   Sample Code:
   X1: 4.2
   X2: 3.067
   X3: 3,267
d. Passion Level
   Parameters   Sample Code:
   X1: 4.4
   X2: 3.3
   X3: 3,267

2.2 JJ Mint Functional Drinking Procedure

Preparation of raw materials ie ginger, lime and mint leaves, they must be washed and cleaned, prepare sugar and mineral water.

Cook mineral water until boiling. Then sprinkle the ginger, squeeze the lime and pick the mint leaves then crushed. After boiling mineral water enter the rock sugar and stir until dissolved then put all the ingredients into it.

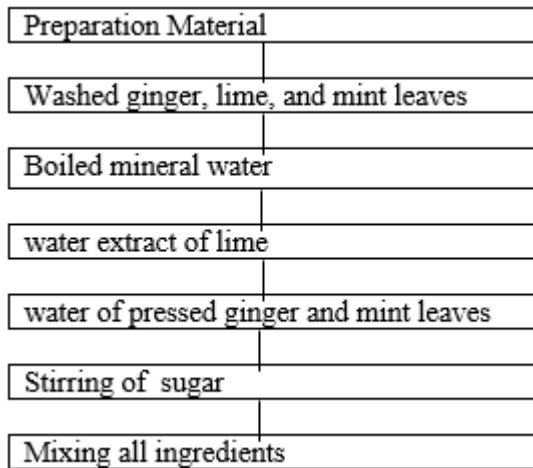The scheme of JJ Mint functional drinking procedure can be seen in Figure 1.

Figure 1. Functional Drinking Procedure JJ MINT

Data collection

In this study using the method of observation through hedonic test (favorite test). Hedonic test is a widely used test to measure the level of fondness for a product. This level of fondness is called the hedonic scale for example very like, like, rather like, a little dislike, do not like, and others. Hedonic scale can be stretched or collapsed according to the desired scale range. In its data analysis, the hedonic scale is transformed into a numerical scale with an ascending number according to the preferred level (it can be 5,7 or 9 favor levels). With this data can be done statistical analysis (Ebook Food, 2006) .The favorite test or hedonic is done to select one product among other products directly. The favorite test asks the panelist to choose a preferred level of preferences. The panelists used were trained panelists of 30 Surabaya Polytechnic NSC students. The criterion of hedonic score is very fond (5), likes (4), ordinary (3), dislikes (2), dislikes (1). The hedonic test in this study includes color, aroma, taste and favorite level. This test aims to determine the level of panelist's preference for the composition of mint leaves added to the functional drink of lime ginger.

Data analysis

Statistical analysis using SPSS version 16.0. Analysis of hedonic test using Friedman test. If there is a difference in acceptability (color, flavor, taste and preferred level) will be continued with the Wilcoxon Signed Rank Test. The statistical test was performed with 95% trusted level.

3.   RESULTS AND DISCUSSION

Table 3. Distribution of Favorite Levels for JJ Mint drinks

Characteristics	Average Acceptance Power Score			Friedman test
	X1	X2	X3	
Color	4,03	3,86	3,86	0,645
Aroma	3,90	3,93	3,76	0,580
Taste	4,20	3,06	3,26	0,000
Levels of Pleasure	4,40	3,30	3,26	0,000
Total	16,53	14,15	14,14	

Information:
The letter beside the number indicates the difference if the letter is different, based on friedman test at a = 0,05

X1: Add 10 mint leaves on functional drink recipe
X2: Addition of 20 mint leaves on functional drink recipe
X3: Addition of 30 mint leaves on functional drink recipe

The panelist's acceptance of the JJ Mint functional drinks presented in Table 3. From these data indicates that the acceptance of color, flavor, taste and favorability of JJ Mint functional drinks is in the usual range (neutral) to likes. The acceptance of the JJ Mint functional beverage color is the greatest in the range of likes. While the lowest received power is the taste of drinks JJ Mint.

Color

The result of friedman test on the acceptance of color obtained P (value)> a = 0.05 that is 0.645 shows no effect of JJ functional beverage color on the addition of mint leaves as much as 10, 20 and 30 pieces. Functional drinks Citrus Ginger with the addition of herb elements of mint leaves as much as 10 pieces have an interesting reddish color. The average score on the color preferences on the JJ Mint functional drinks ranged from 3.86 to 4.03 (likes) and the highest score on JJ functional drinks with the addition of 10 mint leaves of mint leaves (X1)

Flavor

The result of friedman test on the flavor received value of P (value)> a = 0,05 which is 0,580 indicate no effect of aroma on functional drink of lime ginger with addition of 10, 20, 30 mint leaves. Functional drinks Ginger Lime with the addition of herbal elements of mint leaves has a dominant ginger flavor. The average score of the preferred scores on the functional drinks of Lime Ginger with the herbal addition of herbal elements of mint leaves ranged from 3.76 to 3.93 (like) and the highest score on functional drinks of Lime Ginger by adding 20 mint leaves of herbal leaves (X2).

Taste

The result of friedman test to taste power obtained by P (value) <a = 0,05 0.000 indicates that there is influence of flavor on functional drink of lime ginger with addition of 10 mint leaves of mint leaves and 30 sheets. To know the real difference to the taste of functional drinks Ginger Lime with the addition of herbal elements of mint leaves followed by Wilcoxon Signed Rank Test.

Wilcoxon Signed rank Test results show that there is a significant difference of acceptability between X1 and X2 products, p = 0,000 (p <0,05). Differences in power are also seen between X1 and X3 products, p = 0.06 (p <0.05). Differences in power are also seen between X2 and X3 products, p = 0,558 (p <0.05). Typical mint leaf flavor with dominant flavor is the mint flavor in which the average score of taste preferences on taste in functional drinks of Lime Ginger with the addition of herbal elements of mint leaves ranges from 3.06 to 4.20 (likes) and the highest score on functional drinks Ginger Lime added 10 mint leaves (X1).

Levels of pleasure

The result of friedman test on acceptance of favorite level obtained P (value) <a = 0,05 0.000 indicates that there is influence of addition of herb element of mint leaves to the level of favorite to functional drink of lime ginger with addition of herb element of mint leaves as much as 10, 20 and 30 sheet. To know the real difference to the level of favorite functional drinks of Lime Ginger with the addition of herbal elements of mint leaves followed by Wilcoxon Signed Rank Test.

Wilcoxon Signed Rank Test results indicate that there is a difference of acceptability between X1 and

X2, p = 0,001 (p <0,05). A significant difference, also seen between X1 and X3 products, was p = 0,000 (p <0.05). Differences in power gain are also seen in product X2 with X3 where the value p = 0.696 ((p <0.05). The average rating of the average score on the functional drinks of lime juice with the addition of herbal elements of mint leaves ranged from 3.26 to 4 , 40 (like) and the highest score on the favorite level on functional drinks of Lime Ginger with the addition of 10 mint leaves (X1).

4. CONCLUDE AND ADVICE

Conclusion

Based on the results of hedonic test data analysis on functional drinks of Lime Ginger with the addition of herbal elements of 10, 20 and 30 mint leaves of, can be summarized as follows:

1. The results showed that the functional drink of lime ginger with the addition of hint elements of 10, 20 and 30 pieces mint leaves had an effect on taste and favorite level, but did not give a significant effect on the color and aroma.
2. Functional drink of lime ginger with the addition of 10 mint, 20 and 30 sheets of best herbal ingredients based on the average number of panelist receive power is X1 of 10 mint leaves added.

Suggestion

1. The addition of mint leaf herbs on functional drinks of lime ginger can be socialized to the public in order to increase the benefits of functional drinks as a beverage for health.
2. This research can be used as a reference in developing further research related to the improvement of benefits on other functional beverages.

5. REFERENCES

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