



Some Qualities of Locally Prepared Drink Sold in Amai, Delta State

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Abstract

Food is essential ingredients for sustenance of life either from plants or animals. Its demand can therefore, not be overemphasized. In Countries like Nigeria, people depends mostly on indigenous technology for food preparations especially food of plant origin. The study was carried out to determine the organoleptic qualities of kunu drink sold in Amai, Delta State. The pH, texture, smell and color change was determined by standard method recommended by Association of analytical chemistry (AOAC). The result revealed an increase in pH value of kunu sample at 24h and 72h (3.54 ± 0.45^{ab} to 4.72 ± 1.21^c) and a change in color from (gray to brown). The result further showed a change in texture, smell (from no smell to bad smell). The study therefore revealed the significance of time as an essential factor for the viability of kunu drinks sold in Amai, Delta State.

Keywords: Kunu; Smell; Texture and pH

Introduction

Food is essential ingredients for sustenance of life either from plants or animals. Its demand can therefore, not be overemphasized. In Countries like Nigeria, people depends mostly on indigenous technology for food preparations especially food of plant origin. The study was carried out to determine the organoleptic qualities of kunu drink sold in Amai, Delta State.

Materials and Methods

Study area

Amai is a rural community located in the axis of Ndokwa L.G.A in Delta State. The market is surrounded with a nucleated settlement where young and old come to buy and sell foodstuffs all kind including kunu.

Sample collection

Sampling of locally prepared Kunu drinks from Amai market was done randomly ; Kunu drinks were purchased at different points in Amai market. Samples were taken to the laboratory for analysis.

Sensory evaluation

The 9-point Hedonic scale assessment as described by Larmond (1977) was used. The panelists were laboratory staff, they were selected based on their familiarity with Kunu. The panelists were asked to score the kunu drinks in terms of degree of liking to taste, colour, texture and aroma/flavour. The kunu drinks samples were served in clean, transparent glass cups at room temperature 25°C. The panelists rinsed their mouth two to three times in between tasting of the samples.

Results and Discussion

Samples	24 hours	48 hours	72 hours
C+SL+Li	3.54 ± 0.45 ^{ab}	3.21 ± 0.47 ^a	2.98 ± 0.19 ^a
C+SL+Le	3.78 ± 0.62 ^{ab}	3.32 ± 0.37 ^a	3.01 ± 0.33 ^a
C+Le+Li	3.32 ± 0.61 ^a	3.00 ± 0.53 ^a	2.81 ± 0.41 ^a
C+SL+Li+Le	3.36 ± 0.49 ^a	3.22 ± 0.39 ^a	3.03 ± 0.27 ^a
C+Le	3.67 ± 0.63 ^{ab}	3.45 ± 0.48 ^a	3.28 ± 0.72 ^{ab}
C+Li	3.44 ± 0.54 ^a	3.31 ± 0.56 ^a	3.19 ± 0.54 ^{ab}
C+SL	4.01 ± 0.81 ^b	3.82 ± 0.70 ^{ab}	3.46 ± 0.62 ^b
Market product	5.42 ± 1.23 ^c	5.14 ± 1.19 ^c	4.72 ± 1.21 ^c
Control	4.27 ± 0.87 ^b	4.03 ± 0.74 ^b	3.72 ± 0.79 ^b

Table 1: pH value of kunu samples stored for 72 hours using various organic preservatives.

Table 1 shows the pH value of kunu samples stored for 72 hours using various preservatives. The pH value of the control sample and market product was 4.27 ± 0.87 and 5.42 ± 1.23 at 24h. The results shows that the pH of control sample and market product was 3.72 ± 0.79 and 4.72 ± 1.21 at 72 hrs, compared to kunu mixture with either scent leave, lime or lemon juice which was 3.46 ± 0.62, 3.19 ± 0.54 and 3.28 ± 0.72 at 72 hrs, kunu mixture with lime and lemon juice was 2.81 ± 0.41 at 72 hrs, compared to the mixture with scent leave, lime and lemon juice was 3.03 ± 0.27 at 72 hrs respectively. These result is also in line with Makut., *et al.* (2013) who reported a decrease in pH after adding plant base extract to kunu sample as a preservative, the pH value reduced from 4.89 - 3.15. Ikpoh., *et al.* (2013) reported that the pH value of a food limits the range of organisms which it can support.

Samples	24 hours	48 hours	72 hours
C+SL+Li	Gray	Light gray	Gray
C+SL+Le	Faded gray	Gray	Ash
C+Le+Li	Faded yellow	Light ash	Ash
C+SL+Li+Le	Light gray	Gray	Dark gray
C+Le	White - yellow	Light gray	Gray
C+Li	Creamy	Light ash	Ash
C+SL	Pale green	Gray	Dark gray
Market product	Creamy	Dark ash	Brown
Control	Creamy	Ash	Dark ash

Table 2: Colour of kunu samples stored for 72 hours using various organic preservatives.

Table 2 shows the colouration of kunu samples stored for 72 hours using various preservatives. At 24hrs the colour for the control and market product was creamy compared to after 72hrs which turned into dark ash and brown coloration. The colouration of kunu mixture with either scent leave, lime or lemon juice was pale green, creamy and white - yellow at 24hrs. Compared to their final colour after 72hrs which was dark gray, ash and gray. Also the colour of kunu mixture with lime and lemon juice at 24hrs and after 72hrs was faded yellow and ash, compared to the colour of the mixture with scent leave, lime and lemon juice at 24hrs and after 72hrs which was light gray and dark gray respectively. The results further shows that the brown colouration observed in the market product after 72hrs indicates that the product is not suitable for consumption. The results was in consonance with previous report by Ikpoh., *et al.* (2013) that kunu product after 72h becomes unfit for consumption in Addo Ekiti.

Samples	24 hours	48 hours	72 hours
C+SL+Li	Smooth	Smooth	Smooth
C+SL+Le	Smooth	Smooth	Smooth
C+Le+Li	Smooth	Smooth	Smooth
C+SL+Li+Le	Smooth	Smooth	Smooth
C+Le	Smooth	Smooth	Smooth
C+Li	Smooth	Smooth	Smooth
C+SL	Smooth	Smooth	Smooth
Market product	Smooth	Small particles present	Foamy white particles present
Control	Smooth	Smooth	White particles present

Table 3: Texture of kunu samples stored for 72 hours using various organic preservatives.

Table 3 shows the texture of kunu samples stored for 72 hours using various preservatives. At 24hrs the texture for the control and market product was smooth compared to after 72hrs, the market product became foamy and presented white particles for both control and market samples. The results further shows that of kunu mixture with either scent leave, lime, lemon or combination of two or more preservatives was smooth within 24hrs and after 72hrs respectively. The results were in line with results of [1] in kano who concluded that texture of kunu after 72hr was foamy.

Samples	24 hours	48 hours	72 hours
C+SL+Li	Mild smell	Mild smell	No smell
C+SL+Le	Strong smell	Mild smell	No smell
C+Le+Li	Mild smell	Mild smell	No smell
C+SL+Li+Le	Strong smell	Mild smell	No smell
C+Le	No smell	No smell	No smell
C+Li	No smell	No smell	No smell
C+SL	No smell	No smell	No smell
Market product	No smell	No smell	Sour smell
Control	No smell	No smell	Sour smell

Table 4: Characteristics of smell of kunu samples stored for 72 hours using various organic preservatives.

Table 4 shows the characteristics of smell of kunu samples stored for 72 hours using various preservatives. At 24hrs the characteristics of smell for the control and market product has no smell compared to after 72hrs, the market product and the control samples began to present sour smell. The mixture of kunu with two or more preservatives showed mild and strong at 24hrs, while at 72hrs showed no smell characteristics. The results further shows that of kunu mixture with either scent leave, lime or lemon presented no smell within 24hrs and after 72hrs the smell was bad. The result is in consonance with the previous report of [1] who concluded that the smell of kunu was determined by time in Kano metropolis [2-17].

Conclusion

The present study has demonstrated the potential of plant extracts. The improved quality of kunu drink with a combination of either scent leave extract, lime or lemon juice, has shown to enhance the organoleptic properties of kunu drink. Hence more research should focus on the shelve stability and optimization of storage conditions of kunu drink, now that there is an emerging and increasing interest in the drink.

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