

## CONSUMER PREFERENCE FOR YOGHURT ATTRIBUTES IN KADUNA METROPOLIS

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### ABSTRACT

A two phased survey was conducted firstly to identify and determine packaged yoghurt brands, consumer preference for the brands and ascertain quality attributes important to consumers in Kaduna metropolis. In phase two of the study yoghurt was prepared with varying levels of the identified attributes and consumer preferences in terms of the identified attributes (colour, thickness, sweetness and flavor) were determined. The survey identified about twenty commercial yoghurt brands, the first five commands more than 87% of consumer preference. Consumers preferred moderately thick and sweetened, strawberry flavored white colored yoghurt. The Sensory evaluation validated the consumer survey in that white colored, strawberry flavored yoghurt was most preferred, indicating a possible midpoint bias. The least preferred yoghurt color was yellow.

### INTRODUCTION

Yoghurt is a custard-like dairy product produced by fermenting pasteurized milk using lactic acid bacterial culture. It is commonly sweetened and may be flavored using banana, apple, strawberry, vanilla, chocolate and fruit juice, other additives used in yoghurt manufacture includes sugar, food color and preservatives. Yoghurt's popularity as a nutritious food item, especially among the weight-conscious people, has grown tremendously in recent times and more people are beginning to appreciate its nutritional value. The local market for yoghurt is vast and under-supplied, particularly in urban and peri-urban areas. The quality of yoghurt in local markets varies from one location to another, because there are a few good quality NAFDAC-approved producers. Poor quality milk, unhygienic practices associated with the process involved and the use of "wild type" of starter culture give rise to poor grade yoghurt. (Okpalugo *et al.*, 2002). It is therefore important to carry out an investigation on the characteristics of the yogurt sold in local markets to ascertain their quality in relation to consumer preference (Joseph *et al.*, 2011). The specific objectives of this study are as follows: i) to identify and rank common brands of yoghurt consumed in Kaduna metropolis; ii) to determine yoghurt attributes and factors of preference important to the consumer; iii) to identify factors responsible for poor quality yoghurt.

### MATERIALS AND METHODS

**The Study Area:** The study was conducted in Kaduna metropolis comprising three local government areas (Kaduna south, Kaduna north and Igabi). The state lies between latitudes 10° 21' and 10° 33' North and longitudes 7° 45' and 7° 75'

East. This study comprised of two phases a field survey and a sensory evaluation phase.

**Field survey:** Eight areas within Kaduna metropolis were randomly selected for the field survey. These include; the campus of the College of Agriculture and Animal Science A.B.U, Mando Kaduna, Kawo, Central Market, Mando town, Tudun wada, Television/Sabon tasha, Unguwan Kaji and Rigachikun town. 200 questionnaires, (with a minimum of 20 to an area) were administered to respondents across the selected areas using convenience sampling technique. Respondents were asked to name packaged yoghurt brands known to them, rate them according to preference, name yoghurt quality attributes important to them, rate them and finally identify problems associated with yoghurt.

**Sensory Evaluation:** Plain yoghurt was produced according to procedures outlined by Nam, (2008). The yoghurt was divided into four parts and used to evaluate consumer preferences for colour (Yellow, Pink and White), sweetness (Extreme, Moderate and Less sweet), flavor (Pineapple, Strawberry and Plain) and thickness (Very, Moderate and Thin). The yoghurt samples were subjected to sensory evaluation using three a point scale. A Non-smoker panel of 50 panelists that comprise of students and staff members of College of Agriculture and Animal Science Ahmadu Bello University, Kaduna was selected to taste and rank between yoghurt samples for the attributes of flavour, colour, sweetness and thickness. Data obtained from both phases of the study were analysed using descriptive statistics.

### RESULTS AND DISCUSSION

**Survey:** The survey identified 20 different brands of commercially produced yoghurts in the metropolis (Table 1). Out of these, 5 were found to

be the most popular commanding about 87.3% of consumer preference San yoghurt was the most preferred brand, with 48% of consumers preferring it. This tallied with the findings of Sani (2009) that of the 70 brands of yoghurt identified in Kano metropolis San yoghurt was among the 10 most patronized. This could be due to the higher number of yoghurt brands sold in Kano metropolis (70) as compared to the 20 available in Kaduna metropolis. The survey results (Table 2) on perceived preferences for yoghurt attributes showed that 53.2% of respondents preferred moderately sweet, while 31.3% preferred very sweet. This shows that moderately sweetened yoghurt is the most preferred by the consumer. Strawberry (32.6%) was the most preferred flavor followed by pineapple (28.7%), while orange has 13.9%. In terms of color the most preferred was white (88%), while pink and yellow were equally preferred (5.5%). The least was red, with only 1% of the respondents preferring it. The overwhelming preference for white colored yoghurt might have to do with familiarity. Plain

#### CONCLUSIONS

It can be concluded from this study that the thickness, sweetness, flavor, coldness and color are important quality attributes of yoghurt but taste appeared to be the most important. The study also showed that white colored yoghurt is overwhelmingly preferred by consumers. Results of the preference survey and formal sensory evaluation are in agreement.

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Table 1: Quality attributes of Yoghurt and their perceived preference levels

| Important Quality Attributes  | Frequency | Preference |
|-------------------------------|-----------|------------|
| Thickness                     | 126.00    | 68.50      |
| Sweetness                     | 49.00     | 26.60      |
| Flavour                       | 4.00      | 2.20       |
| Coldness                      | 3.00      | 1.60       |
| Colour                        | 2.00      | 1.10       |
| Total                         | 184.00    | 100.00     |
| Thickness Preference:         |           |            |
| Very thick                    | 79.00     | 40.30      |
| Moderately thick              | 96.00     | 49.00      |
| Less thick                    | 17.00     | 8.70       |
| Thin                          | 4.00      | 2.70       |
| Total                         | 196.00    | 100.00     |
| Sweetness Preference:         |           |            |
| Very sweet                    | 63.00     | 31.30      |
| Moderately sweet              | 107.00    | 53.20      |
| Less sweet                    | 6.00      | 3.00       |
| Not sweet                     | 24.00     | 12.40      |
| Total                         | 200.00    | 100.00     |
| Flavour Preference:           |           |            |
| Strawberry                    | 66.00     | 32.60      |
| Apple                         | 58.00     | 28.70      |
| Orange                        | 28.00     | 13.90      |
| No flavour                    | 48.00     | 24.00      |
| Total                         | 200.00    | 100.00     |
| Cold Preference:              |           |            |
| Very cold                     | 120.00    | 59.70      |
| Moderately cold               | 77.00     | 38.80      |
| Not important                 | 2.00      | 0.90       |
| Don't know                    | 1.00      | 0.50       |
| Total                         | 200.00    | 100.00     |
| Colour Preference:            |           |            |
| Pink                          | 11.00     | 5.50       |
| Yellow                        | 11.00     | 5.50       |
| White                         | 176.00    | 88.00      |
| Red                           | 2.00      | 1.00       |
| Total                         | 200.00    | 100.00     |
| Yohurt Quantity Preference:   |           |            |
| 20cl                          | 43.00     | 15.20      |
| 30cl                          | 65.00     | 21.80      |
| 50cl                          | 57.00     | 28.90      |
| 1 litre                       | 30.00     | 32.10      |
| Total                         | 197.00    | 100.00     |
| Yoghurt Packaging Preference: |           |            |
| Polythene bags                | 17.00     | 8.60       |
| Small plastic bottles         | 121.00    | 61.10      |
| Large plastic bottles         | 50.00     | 25.30      |
| Large bottle                  | 10.00     | 5.00       |
| Total                         | 198.00    | 100.00     |

**Table 2: Preferences for quality attributes of Yoghurt from sensory evaluation**

| Quality Attribute | Total score | percentage | Rank            |
|-------------------|-------------|------------|-----------------|
| <b>Colour</b>     |             |            |                 |
| Yellow            | 81          | 30%        | 3 <sup>rd</sup> |
| White             | 105         | 38.8%      | 1 <sup>st</sup> |
| Pink              | 84          | 31.1%      | 2 <sup>nd</sup> |
| <b>Thickness:</b> |             |            |                 |
| Very thick        | 90          | 29.8%      | 2 <sup>nd</sup> |
| Moderately thick  | 147         | 48.7%      | 1 <sup>st</sup> |
| Thin              | 65          | 21.5%      | 3 <sup>rd</sup> |
| <b>Sweetness:</b> |             |            |                 |
| Very sweet        | 106         | 35.3%      | 2 <sup>nd</sup> |
| Moderately sweet  | 122         | 40.7%      | 1 <sup>st</sup> |
| Less sweet        | 72          | 24%        | 3 <sup>rd</sup> |
| <b>Flavour:</b>   |             |            |                 |
| Strawberry        | 121         | 40.3%      | 1 <sup>st</sup> |
| Pineapple         | 82          | 27.3%      | 3 <sup>rd</sup> |
| No flavour        | 97          | 32.3%      | 2 <sup>nd</sup> |