INTRODUCTION
Finger millet (Eleusine coracana) is an important staple food because of its excellent storage properties, and nutritive value, resistance to disease and tolerance to soil moisture stress. The aim of this study is to determine the nutritional composition of cookies (Biscuit) produced from combination of finger millet and wheat flour and its sensory properties. Biscuit was produced from the formulated ratios (W:F 100, FM:100, W:F 95:5, W:F 90:10 and W:F 80:20) of wheat and finger millet respectively. Proximate composition and sensory evaluation were carried out using standard methods. The results of proximate composition for ration W:F 95:5 shows significant different compare to other ratios and individual flours, additionally the same product shows highly acceptable by the respondent for its taste, flavor and texture than cookies of other composition. Therefore it can be concluded that the product from formulated ratio WF: FM 95%:5% was best cookies highly acceptable. However consumption of such products are highly encouraged and less course effective.

Keywords: Cookies, Finger millet, Proximate, Wheat Flour

MATERIAL AND METHODS
Sample Collection
Finger millet samples, wheat flour and other materials used were purchased from Sabon Gari market Kano-Nigeria.

Sample preparation
The samples were prepared by mixing the wheat and Finger millet flour as presented in table 1 below.
The finger millet flour was produced according to the method of Ndife et al., (2011). Briefly; the sorghum grains were sorted and cleaned to remove extraneous materials and then weighed. This was followed by washing of the grains and soaking in water for six hour to remove particles. After soaking, the grains were sun dried and thereafter milled and allowed to pass through 60 µm mesh size to obtain fine flour.

Preparation of Finger Millet Cookies (Biscuit)
Finger millet cookies (Biscuit) was made by adding sugar and butter in a bowl and kneading is done to make it into smooth and fine paste. Generally kneading and mixing is done in blender equipment or manually. Then finger millet flour and wheat flour as described in Table 1 and blend ratio was taken in a bowl and added to blender for blending and kneading purpose. After blending, baking powder was added along with initial blended butter and sugar paste. After fine mixing of the composition it was again added with cardamom for flavor and aroma purpose. The flour blend with water or milk and made into shape in the form of dough. Then dough was made into thin flattened sheets by spreading. The flattened dough was cut into required shapes like star, round and other shapes with help of mold. The mold shaped dough were arranged on tray and kept in micro oven at 120°C for 20 min for baking purpose. After baking, it was cooled and packed. The sequential steps involved in the preparation of cookies are given below.

Moisture Content
Moisture content was determined according to the method described by AOAC, (2004).

Fat Content
Fat content was determined according to the method described by AOAC, (2004).

Protein Content
Protein content was determined according to the method described by AOAC, (2004).

Crude Fiber Content
Crude fiber content was determined according to the method described by AOAC, (2004).

Carbohydrate content of the flours was determined using the difference formula described by (Hadiniami et al., 1993).

The Energy Value
The energy value of all samples was calculated as reported by MAFF, (1981).

The Sensory Evaluation
Sensory evaluation was carried out using a 5-point hedonic scale. 10 semi trained panelist from the department of biochemistry, Bayero University Kano, were used. The 5-point hedonic scale ranged from like a lot (5) to dislike a lot (1). The sample was presented in identical coded containers. Each sample evaluated for Appearance, Aroma, Taste, and Texture. Samples were rated alongside the control sample (100% wheat flour Biscuit).

STATISTICAL ANALYSIS
The results obtained were analyzed using one way Analysis of Variance (ANOVA). Mean were separated using multiple range Test. Significance difference accepted at P<0.05 using statistical product for service solution (SPSS) version 20.

Table 1: Proportion of finger millet and wheat flour

<table>
<thead>
<tr>
<th>SAMPLES</th>
<th>COMPONENTS</th>
<th>BLENDING RATIO (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>Wheat flour</td>
<td>100</td>
</tr>
<tr>
<td>F</td>
<td>Finger millet flour</td>
<td>100</td>
</tr>
<tr>
<td>W-F</td>
<td>Wheat:Finger millet</td>
<td>95:5</td>
</tr>
<tr>
<td>W-F</td>
<td>Wheat:Finger millet</td>
<td>90:10</td>
</tr>
<tr>
<td>W-F</td>
<td>Wheat:Finger millet</td>
<td>80:20</td>
</tr>
</tbody>
</table>

Processing of Finger millet flour
The finger millet flour was produced according to the method of Ndife et al., (2011). Briefly; the sorghum grains were sorted and cleaned to remove extraneous materials and then weighed. This was followed by washing of the grains and soaking in water for six hour to remove particles. After soaking, the grains were sun dried and thereafter milled and allowed to pass through 60 µm mesh size to obtain fine flour.

% RESULTS AND DISCUSSION
The Proximate analysis of the both the Finger millet and wheat flour were obtained and presented in Table 1. However, the Proximate analysis of cookies (biscuit) produced from finger millet and wheat flour were also presented in Table 2. The moisture content for samples in this study W:F 100 (10.53 ± 1.45%), FM 100 (14.13 ± 0.60%), W:F 95:5 (8.88 ± 1.07%), W:F 90:10 (10.17 ± 1.16%) and W:F 80:20 (10.31 ± 1.74%) obtained is higher when compared to values for produced Finger millet and wheat flour biscuit W:F 100 (3.53 ± 0.35%), FM 100 (4.65 ± 0.05%), W:F 95:5 (3.27 ± 0.06%), W:F 90:10 (3.44 ± 0.10%) and W:F 80:20 (3.67 ± 0.40%) however, this value is higher than those for some plant foods, rare cowpea (1.8%), cranberry bean (1.7%), Kersting’s groundnut (1.7%) (Aremu et al., 2006b). But in close agreement with those reported for Luffa cylindrica (5.8%), flutted pumpkin seeds (5.02%) (Olasofe et al., 1994). The low moisture content indicates a long shelf life for the cereal flour.

The rude fat W:F 100 (2.52 ± 1.00%), FM 100 (1.43 ± 0.21%), W:F 95:5 (1.87 ± 0.33%), W:F 90:10 (1.45 ± 0.25%) and W:F 80:20 (1.37 ± 0.33%) lower compared to values for produced Finger millet and wheat flour biscuit W:F 100 (7.81 ± 1.01%), FM 100 (7.08 ± 0.13%), W:F 95:5 (7.09 ± 0.12%), W:F 90:10 (6.97 ± 0.12%) and W:F 80:20 (7.07 ± 0.29%) is higher when compared with the reported values for bambara groundnut (4.15%) (Adeyeye and Adamu, 2005). However, the result indicated that Eleusine coracana cannot be grouped under oil rich plant foods (Aremu et al., 2006b).

The ash content W:F 100 (1.47 ± 0.31%), FM 100 (2.83 ± 0.25%), W:F 95:5 (2.20 ± 0.61%), W:F 90:10 (2.32 ± 0.69%) and W:F 80:20 (2.83 ± 0.25%) is lower compared to values for produced Finger millet and wheat flour biscuit W:F 100 (3.68 ± 0.10%), FM 100 (4.70 ± 0.21%), W:F 95:5 (4.02 ± 0.03%), W:F 90:10 (4.40 ± 0.17%) and W:F 80:20 (5.04 ± 0.05%). It is however, slightly lower when compared with the reported values for varieties of some Nigerian underutilized legume flours such as Bambara groundnut (4.30 ± 0.13) Kersting’s groundnut (3.20 ± 0.05%) and cowpea (3.60 ± 0.02). This suggests that the finger millet flour could probably provide essential, valuable and useful minerals needed for good body development.

The crude protein content is W:F 100 (10.75 ± 0.78%), FM 100 (7.97 ± 0.67%), W:F 95:5 (10.52 ± 1.30%), W:F 90:10 (9.64 ± 1.22%) and W:F 80:20 (9.59 ± 1.03%) lower when compared to values for produced Finger millet and wheat flour biscuit W:F 100 (16.09 ± 0.09%), FM 100 (17.52 ± 0.45%), W:F 95:5 (17.23 ± 0.15%), W:F 90:10 (16.54 ± 0.05%) and W:F 80:20 (15.30 ± 0.17%) is lower when compared with those of protein rich foods such as soyabean, cowpeas, Kersting’s groundnut, pigeon peas, Bambara groundnut (Aremu et al., 2006b) and some soil seeds. Finger millet could therefore be used as an alternative source of protein in diets/protein supplement especially in nations like Nigeria where the majority of the populace live on starchy food and cereals.

The crude fibre W:F 100 (1.77 ± 0.80%), FM 100 (1.09 ± 0.37%), W:F 95:5 (1.89 ± 0.34%), W:F 90:10 (2.00 ± 0.06%) and W:F 80:20 (2.10 ± 0.19%) lower compared to values for produced Finger millet and wheat flour biscuit W:F 100 (3.91 ± 0.11%), FM 100 (5.52 ± 0.02%), W:F 95:5 (3.28 ± 0.13%), W:F 90:10 (3.51 ± 0.11%) and W:F 80:20 (3.80 ± 0.20%) is in close agreement with the values reported for Luffa cylindrica (2.5 ± 0.40) (Fagbemi and Oshodi, 1991), cowpea (2.4%) and gourd seed (2.8%) (Akinlayo et al., 2002), but lower than that reported for soya bean (4.28%).
This suggests that finger millet could provide additional dietary fibre in the diet.

The Carbohydrate content of W:F 100 (72.97 ± 1.46\%), FM 100 (72.97 ± 1.46\%), W:F 95:5 (74.44 ± 1.32\%), W:F 90:10 (74.42 ± 3.23\%) and W:F 80:20 (73.81 ± 3.34\%) compared to values for produced Finger millet and wheat flour biscuit W:F 100 (62.63 ± 0.07\%), W:F 95:5 (66.44 ± 0.11\%), W:F 90:10 (65.52 ± 0.25\%) and W:F 80:20 (65.07 ± 0.06\%) - (73.32 ± 0.23 kg/100g) is significantly higher than reported values for \textit{Luffa cylindrica} seeds (13.6\%), \textit{Gondera} spp. (0.3 ± 2.0), \textit{Onopordum} (50.6 ± 1.0) (Gyar and Ogbonna, 2006).

The Energy content of this study is presented W:F 100 (375.52 ± 3.04\%), FM 100 (352.95 ± 4.62\%), W:F 95:5 (394.53 ± 1.29\%), W:F 90:10 (385.34 ± 0.14\%) and W:F 80:20 (381.23 ± 0.64\%) slightly lower when compared to values for produced Finger millet and wheat flour biscuit W:F 100 (395.19 ± 0.61\%), FM 100 (374.17 ± 1.95\%), W:F 95:5 (394.53 ± 1.29\%), W:F 90:10 (385.34 ± 0.14\%) and W:F 80:20 (381.23 ± 0.64\%). This indicates that, it could serve as a good source of energy. The sensory evaluations of both the biscuit produced from finger millet and wheat flour were carried out, where Aroma, Taste, Appearance and Texture of both the two products were presented in Figure 1, 2, 3 and 4 respectively. A panel of semi-trained judges consisting of 10 members were given the extruded snack food samples for evaluation of organoleptic characteristics viz. appearance, colour, taste, texture. The average score recorded by judges was considered, presented, and discussed. The mean scores of sensory evaluation showed that all the extruded products prepared from composite flours were within the acceptable range, while the extruded product prepared from composite flour sample; W:F 100, FM 100, W:F 95:5, W:F 90:10 and W:F 80:20 was not significantly different (P < 0.05). W:F 100 = wheat and finger millet at 100\%, FM = finger millet at 100\%, W:F 95/5 = wheat at 95\% and finger millet at 5\%, W:F 90:10 = wheat at 90\% and finger millet at 10\%, W:F 80:20 = wheat at 80\% and finger millet at 20\%.

Table 1: Proximate Composition of Finger Millet and Wheat Flours

<table>
<thead>
<tr>
<th>Sample (%)</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Fibre (%)</th>
<th>Ash (%)</th>
<th>Carb (%)</th>
<th>Energy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W:F 100</td>
<td>10.53 ± 1.45%</td>
<td>10.75 ± 0.78%</td>
<td>2.52 ± 1.00%</td>
<td>1.77 ± 0.80%</td>
<td>1.47 ± 0.31%</td>
<td>72.97 ± 1.46%</td>
<td>357.52 ± 3.04%</td>
</tr>
<tr>
<td>FM 100</td>
<td>14.13 ± 0.60%</td>
<td>7.97 ± 0.67%</td>
<td>1.43 ± 0.21%</td>
<td>4.09 ± 0.37%</td>
<td>2.83 ± 0.25%</td>
<td>73.47 ± 1.36%</td>
<td>352.95 ± 4.62%</td>
</tr>
<tr>
<td>W:F 95:5</td>
<td>8.88 ± 1.07%</td>
<td>10.52 ± 1.30%</td>
<td>1.87 ± 0.33%</td>
<td>1.89 ± 0.34%</td>
<td>2.20 ± 0.61%</td>
<td>74.44 ± 1.32%</td>
<td>356.63 ± 5.23%</td>
</tr>
<tr>
<td>W:F 90:10</td>
<td>10.17 ± 1.16%</td>
<td>9.64 ± 1.22%</td>
<td>1.45 ± 0.25%</td>
<td>2.00 ± 0.06%</td>
<td>2.32 ± 0.69%</td>
<td>74.42 ± 3.32%</td>
<td>349.32 ± 6.80%</td>
</tr>
<tr>
<td>W:F 80:20</td>
<td>10.31 ± 1.74%</td>
<td>9.59 ± 1.03%</td>
<td>1.37 ± 0.33%</td>
<td>2.10 ± 0.19%</td>
<td>2.83 ± 0.25%</td>
<td>73.81 ± 3.34%</td>
<td>345.89 ± 6.85%</td>
</tr>
</tbody>
</table>

Data are presented as Mean ± Standard deviation (n=5). Values with the same superscript letter(s) along the same column are not significantly different (P < 0.05). W:F 100 = wheat and finger millet at 100\%, FM = finger millet at 100\%, W:F 95:5 = wheat at 95\% and finger millet at 5\%, W:F 90:10 = wheat at 90\% and finger millet at 10\%, W:F 80:20 = wheat at 80\% and finger millet at 20\%.

Table 2: Proximate Composition of Biscuit

<table>
<thead>
<tr>
<th>Sample (%)</th>
<th>Moisture (%)</th>
<th>Protein (%)</th>
<th>Fat (%)</th>
<th>Fiber (%)</th>
<th>Ash (%)</th>
<th>Carb (%)</th>
<th>Energy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W:F 100</td>
<td>3.33 ± 0.35%</td>
<td>16.09 ± 0.09%</td>
<td>7.81 ± 0.10%</td>
<td>3.91 ± 0.11%</td>
<td>3.68 ± 0.10%</td>
<td>62.63 ± 0.07%</td>
<td>395.19 ± 0.61%</td>
</tr>
<tr>
<td>FM 100</td>
<td>4.65 ± 0.05%</td>
<td>17.52 ± 0.45%</td>
<td>7.08 ± 0.13%</td>
<td>5.52 ± 0.02%</td>
<td>4.70 ± 0.21%</td>
<td>60.60 ± 0.17%</td>
<td>374.17 ± 1.95%</td>
</tr>
<tr>
<td>W:F 95:5</td>
<td>3.27 ± 0.06%</td>
<td>17.23 ± 0.15%</td>
<td>7.09 ± 0.12%</td>
<td>3.28 ± 0.13%</td>
<td>4.02 ± 0.03%</td>
<td>66.44 ± 0.11%</td>
<td>394.53 ± 1.29%</td>
</tr>
<tr>
<td>W:F 90:10</td>
<td>3.44 ± 0.10%</td>
<td>16.54 ± 0.05%</td>
<td>6.97 ± 0.12%</td>
<td>3.51 ± 0.11%</td>
<td>4.40 ± 0.17%</td>
<td>65.52 ± 0.25%</td>
<td>385.34 ± 0.14%</td>
</tr>
<tr>
<td>W:F 80:20</td>
<td>3.67 ± 0.04%</td>
<td>15.30 ± 0.17%</td>
<td>7.07 ± 0.29%</td>
<td>3.80 ± 0.20%</td>
<td>5.04 ± 0.05%</td>
<td>65.07 ± 0.06%</td>
<td>381.23 ± 0.64%</td>
</tr>
</tbody>
</table>

Data are presented as Mean ± Standard deviation (n=5). Values with the same superscript letter(s) along the same column are not significantly different (P < 0.05). W:F 100 = wheat and finger millet at 100\%, FM = finger millet at 100\%, W:F 95:5 = wheat at 95\% and finger millet at 5\%, W:F 90:10 = wheat at 90\% and finger millet at 10\%, W:F 80:20 = wheat at 80\% and finger millet at 20\%.
Bars with the different letter(s) are significantly different (at p < 0.05).

Figure 1. Sensory evaluation of Biscuit produced from finger millet and wheat flour (Aroma)

Figure 2. Sensory evaluation of Biscuit produced from finger millet and wheat flour (Appearance)
Bars with the different letter (s) are significantly different (at p < 0.05).

Figure 3. Sensory evaluation of Biscuit produced from finger millet and wheat flour (Taste)

Bars with the different letter (s) are significantly different (at p < 0.05).

Figure 4. Sensory evaluation of Biscuit produced from finger millet and wheat flour (Texture)

CONCLUSION
As Millet are reservoir of “nutrition”. Based on the results obtained from this study, which revealed the effectiveness of finger millet flour in enhancing nutritional and sensory attributes of Biscuit produced from finger millet and wheat flour. Therefore it can be concluded that incorporation of finger millet flour combined with wheat flour not only made cookies formation easy but also gives best nutritional elements to human health. Additionally, preparation of this product is economical and can be consumed by individuals of all ages.

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