‘MUFFIN’ MADE WITH WHOLEMEAL PUMPKIN FLOUR: TECHNOLOGICAL AND SENSORY QUALITY.

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Introduction
Pumpkin is mainly produced by small farmers. Nowadays, muffin is a tendency in bakery products, consumed as a snack. This research aimed to develop a wholemeal pumpkin flour (WPF) with conventional drying method for replace wheat flour in muffin.

Results and Discussion
For obtain WPF, the pulp and the skin of pumpkin were used. Pumpkins were sanitized, cut, blanched, dried in a tray dryer with forced air for 6h at 50°C, crushed and sieved. The chemical composition of the WPF resulted in the following values, according to methodology: 7.17 ± 0.09% moisture; 4.02 ± 0.36% fat; 13.0 ± 0.07% protein; 6.56 ± 0.09% ash; 32.56 ± 3.89% of dietary fiber; and 36.56 ± 3.89% digestible carbohydrates, calculated by difference.

The results for colorimetric analysis of WPF was performed on HunterLab colorimeter Mini ScanXE, illuminant D65 for the parameters L, a*, b* and presented 69.3 ± 0.07; 24.6 ± 0.07; 64.2 ± 0.53 respectively, showing strong orange color.

The muffins were manufactured according to the flowchart in Figures 1 and 2.

Figure 1 – Flowchart of production of the muffins

Weighing ingredients → Mix ingredients → Distribution in molds for muffins (30.0±1.1g) → Baking (13 mins.) → Cooling (25°C) at least 1 hour → Figure 2 – Flowchart: from the wholemeal pumpkin flour to the muffins

The texture of the muffins, analyzed with texturometer TA-XT2i, the specific volume of muffins and crumb color can be seen in Table 1.

The purchase intention are expressed in Figure 3 (a), where 1 is “Definitely wouldn’t buy” and 5 “Definitely would buy”. The sensory evaluation are expressed in Figure 3 (b) where 1 is “Dislike extremely” and 9 is “Like extremely”.

Table 1 – Technological characterization: crumb color, texture and volume of muffins control (F0) and containing pumpkin flour (5% = F1 and F2 = 10%) ²

<table>
<thead>
<tr>
<th>Parameter</th>
<th>F0</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texture (kg.f)</td>
<td>1.52±0.09²</td>
<td>1.24±0.09²</td>
<td>1.57±0.19²</td>
</tr>
<tr>
<td>Volume (mL/g)</td>
<td>2.25±0.01²</td>
<td>2.28±0.08²</td>
<td>2.41±0.02²</td>
</tr>
<tr>
<td>Crumb color</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a*</td>
<td>81.05±0.29²</td>
<td>76.34±0.05²</td>
<td>73.48±0.26²</td>
</tr>
<tr>
<td>b*</td>
<td>1.98±0.26²</td>
<td>9.07±0.19²</td>
<td>13.34±0.69²</td>
</tr>
<tr>
<td>c*</td>
<td>28.71±0.50²</td>
<td>56.03±0.16²</td>
<td>65.59±0.60²</td>
</tr>
</tbody>
</table>

²Different small letters on the same lines show that differ by test Scott-Knott (p ≤ 0.05).

Figure 3 – Sensory Evaluation of muffins: (a) Purchase intention; (b) Acceptance test

Conclusion
This research proved be possible to use WPF as partial substitute of wheat flour in muffins. The muffin with 5% of WPF (F2) had better sensory acceptance.

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Bibliography

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