SENSORY CHARACTERIZATION OF THE “FIRSTS” AND “LASTS” PARTICIPANTS CACHAÇAS OF THE “CONCURSO DA QUALIDADE DA CACHAÇA” (FCF-UNESP)

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RESUMO – O Concurso de Qualidade da Cachaça, realizado pelo Centro de Pesquisa e Desenvolvimento da Qualidade da Cachaça, foi criado em 2005 com o intuito de premiar as melhores cachaças brasileiras. Com o objetivo de identificar os atributos sensoriais envolvidos na aceitação da cachaça, o presente estudo selecionou as três melhores e as três piores colocadas do X Concurso de Qualidade da Cachaça, realizado no ano de 2014, dentre as categorias não envelhecida e envelhecida. As cachaças foram submetidas a análise sensorial por meio testes de aceitação associados a escalas de ideal. A associação das escalas de ideal ao teste de aceitação permitiu um melhor entendimento de qual o perfil ideal de uma cachaça para os consumidores que participaram do estudo, entretanto os resultados indicaram haver similaridades entre os perfis sensoriais das primeiras e últimas colocadas no concurso, indicando que descritores não avaliados durante o estudo, influenciaram na aceitação das cachaças.

ABSTRACT – The “Concurso da Qualidade da Cachaça”, conducted by the “Centro de Pesquisa e Desenvolvimento da Qualidade da Cachaça” was created in 2005 in order to reward the best Brazilian cachaça. In order to identify the attributes involved in the acceptance of cachaça, this study selected the three best and worst placed in the X Quality Contest of Cachaça, held in 2014, among the non-aged and aged categories. Cachaças were subjected to sensory evaluation by acceptance tests associated with just about right ranges. The combination of scales ideal for acceptance testing allowed a better understanding of what the ideal profile of a tendancy to consumers who participated in the study. The results showed similarities between sensory profiles of the first and last placed in the contest, indicating that descriptors not evaluated during this study, influenced the acceptance of the cachaça.

PALAVRAS-CHAVE: aceitação, perfil de ideal, atributos.

KEYWORDS: acceptance, ideal profile, attributes.
INTRODUÇÃO

With the aim of rewarding the best cachaças from the estate of São Paulo, it was created, in the year of 2005, the first “Concurso da Qualidade da Cachaça”, conducted by the “Centro de Pesquisa e Desenvolvimento da Qualidade da Cachaça” located in the Faculdade de Ciências Farmacêuticas (FCF) da UNESP de Araraquara. Over the years, the Competition has gained a national proportion and it was consolidated how one of the events that aim the improvement and divulgation of the cachaça.

The cachaças participants are divided into three categories: unaged (cachaças not aged), rested (cachaças that is stored in a wood container, with volume higher than 700L for less than one year) and aged (cachaça stored in wood barrels up to 700L for more than one year). The cachaças were evaluated by consumers, using acceptance tests and performed in pubs and restaurants from Araraquara-SP.

In the sensory evaluations, the affective tests, like the acceptance and liking, aims to evaluate the consumers opinion in relation of a particular food. The utilization of the hedonic scale is probably the most used method to measure acceptance and liking, and has been used in a large variety of products, with considerable success (Stone et al., 2012).

The use of the Just About Right test try to determine the best intensity of a sensorial attribute, asking to the consumers if a particular attribute is strong, weak or just about right (Jaeger et al., 2015).

Therefore, the objective of this study was the identification of attributes involved in the acceptance of the first three and last three placed in the “X Concurso de Qualidade da Cachaça”, conducted in 2014, in the unaged and aged categories.

MATERIAIS AND METHODS

2.1 Cachaças

There were evaluated six cachaça’s brands, participants of the “X Concurso da Qualidade da Cachaça”, being selected the first three and the last three placed in the unaged and aged categories.

With the intent to keep the secret of the participants brands, the first three of the unaged category was named A1, A2 and A3, and the last three was named B1, B2 and B3 (18th, 19th and 20th). In the aged category, the first three was named C1, C2 and C3, and the last three was named D1, D2 e D3 (38th, 39th e 40th), respectively.

2.2 Study design

The participants of the study was volunteers, of both sex, eighteen years older, who declared themselves to be alcoholic beverages consumers, especially of cachaça, recruited in the FCF-UNESP. Altogether, 83 volunteers participated for the unaged category and 93 for the aged category.

2.3 Sensory Evaluation

Each participant received six samples of cachaça for the sensory evaluation, which was coded with a three digits numeration and served in acrylics transparent glasses of 10 mL, with a monochromated and random form.

Acceptance Tests

The consumer’s acceptance was measured using the hedonic scale of 9 points. The aroma and flavor was the evaluated attributes in the unaged category, and color, aroma and flavor, in the aged category (Peryam & Pilgrim, 1957).
Descriptive Analysis

It was utilized mixed scales of 9 cm, anchored at the extremes by “week” and “strong”, with “just about right” in the middle point. The evaluated descriptors was: alcoholic aroma, sweet aroma, alcoholic flavor, sweet flavor and pungency for the unaged category and yellow color, alcoholic aroma, sweet aroma, bitter aroma, alcoholic flavor, sweet flavor, bitter flavor and pungency, for the aged category (Rota et al., 2013; Jaeger et al., 2015).

2.4 Data analysis

The data was submitted to descriptive statistical analysis and tested for normality (As: -1 e 0,6323; Ku: -1 e 0,7697) e homoscedasticity. Variance analysis was done (ANOVA) and when there was a significant difference, the Tukey test was used, with significance level of 5%.

3 RESULTS AND DISCUSSION

The results demonstrated that the aroma was the only attribute that showed significant difference in the acceptance of the cachaças in the unaged category, and the most accepted was the cachaças A2 and B2, and the less accepted was the A3 (p=0,007) (Table 1).

Table 1 – Averages and standard deviation of the acceptance of the attributes aroma and flavor of the participant cachaças at the unaged category of the “X Concurso da Qualidade da Cachaça”. Araraquara/SP, 2014.

<table>
<thead>
<tr>
<th>Cachaças</th>
<th>Aroma</th>
<th>Flavor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>6.0±1.3$^{ab}$</td>
<td>5.4±1.8$^a$</td>
</tr>
<tr>
<td>A2</td>
<td>6.2±1.4$^a$</td>
<td>5.3±1.9$^a$</td>
</tr>
<tr>
<td>A3</td>
<td>5.4±1.7$^b$</td>
<td>5.2±2.0$^a$</td>
</tr>
<tr>
<td>B1</td>
<td>6.0±1.6$^{ab}$</td>
<td>4.9±1.7$^a$</td>
</tr>
<tr>
<td>B2</td>
<td>6.2±1.7$^a$</td>
<td>5.3±1.9$^a$</td>
</tr>
<tr>
<td>B3</td>
<td>5.9±1.5$^{ab}$</td>
<td>5.3±1.9$^a$</td>
</tr>
</tbody>
</table>

$^1$ Averages with the same letter in the same column don’t have a significant difference each other. (Tukey p≤0,05).

The results of the descriptive test for Alcoholic Aroma, in the aged category, are shown in the Figure 1.

Figure 1 – Just about right scale, for the attribute alcoholic aroma, in the aged category, at the “X Concurso da Qualidade da Cachaça”. Araraquara/SP, 2014.
In respect to the attribute alcoholic aroma, the cachaças B2 and B3 was the beverages that get closer of the just about right, differing significantly of only the cachaça A3 (p = 0.008).

The cachaça A3, even being placed between the first, showed the minor average for this attribute that may be related with the attribute alcoholic aroma, higher than just about right. The cachaça B2, even being placed between the last, showed a good acceptance for aroma, it can be explained by its proximity with the just about right (Figure 1).

Even with the acceptance for the attribute flavor not differing significantly between the cachaças (Table1), the sensory attributes that pleased more the consumers was the alcoholic flavor and the sweet flavor that get closer of the just about right, for the first place in the contest (Figure 2).

Figure 2 – Just about right scale for the descriptors alcoholic flavor and sweet flavor, in the unaged category, at the “X Concurso da Qualidade da Cachaça” Araraquara/SP, 2014.

The cachaça B1 was the one that showed the alcoholic flavor higher than just about right, which may have influenced its colocation.

The descriptors aroma and alcoholic flavor showed to have a significant role in the cachaça’s quality, and their intensity is inversely proportional to the ideal expected for the consumers, the same was noted in a study conducted by Rota et. al. (2013), in which, a reduction in the cachaça’s acceptance with the increase of the intensity realized by the consumers was seen.

The attributes sweet aroma and pungency didn’t show significant difference between the unaged cachaças.

The Table 2 show the results for the acceptance tests for aged category.

Table 2 – Averages\(^1\) and standard deviation of the acceptance of the attributes color, aroma and flavor of the participants cachaças at the aged category of the “X Concurso da Qualidade da Cachaça”. Araraquara/SP, 2014.

<table>
<thead>
<tr>
<th>Cachaças</th>
<th>Color</th>
<th>Aroma</th>
<th>Flavor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.8±1.6(^a)</td>
<td>6.9±1.5(^*)</td>
<td>5.9±1.7(^*)</td>
</tr>
<tr>
<td>2</td>
<td>5.7±2.0(^b)</td>
<td>6.4±1.8(^*)</td>
<td>6.0±1.8(^*)</td>
</tr>
<tr>
<td>3</td>
<td>6.7±2.1(^a)</td>
<td>6.9±1.7(^*)</td>
<td>6.2±1.8(^*)</td>
</tr>
<tr>
<td>4</td>
<td>6.4±1.6(^ab)</td>
<td>6.5±1.6(^*)</td>
<td>6.0±1.7(^*)</td>
</tr>
<tr>
<td>5</td>
<td>6.2±1.7(^ab)</td>
<td>6.5±1.5(^*)</td>
<td>6.1±1.9(^*)</td>
</tr>
<tr>
<td>6</td>
<td>5.9±2.0(^b)</td>
<td>6.5±1.6(^*)</td>
<td>5.7±1.9(^*)</td>
</tr>
</tbody>
</table>

\(^1\) Averages with the same letter in the same column don’t have a significant difference each other (Tukey \(p≤0.05\)).
At the acceptance test, the color attribute for the cachaças D1 and C1 differed significantly, positively, of the D2 and D6 samples ($p = 3.10^{-4}$).

According to Alcarde (2010) the aged cachaça’s coloring its due to the gradual extraction of fenolic compounds presents in the wood of the barrel. The samples evaluated in the present study was all aged in oak barrels, changing only the aging time. The acceptance for the color attribute is of extreme importance in aged cachaças, being the higher or lower related of the ideal, able to interfere significantly in the acceptance.

The descriptors yellow color, sweet aroma and oak aroma were probably the ones that approaches the first place at the aged category of the consumers ideal (Figure 3 and 4).

Figura 3 – Just about right scale, for the attribute yellow color, in the aged category, at the “X Concurso da Qualidade da Cachaça”. Araraquara/SP, 2014.

Figura 4 – Just about right scale, for the attributes oak aroma and sweet aroma, in the aged category, at the “X Concurso da Qualidade da Cachaça”. Araraquara/SP, 2014.

The cachaça D1, even being one of the last placed in the contest, also showed closer to the just about right, for the descriptors yellow color and sweet aroma, don’t showing a significantly difference regarding the oak aroma, when compared with the first placed. It low placement probably occurred due others descriptors, don’t evaluated in this study.
For the attributes alcoholic aroma, alcoholic flavor, sweet flavor, bitter flavor and pungency there wasn’t seen significant difference between the cachaças at the aged category.

The results of the acceptance tests for specific attributes associated to the evaluated descriptors, didn’t show direct relationship with the cachaças placement in the “X Concurso da Qualidade da Cachaça” in both categories. Probably, other descriptors that weren’t evaluated in this study interfered positively or negatively to their placement.

In a previous study involving quantitative descriptive analysis of cachaças, Rota et al. (2013) used 18 descriptors to describe unaged and aged cachaças and fermented aroma, molasses aroma, and salty flavor, for the unaged and banana’s aroma and vanilla’s flavor for the aged cachaças, the descriptor which assign big influence in the cachaça’s acceptance.

4 CONCLUSION

The association of the just about right scales to the acceptance tests, enabled a better understanding of the ideal profile of a cachaça, for the consumers who participate of the study, however the similarity between the profile of the cachaças didn’t reflected the differences noted in the sample’s placement at the “X Concurso da Qualidade da Cachaça”, indicating that probably, others descriptors, did not evaluated in this study, could have influence in the acceptance of this cachaças.

5 BIBLIOGRAPHIC REFERENCES


