

Full Length Research Paper

Sensory profile of fermented milk drinks flavored with fruits from the Brazilian Cerrado

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The Brazilian cerrado has several fruit species with great potential for agro-industrial use including the production of milk drinks. Thus, the objective of this study was to evaluate the sensory profile and purchase intent of fermented milk drinks added in increasing levels of fruits from the Brazilian cerrado. Four formulations of milk drinks were processed with concentrations of 4, 8, 12 and 16% of Araçá (*Psidium cattleianum*), Araticum (*Annona crassiflora* Mart), Mangaba (*Hancornia speciosa* Gomes), Passion fruit (*Passiflora edulis* f. *flavicarpa*) and Pequi pulps (*Caryocar brasiliense* Camb.). The sensory profile of products was characterized by affective test evaluating acceptance using the hedonic scale and purchase intent. Fruits used in flavoring, especially Pequi, are very appreciated by the local population. As demonstrated in acceptability tests, it is believed that this factor contributed to the high acceptance of Pequi. All milk drinks showed positive purchase intent value.

Key words: Fermented milk, acceptance test, purchase intent.

INTRODUCTION

Fermented milk originates from fermentation with production of lactic acid as a final product. Acidification is responsible for extending the shelf-life of food products (Finco, 2011). According to Oliveira et al. (2013), economic stability and increased consumer demand are responsible for the increased production of milk drinks on an industrial scale in Brazil.

Brazil has several fruit species with great potential for agro-industrial use, many of them are used by the population and processed into juices, liqueurs, jams and

candies or even through fresh consumption (Silva et al., 2008).

The functional properties of fruits are responsible for their increased consumption, mainly due to the presence of bioactive substances that have positive physiological effects through the antioxidant action even with inexpensive consumption (Melo et al., 2008). Many fruits from the Brazilian cerrado are included in the human diet; however, many fruit species with food, agro-industrial and economic potential need to be researched to definitely be

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Table 1. Formulations of fermented milk drinks containing Araçá, Araticum, Mangaba, Passionfruit and Pequi pulp.

Ingredients (1000 g mass)	Fruit pulp proportion (%)			
	4	8	12	16
Milk (g)	500	500	500	500
Milk whey (g)	200	200	200	200
Sucrose (g)	100	100	100	100
Milk powder (g)	30	30	30	30
Pulp (g)	40	80	120	160
Water (pH and TSS = pulp)	130	90	50	10
Probiotic lactic yeast	400 mg	400 mg	400 mg	400 mg

part of the regular diet and the formal fruit market.

Fermented milk drinks were flavored with Araçá, Araticum, Mangaba, Passion fruit and Pequi constitute products with high palatability and nutritional value due to the use of natural raw materials and without use of preservatives.

The Cerrado is the second largest biome in South America, from the point of view of biological diversity; the Brazilian Cerrado is recognized as a savanna harboring many species of native plants that have already been cataloged. In this context, the aim of this study was to evaluate the sensory profile and purchase intent of fermented milk drinks added with increasing levels of fruit pulp from the Brazilian cerrado.

MATERIALS AND METHODS

Fruit pulp from the Brazilian cerrado

Fruits were collected directly from Araca, Araticum, Mangaba, Passion fruit and Pequi plants in the Cerrado region, southwestern state of Goiás. Fruits were selected, sanitized with 100 ppm sodium hypochlorite / 10 min.

The fruits of Araca and Pequi were manually pulped, the outer shell removed and the pulp was withdrew with a knife. The fruits of Araticum, Mangaba and passion fruit were peeled manually and were later taken to industrial removing device coupled with stainless steel sieve separating the pulp from the seeds. The fruit pulps were packed in polyethylene bags, identified and frozen for later use.

Fermented milk drinks

To prepare the milk base, 40% milk whey and 60% milk (mass / mass) were used. Also, 10% sucrose and 3% milk powder were added to the milk base with heating at 90°C / 3 min followed by cooling to 42°C. *Lactobacillus acidophilus* (La-5), *Bifidobacterium* (BB-12) and *Streptococcus thermophilus* cultures for fermentation were used in the amounts specified by the manufacturer.

The fermentation of the milk drink occurred in an oven at 42°C until it reached pH 4.5. Later, the mass was cooled to 20°C for homogenization and fruit pulps were added.

To be added to fermented milk drinks, pulps were pasteurized at 70°C for 3 min. The content of total soluble solids (TSS) was obtained with the use of bench top refractometer. Pulps were used

in the proportions of 8, 12 and 14 and 16% in relation to the milk drink mass.

Aiming to make the pulp more homogeneous when added to the milk base, special water was prepared, with pH and TSS identical to the pulp to be added. The water pH was adjusted with the addition of ascorbic acid and sucrose to reach the desired TSS.

Araçá, araticum, mangaba, passion fruit and pequi pulps were diluted in the respective waters with pH and TSS equal to the respective pulps and added to the fermented milk base corresponding to each experiment. Then, milk drinks were packaged in 200-mL polyethylene packages to perform the sensory analysis.

Five trials according to the different fruit pulps were performed and distributed into four treatments as follows: Treatment 1 - milk drink added with 4% pulp; Treatment 2 - milk drink added with 8% pulp; Treatment 3 - milk drink added with 12% pulp and Treatment 4 - milk drink added with 16% pulp. Each treatment had three replicates according to Table 1.

Microbiological analyses

The detection and enumeration required to establish the total count of yeasts and molds whose unit is given in colonies forming units (CFU) was performed using method for dairy products through the technique of colony count at 25°C described by ISO 6611: IDF 94 (2004).

The most probable number of total coliforms was established in accordance with ISO 4831 (2006).

Sensory analysis

Sensory characteristics were assessed in order to quantify the preference of consumers for milk drinks flavored with different concentrations of cerrado fruits such as Araçá, Araticum, Mangaba, Passionfruit and Pequi, as well as their purchase intent.

On the eighth day after processing, sensory analyses of milk drinks flavored with Cerrado fruits were performed.

Sensory evaluation was performed using affective method by Acceptance Testing with a 9-point Hedonic scale, where one (1) represented "disliked very much"; two (2) "dislike much"; three (3) "disliked regularly"; four (4) "disliked slightly"; five (5) "neither liked nor disliked"; six (6) "liked slightly"; seven (7) "liked regularly"; eight (8) "liked much" and nine (9) "liked very much" in order to judge the sensory attributes according to parameters of color, aroma, flavor, acidity, viscosity and appearance, also evaluating the purchase intent of consumers (IAL, 2005). 50 untrained panelists were used. Sensory evaluations were performed at the Laboratory for Sensory Analysis of the Food Engineering Course, IF Goiano, Rio Verde

Table 2. Comparison of the mean values and concordance coefficient among judges (CC) regarding sensory parameters of color, aroma, flavor, acidity, viscosity and appearance of milk drink with increasing levels of Araçá pulp (*Psidiumcattleianum*).

Sensory parameters	Araçá Pulp (%)			
	4	8	12	16
Color	6.40a	6.30a	6.32a	6.53a
CC (%)	24.88	29.74	32.59	25.85
Aroma	6.57a	6.43a	6.53a	6.74a
CC (%)	32.74	28.86	36.6	35.08
Flavor	6.11a	5.36a	5.38a	5.66a
CC (%)	22.96	16.82	19.12	16.52
Acidity	6.51a	5.98a	5.81a	5.98a
CC (%)	27.68	27.68	26.66	23.84
Viscosity	5.74a	5.62a	5.60a	5.96a
CC (%)	21.12	26.08	21.59	22.4
Appearance	6.00a	5.64a	5.77a	5.83a
CC (%)	18.87	23.05	26.85	22.96

Different letters in the line are significantly different by the Tukey test at 5% probability.

Campus, conducted in individual booths under white light. Samples labeled with three digits consisting of 20 ml of milk drink from each treatment randomly distributed were provided to tasters who consented to participate in the study along with the form to be filled.

In the sensory evaluation form, it was possible to provide both sensory and purchase intent parameters and additional information such as age, gender, affinity and frequency of the consumption of milk drinks.

Statistical analysis

The results of the sensory profile and purchase intent of milk drinks were evaluated according to each experiment in a completely randomized design.

Means of sensory evaluation were compared by the Tukey test at 5% probability using the SISVAR 5.3 software (Ferreira, 2010).

The concordance coefficient (CC) among judges determines the percentage of tasters who agree with each mean obtained by the evaluation of sensory attributes based on the hedonic scale. CC was obtained through the CONSENSOR 1.1 software (Silva et al., 2010).

The Acceptability Index (AI) was obtained using the formula: $AI (\%) = A \times 100 / B$, where A is the value of the mean score obtained for the product and B is the highest score given to the product. For the milk drink to have positive acceptance as for the sensory attributes, the AI value should be equal to or higher than 70% (Teixeira et al., 1987).

RESULTS AND DISCUSSION

The results of the total count of yeasts and molds for all milk drinks obtained was score $<1.0 \times 10^1$ CFU, which is within limits established by law and according to ISO 6611: IDF 94 (2004). The mean result of the most probable number for Total Coliforms was less than 0.30

MPN / mL, which is within the limit established by ISO 4831 (2006).

Fifty untrained panelists aged 17-52 years participated in the evaluation of the sensory characteristics of fermented milk drinks; 44% of participants were male and 56% female.

When assessing the affinity of tasters in relation to the consumption of dairy drinks, 98% of participants reported liking milk drinks and only 2% reported otherwise.

Regarding the frequency of the consumption of dairy drinks, 26% of tasters reported consuming every day, 37% consume dairy drinks once a week, 2% reported consuming every two weeks, and 35% once a month. Thus, it was observed that the consumption of fermented dairy drinks regardless of flavor is quite significant, justifying the development of dairy drinks with different flavors, attracting the interest of consumers to the variation of flavors, especially typical and characteristic flavors of the cerrado region.

Tables 2 to 6 show the mean sensory profile characterization values and the concordance coefficient (CC) among judges determined in the four treatments of fermented dairy drinks with increasing levels of Araçá (*Psidium cattleianum*) Araticum (*Annona crassiflora* Mart), Mangaba (*Hancorniaspeciosa* Gomes), Passion fruit (*Passifloraedulis* f. *flavicarpa*) and Pequi pulp (*Caryocarbrasiliense* Camb.) after eight days of storage, because after this time the milk drink has better flavor and texture, acquired the appropriate characteristics according to Oliveira and Damin (2003) report that at this time there is greater viability of lactic acid bacteria.

In Table 2, when comparing the mean values by the Tukey test, all sensory parameters of all treatments with

Table 3. Means and concordance coefficient (CC) among judges for the sensory analysis of milk drinks with increasing levels of Araticum pulp (*Annona crassiflora Mart*) for parameters of color, aroma, flavor, acidity, viscosity and appearance.

Sensory parameters	Araticum Pulp (%)			
	4	8	12	16
Color	6.50a	6.30a	6.39a	5.48a
CC (%)	25.84	25.61	27.79	20.68
Aroma	6.36a	6.25a	6.02a	5.75a
CC (%)	24.61	21.47	23.48	18.81
Flavor	6.80a	5.93a	5.86a	5.73a
CC (%)	29.02	23.48	16.51	16.5
Acidity	6.39a	5.86a	6.14a	5.64a
CC (%)	21.68	19.73	23.69	15.53
Viscosity	6.30a	5.84a	5.98a	5.50a
CC (%)	17.86	22.98	16.51	14.24
Appearance	6.43a	6.07a	6.07a	5.91a
CC (%)	24.16	26.79	24.92	27.61

Different letters in the line are significantly different by the Tukey test at 5% probability.

Table 4. Means and concordance coefficient among judges (CC) of the sensory analysis of milk drink with increasing levels of Mangaba pulp (*Hancorniaspeciosa Gomes*) for parameters of color, aroma, flavor, acidity, viscosity and appearance.

Sensory parameters	Mangaba pulp (%)			
	4	8	12	16
Color	6.28a	6.38 ^a	6.30a	6.40a
CC (%)	21.07	28.72	27.35	31.74
Aroma	5.96a	5.70a	5.78a	5.86a
CC (%)	17.28	21.02	22.07	20.66
Flavor	5.76a	5.02a	5.10a	4.92a
CC (%)	17.78	14.42	12.77	18.59
Acidity	6.16a	5.56a	5.74a	5.30a
CC (%)	24.48	24.39	23.26	15.33
Viscosity	5.92a	5.84a	5.74a	5.68a
CC (%)	22.27	25.34	18.03	20.15
Appearance	6.28a	6.10a	5.96a	5.94a
CC (%)	25.85	23.06	21.45	14.91

Different letters in the line are significantly different by the Tukey test at 5% probability.

increasing addition of Araçá pulp showed no significant difference ($p < 0.05$), that is the Araçá pulp concentration did not significantly influence the evaluation of tasters.

Milk drink added with 12% Araçá pulp presented mean parameters of color, aroma and appearance with the highest concordance coefficient (CC) among judges.

Therefore, flavor and acidity of milk drink added of 4% Araçá pulp showed the highest concordance coefficient

among judges (CC) compared to the means obtained, demonstrating greater preference of consumers for milk drink with lower pulp concentrations.

For parameter of viscosity, milk drink with 8% Araçá pulp showed the highest concordance coefficient among judges with the mean of 5.62.

For parameters of color and aroma, all treatments of milk drink flavored with Araçá were acceptable. For parameter

Table 5. Means and concordance coefficients among judges (CC) of the sensory analysis of milk drink with increasing levels of Passion fruit pulp (*Passifloraedulis f. Flavicarpa*) for parameters of color, aroma, flavor, acidity, viscosity and appearance.

Sensory Parameters	Passion fruit pulp (%)			
	4	8	12	16
Color	6.38b	6.80ab	7.09ab	7.31a
CC (%)	30	34.12	32.32	36.51
Aroma	7.11a	7.20a	7.13a	7.33a
CC (%)	33.67	31.8	31.97	35.59
Flavor	6.89a	6.91a	6.24a	6.20a
CC (%)	32.49	29.63	21.61	23.09
Acidity	6.49a	6.24ab	5.93ab	5.24b
CC (%)	29.63	22.85	19.82	15.99
Viscosity	5.29a	5.96a	5.89a	6.22a
CC (%)	27.87	24.72	22.85	26.03
Appearance	5.78b	6.47ab	6.60ab	7.00a
CC (%)	24.72	31.15	30.18	33.5

Different letters in the line are significantly different by the Tukey test at 5% probability.

Table 6. Means and concordance coefficients among judges (CC) of the sensory analysis of milk drinks with increasing levels of Pequi pulp (*Caryocarbrasiliense Camb.*) for parameters of color, aroma, flavor, acidity, viscosity and appearance.

Sensory Parameters	Pequi Pulp (%)			
	4	8	12	16
Color	7.05a	7.38a	7.67a	7.76a
CC (%)	33.5	44.61	45.74	50
Aroma	6.52a	7.10a	6.81a	6.71a
CC (%)	36.11	40.41	39.77	25.73
Flavor	7.14a	7.33a	7.33a	6.76a
CC (%)	39.77	42.86	41.03	36.42
Acidity	6.29a	6.95a	6.76a	6.62a
CC (%)	27.66	36.8	33.5	30.14
Viscosity	6.95a	7.00a	6.95a	7.24a
CC (%)	32.73	44.18	34.99	36.42
Appearance	6.67 ^a	7.10a	6.90a	7.38a
CC (%)	29.45	44.03	33.5	45.18

Different letters in the line are significantly different by the Tukey test at 5% probability.

of acidity, only milk drink with 4% Araçá pulp obtained the higher percentage of acceptability and for the other parameters and treatments, products did not obtain satisfactory acceptability.

Therefore, in relation to parameter of taste, milk drink added of Araçá pulp was not well accepted by tasters, which could be due to the fact that Araçá pulp has many seeds yielding milk drink with residues, which may not have pleased judges satisfactorily.

Table 3 shows the mean values for the sensory profile

characterization and the concordance coefficient among judges (CC) determined in the four treatments of fermented milk drink with increasing levels of Araticum pulp (*Annona crassiflora Mart*) after eight days are storage.

Assessing all sensory parameters of milk drinks with increasing levels of Araticum pulp and comparing by the Tukey test, no significant difference ($p > 0.05$) among treatments was found.

When evaluating parameters of color and acidity, the

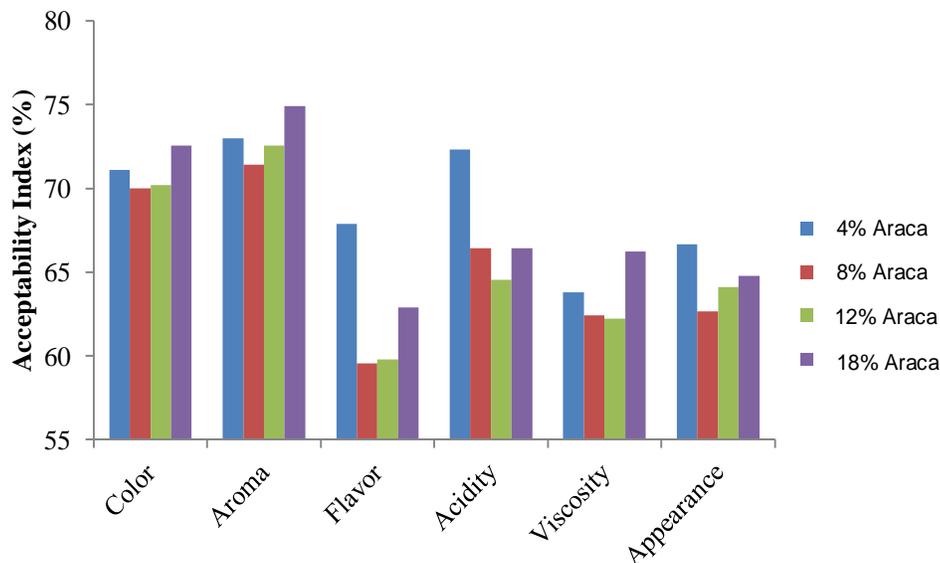


Figure 1. Acceptability Index of the sensory attributes of dairy drink with increasing levels of Araca pulp.

concordance coefficient among judges was higher for milk drink added with 12% of Araticum pulp.

Parameters of aroma and flavor of milk drink with the lowest level of Araticum pulp (4%) showed the highest concordance coefficient among judges, and it could be inferred that even the lowest fruit concentration provided the product characteristic aroma and flavor.

When evaluating parameter of viscosity, concordance coefficient among judges was higher for milk drink added with 8% Araticum pulp (5,84); and for parameter of appearance, judges agree that the mean scores assigned is close to 5.91 for the addition of 16% Araticum pulp. These values can be explained because Araticum pulp has sandy texture, as well as the product added of it, and increasing the addition of Araticum pulp proportionally increases the sandy texture of the final product, which may not have pleased judges satisfactorily.

When the concordance coefficient among judges is around good mean or high mean, the acceptability index of that parameter is above 70%, which can be seen in Figure 1, showing the acceptability index of the sensory profile of milk drinks flavored with increasing levels of Araticum pulp.

When assessing parameter of color, milk drink added with Araticum pulp showed acceptability for treatments with 4, 8 and 12% Araticum pulp. For parameter of aroma, treatments with 4 and 8% were acceptable, and in relation to parameters of flavor, acidity, viscosity and appearance, only treatment with the addition of 4% Araticum pulp was accepted.

Rocha et al. (2008) evaluated the addition of Araticum jam to fermented milk drink and obtained good acceptance for the product, similar to the addition of 4% Araticum pulp in the present study.

Figure 2 shows the sensory acceptability index of milk drink with increasing levels of Araticum pulp.

It could be inferred that although intermediate levels of pulp intensify attributes of color and aroma, minimum level of Araticum pulp was enough to please tasters.

Table 4 shows that the values of sensory parameters showed no significant difference ($p < 0.05$) from each other, that is, the Araçá pulp concentration did not influence the assessment of tasters.

The concordance coefficient among judges was higher for parameters of color and flavor of milk drink added with 16% Mangaba pulp. Color showed the highest mean (6.40), and flavor showed the lowest mean (4.92), and it could be inferred that high amounts of Mangaba pulp enhance the color of the product; however, the product obtains strong or cloying flavor, making judges to be indifferent or dislike it slightly.

Regarding aroma, the concordance coefficient was higher for milk drink added with 12% Mangaba pulp, and for parameter viscosity, the concordance coefficient was higher for milk drink added with 8% Mangaba pulp, and intermediate values of Mangaba pulp addition expressed means that indicate indifference of tasters in relation to these factors.

For milk drink added with 4% Mangabap ulp, parameters of acidity and appearance obtained the highest means, followed by higher concordance coefficient among judges.

Means and concordance coefficients for milk drink added with Mangaba pulp were similar to means found by Silva (2013), assessing yogurts added with Umbu pulp, and for attributes of appearance, aroma, flavor, means obtained for yogurt correspond in scale to "neither liked nor disliked" identifying indifference of judges regarding the acceptance of yogurts.

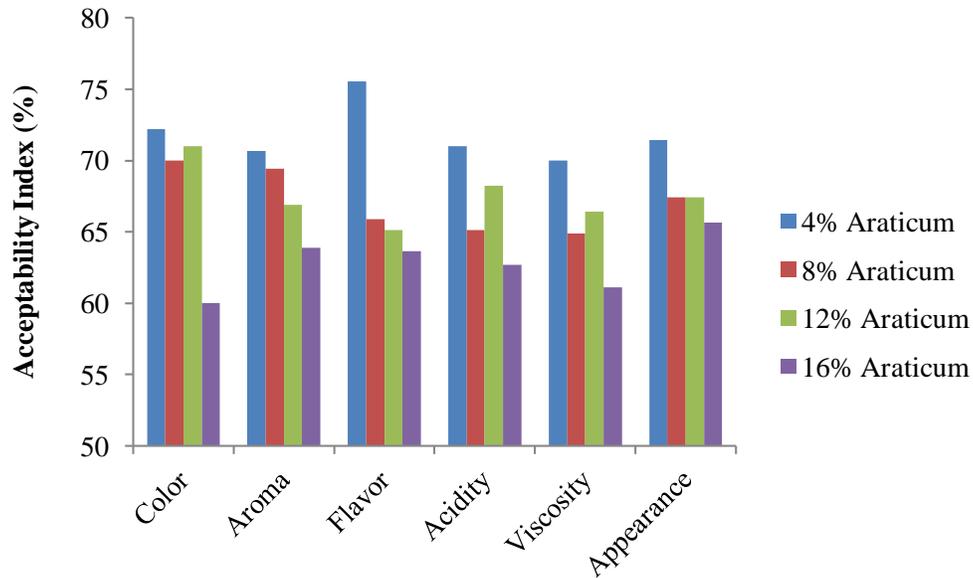


Figure 2. Acceptability index of the sensory attributes of milk drink with increasing levels of Araticum pulp.

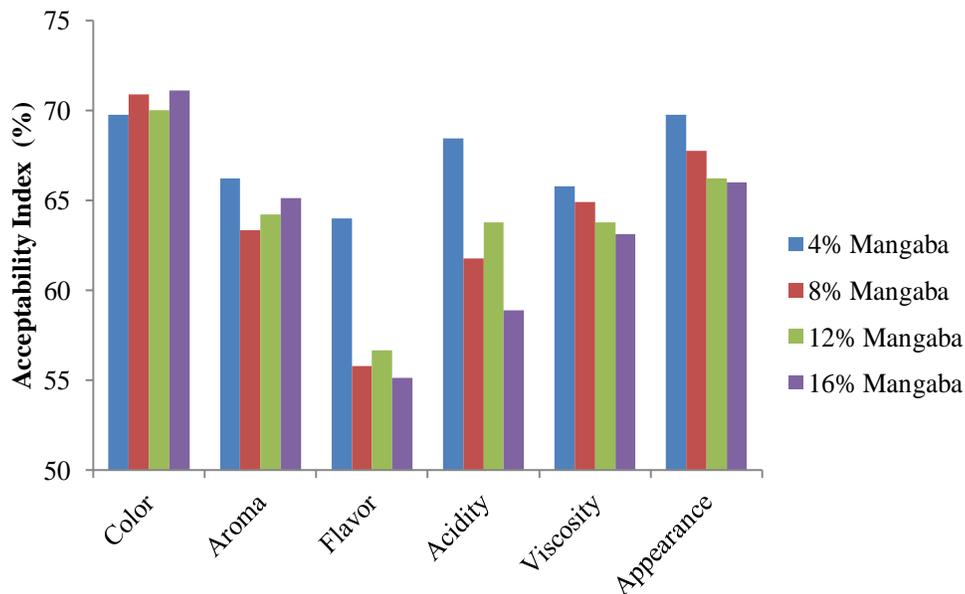


Figure 3. Acceptability index of the sensory attributes of milk drink with increasing levels of Mangaba pulp.

Figure 3 shows the sensory acceptability index of milk drink with increasing levels of Mangaba pulp.

In milk drink flavored with Mangaba, only treatments with the addition of 8, 12 and 16% of Mangaba pulp obtained good acceptance for parameter of color. The other parameters and treatments did not obtain acceptance values higher than 70%.

The study by Rocha et al. (2008) evaluating the addition of Mangaba jamto fermented milk drink, showed acceptability similar to milk drink added with 4% Mangaba pulp. Thus, milk drink added with Mangabapulp was better accepted in minimal levels (4%).

In Table 5, when evaluating parameters of color and appearance, means showed no significant difference

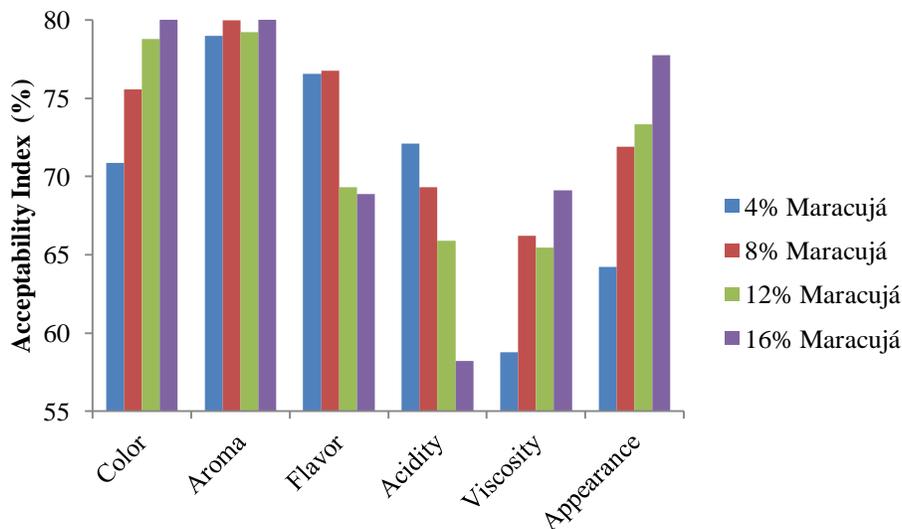


Figure 4. Acceptance index of the sensory attributes of milk drink with increasing levels of passion fruit pulp.

($p < 0.05$) among treatments with the addition of 8 and 12% passion fruit pulp, and only treatment with the addition of 4% passion fruit pulp showed significant difference ($p < 0.05$).

For parameter of aroma, no significant difference ($p < 0.05$) between means was found. Therefore, the addition of high amounts of passion fruit pulp enhanced color and flavor of the product, thereby positively affecting appearance.

Means for parameters flavor and viscosity of milk drink with the lowest addition of passion fruit pulp (4%) showed the highest concordance coefficients among judges, with no significant difference ($p < 0.05$) for the means of these parameters.

When evaluating parameter of acidity, milk drink added with 4% passion fruit pulp showed the highest concordance coefficients among judges for the highest mean (6.49), differing ($p < 0.05$) from each other.

When evaluating parameter of acidity, milk drink added with 4% passion fruit pulp showed the highest concordance coefficients among judges for the highest mean (6.49), and no difference ($p < 0.05$) was significant of samples with addition of 8 and 12% pulp.

The means of treatments with 8 and 12% passion fruit pulp showed no significant difference ($p < 0.05$) from each other.

The highest concordance coefficients regarding parameters of color, aroma and appearance are given for the highest means in milk drink added with 16% passion fruit pulp.

Figure 4 shows the sensory acceptance index of milk drink with increasing levels of passion fruit pulp.

In relation to parameters of color and aroma for milk drink added with passion fruit pulp, all treatments were well accepted. For parameter of flavor, treatments with

4 and 8% of passion fruit pulp obtained good acceptability.

Appearance was well accepted in treatments with 8, 12 and 16% passion fruit pulp, and viscosity showed no acceptability in any treatment.

Almeida et al. (2013) assessed the production and sensory characterization of yogurt enriched with passion fruit pulp and reported that samples added of 10 and 12% passion fruit had greater acceptance, and the addition of passion fruit pulp provides flavor with desirable acidity and acceptable by judges.

In Table 6, when comparing means by the Tukey test, all sensory parameters and all treatments with increasing levels of Pequi pulp showed no significant difference ($p < 0.05$) from each other.

Milk drink added with 16% Pequi pulp showed the highest concordance coefficients among judges for the highest means, respectively (7.76 and 7.38) and when evaluating parameters of color and appearance, a higher Pequi pulp concentration enhanced the color of products and as appearance is directly linked to visual, it means that tasters liked the product.

For milk drink added with 8% Pequi pulp for parameters of aroma, flavor and acidity, the highest means followed by the highest concordance coefficients among judges were obtained.

For milk drink added with 8% Pequi pulp for parameters of aroma, flavor and acidity, there was no significant difference.

One of the most important parameters in the sensory evaluation is flavor, which stands out both for scores corresponding to liked moderately as for concordance coefficients exceeding 40% (Marinho et al., 2012).

For parameter of viscosity, milk drink added with 8% Pequi pulp obtained the highest concordance coefficients

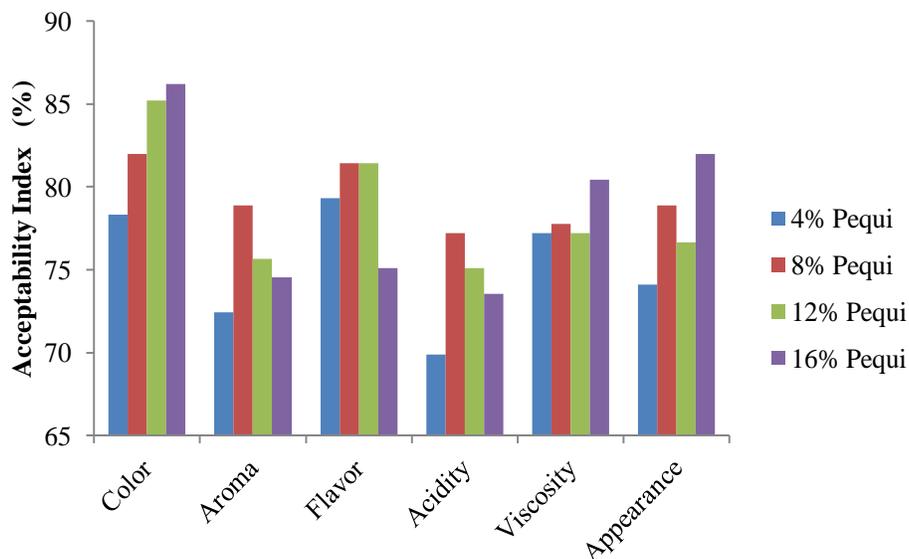


Figure 5. Acceptability Index of the sensory attributes of milk drink with increasing levels of Pequi pulp.

among judges. This result shows that when it comes to a fruit with very strong and distinctive flavor as Pequi, intermediate values of pulp addition are sufficient to characterize the milk drink as expected because the means for the addition of 8% Pequi pulp indicate that the judges liked the product. This result shows that intermediate values of pulp addition are sufficient to characterize the milk drink according to expected because the means indicate that the judges liked the product.

Figure 5 shows the sensory acceptability index of milk drink with increasing levels of Pequi pulp.

With respect to the addition of Pequi pulp, milk drink and its acceptability, all treatments in all parameters had excellent acceptability index, except for treatment with the addition of 4% Pequi pulp for parameter of acidity, indicating that tasters approved the addition of Pequi pulp to the milk drink.

Assessment of the acceptability index shows that intermediate additions of pulp (8 and 12%) obtained good results for parameters of aroma, flavor and acidity.

It could be inferred that because fruits used in the study are typical of the Brazilian cerrado where the research took place, tasters would have greater affinity with them. The study by Brasil et al. (2011) showed similar acceptability, where milk drink added with 8% Pequi pulp was well accepted by judges.

Fermented milk drinks flavored with Araçá, Araticum, Mangaba, Passion fruit and Pequi constitute products with high palatability and without use of preservatives.

Figure 6 shows the comparison on the purchase intent related to each addition of pulp to milk drinks.

The Purchase Intent was assessed with the following question to tasters "Would you buy milk drink flavored

with Araçá?", and the same question was made to tasters who did the sensory analysis in relation to the other fruits.

In general, it could be inferred that the purchase test obtained positive result, since all the drinks showed value exceeding 50% for option "Yes" (yes, I would buy the product).

Milk drink flavored with passion fruit pulp had the highest percentage of Purchase Intent (98%), followed by milk drink flavored with Pequi pulp (77%). This is because passion former is widely known and common, and Pequi stands for being a very popular fruit in the region.

Milk drink flavored with passion fruit pulp had the highest percentage of Purchase Intent (98%), followed by milk drink flavored with Pequi pulp (77%). This is because varieties passion fruit are known, and Pequi stands for being a very popular fruit in the region.

Conclusion

The fruits used to flavor milk drinks, especially Pequi, are much appreciated by the local people. As demonstrated in acceptability tests, it is believed that this factor contributed to the prominence acceptance of Pequi. All milk drinks showed positive Purchase Intent values.

The economic viability of products is clear, since it is of easy preparation and has low production cost due to the use of milk whey. The potential for economic exploitation of native Cerrado species is high.

Conflict of interests

The author(s) did not declare any conflict of interest.

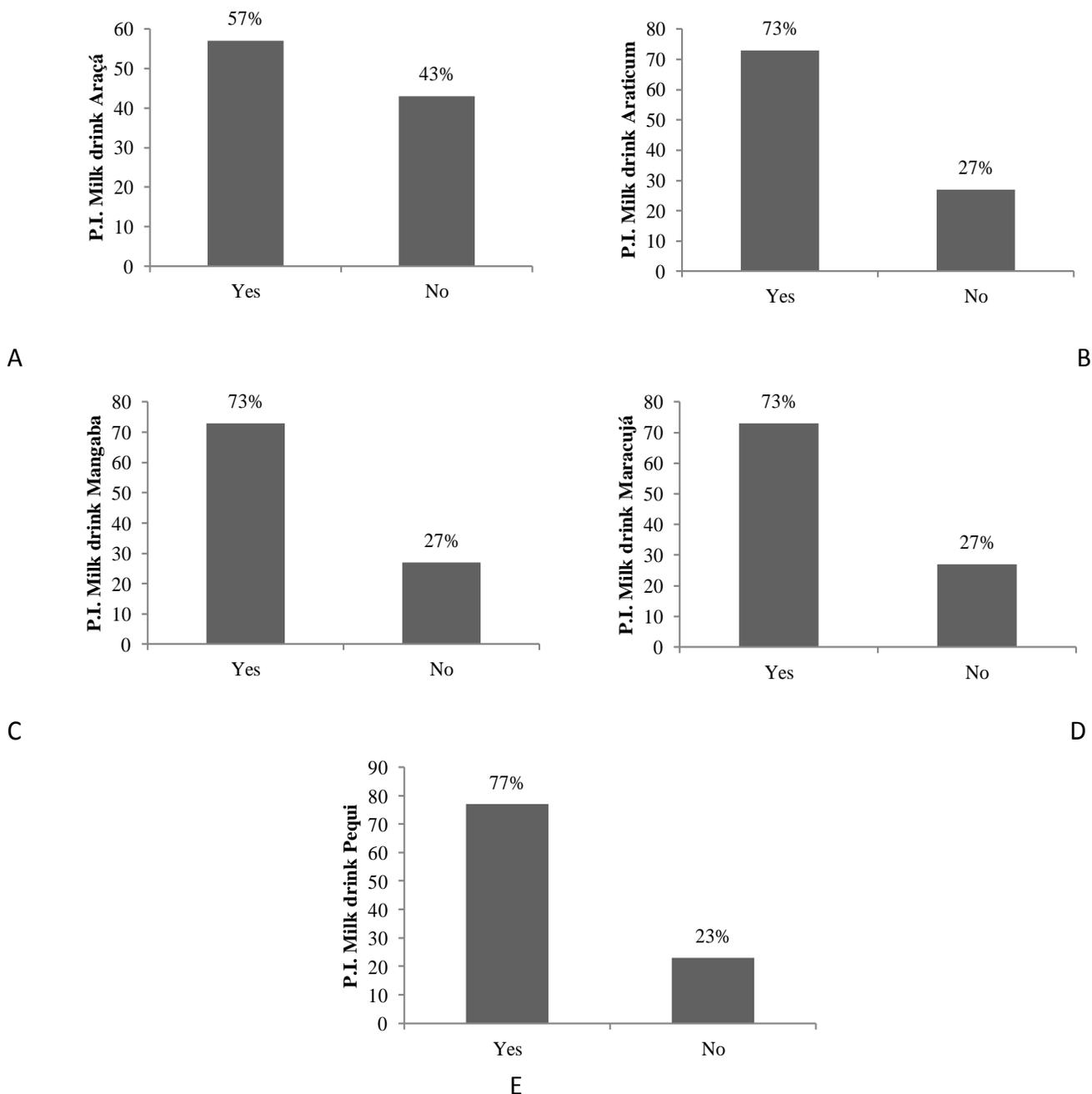


Figure 6. Purchase Intent of milk drinks with increasing levels of fruit pulp. * **P.I. = Purchase Intent** . A. Milk drink flavored with Araçá. B. Milk drink flavored with Araticum. C. Milk drink flavored with Mangaba. D. Milk drink flavored with Passion Fruit. E. Milk drink flavored with Pequi.

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