ABSTRACT

Post-harvest losses of fruits such as passion fruit make it necessary to introduce technologies and processes that allow the most efficient use of the same. In the present work the dehydrated sheets of pulp of passion fruit (*Passiflora edulis* f. *Flavicarpa*) was characterized and was evaluated sensorially. For the dehydration tests, a static type equipment was used and fresh and dehydrated passion fruit pulp was characterized taking into account: moisture content, soluble solids, pH, acidity and proximal analysis. The conservation parameters of the dehydrated pulp were satisfactory, which was favored by the low water activity reached in the dehydrated product; the sensorial evaluation showed that temperature and speed of drying air used do not exert an influence that can be perceived in the evaluation of the quality factors.

Keywords: *Passiflora edulis* f. *Flavicarpa*, pulps, passion fruit, sensory analysis, sheets, dehydrate.

1. INTRODUCTION

Passion fruit is one of the fruits that has had the greatest growth in production and consumption in Colombia, the yellow variety being the most cultivated. This variety is characterized by its yellow fruits due to the presence of carotenoids; fruits are ovoid, with intense flavor and high acidity (Laboissière et al., 2007; Abreu, Peixoto, Junqueira and Sousa, 2009). This is why it is a very desirable fruit, used as a base to prepare industrialized drinks, reaching position in the exotic fresh fruit market, having acid and sweetened pulp (Laboissière et al., 2007).

The ideal conditions for the cultivation of passion fruit are based on a warm climate, elevation from 10 to 1300 meters above sea level, soils with a loam to loam clay texture with good organic matter content and a minimum rainfall of 1,500 mm per year. (USAID - MIDAS, 2009), cited by Sistema de Información de Precios y Abastecimiento del Sector Agropecuario (System of Price Information and Supply of the Agricultural Sector) SIPSA (2012).

Most of the world production of passion fruit is intended to satisfy the domestic consumption of producing countries and foreign trade is relatively low; in world trade, concentrated passion fruit juice has more demand than fresh fruit (Corporación Colombia Internacional (CCI), 2002).

According to Furlaneto, Esperancini, Martins and Vidal (2010), world production of passion fruit is 640,000 metric tons, Brazil being the largest producer, with about 70% of that total, followed by Ecuador with a participation of around 13% and Colombia is third, producing 5% of the world total. Countries of the European Union and the United States are the main importers, with a growth in demand for passion fruit in the form of concentrate (50 °Brix) (Laboissière et al., 2007). According to the CCI (2002), Colombia exports fresh and processed passion fruit, especially as nectar, jelly, jam, juice and concentrate, although the highest proportion of international trade is made with juice (14 °Brix) or concentrate (50°Brix). Passion fruit juice is the third exotic juice in importance, after mango and pineapple juices (CCI, 2002).

The yields presented by Colombia, are higher than those recorded by Brazil. In 2009, 50,853 ha were cultivated in passion fruit in Brazil, for a production of 718,798 metric tons (Brazilian Fruit Institute (IBRAF), 2010 with a yield of 14.1 tons ha⁻¹.

In Colombia, the area planted in 2014 was 5,373 ha and in 2015 of 5,760 ha, with a variation of 7.2% and national participation of 0.4% of fruit production; the yield of passion fruit cultivation in Colombia was 15.6 tons ha⁻¹ in 2014 and 15.7 tons ha⁻¹ in 2016. Encuesta Nacional Agropecuaria (National Agricultural Survey) ENA (2015).

Fruit pulps are marketed fresh under refrigeration and/or freezing, concentrated or dehydrated. Dehydration techniques using low temperatures are of the static type and use forced air or vacuum cookers. Direct contact dehydration systems are also used, such as high temperature roller equipment with continuous operation. However, this procedure greatly affects the nutritional content and organoleptic and functional characteristics of pulps (Caparino et al., 2012).

There are studies on fruits, vegetables and derived products, showing the influence of temperature on the degradation of organoleptic and nutritional characteristics of the product (Barbosa and Vega, 2000; Vaillant et al., 2001). Castro, Rodríguez and Vargas (2008) dried cape gooseberry (*Physalis peruviana*) with hot air, with osmotic dehydration as pretreatment, finding that the fruit that was dried with hot air at 60 °C until a moisture content of 2.5% dry basis (db) presented a total loss of β-carotene of 98%, while at 40°C showed the lowest loss, being 28%, for drying times of 7 and 12 h, respectively.

Giraldo, Arango and Márquez (2004) osmo-dehydrated blackberries with two different solutions of...
the product was subjected to a forced convection drying process with hot air at 1.5 m s⁻¹ speed and 55 °C temperature for 24 h, achieving moisture contents varying between 25.9 % and 30.8 % wet basis (wb), making the product more stable to microbial attack.

In foam drying, passion fruit juice with methyl-cellulose forms foams with intermediated stability, the addition of sucrose favors the formation of more stable foams (Foam Mat) (Segura, Monroy and Manrique, 1990).

Cerquera (2006) states that the Colombian fruit sector has had unusual growth in recent years, mainly due to the industrialization of fruits and the growing demand for natural products such as fruit pulp, pulp preparations and nectars.

Colombia has focused on the transformation of fruits and vegetables into pulp, dehydrated, concentrated, freeze-dried and frozen products, taking advantage of consumption trends towards functional and healthy products (PROEXPORT Colombia, 2012). The trends in consumption of processed fruits and vegetables are directly related to issues such as health, convenience, organic, ethnic, and fair trade. Processed fruits and vegetables are increasingly used in the European food industry, with Germany, Italy and the United Kingdom being the main consumers (PROEXPORT, SF). According to Marín (2015) the fruit juice of passion fruit contains alkaloids which reduce blood pressure, and have sedative and antispasmodic actions.

Passion fruit is used as fresh fruit and also processed for concentrated and unconcentrated juices, desserts, sauces, nectars, pulps, jams and jellies, sometimes processed as dehydrated and frozen fruit. Products are vacuum-packed or frozen, (SIPSA, 2012).

The agroclimatic conditions of Colombia allow a great variety of fruits and vegetables to be produced that mix well with raw materials in order to offer a variety of products (PROEXPORT, 2012).

Colombia has great export potential for its production of tropical fruits, which are sought after abroad. In particular, the market for "rolled dehydrated pulps" is a niche that is not yet being covered by other countries because it is a relatively recent development product whose target market are countries such as Germany, the United States, Canada and alternatively to Spain, Japan and the Andean Community.

Within the techniques of food measurement and analysis is the sensory evaluation that is as relevant as the chemical, physical and microbiological characterization. These sensory evaluation techniques are as scientific as those of other types of analysis, since they are validated with statistics, physiology, psychology and other areas of knowledge (Anzaldúa, 1994). Obtaining products that retain their nutritional content and organoleptic properties make life-cycle research be based on ensuring that all parameters are within permissible limits.

Therefore, the objective of the present work was to characterize physicochemically and to evaluate sensorially the dehydrated pulps of passion fruit on sheets, obtained under different temperatures and drying air velocities.

2. MATERIALS AND METHODS

2.1 Raw material

The fruits of yellow passion fruit used for the present study were cultivated in the municipality of Granada (Department of Meta, Colombia), a place at an altitude of 390 meters above sea level, with annual mean temperature of 24.8 °C and annual precipitations oscillating between 2,400 and 2,800 mm. In the tests fruits were used in good quality, making the selection with the aid of color tables of the states of maturity corresponding to the states 2 and 3, of greater commercialization and in which the organoleptic maturity is reached (Bahamón, 1999). The pulp of the selected fruits was obtained, preserved and dehydrated at the facilities of the Pilot Plant of the Institute of Science and Technology of Food ICTA of the National University of Colombia - Bogotá.

For the drying of the pulp of passion fruit, a equipment was built following the recommendations given by Perry, Green and Maloney (1997), with drying air speed between 120 and 300 m min⁻¹, in order to improve the coefficient of heat transfer and to remove pockets of stagnant air. The trays were made of stainless steel in order to improve heat transfer and handling. The free space between trays was greater than 38 mm.

2.2 Physicochemical characterization of passion fruit fresh pulps

The characterization of the fresh pulp of passion fruit was made prior to the drying tests. For this purpose, three replicates, each with 10 fruits, were used to determine moisture content, using a vacuum oven and applying AOAC OM934.06, Association of Official Analytical Chemists (AOAC) (1998); Titratable total acidity was determined by titration according to AOAC OM942.15; Determination of total soluble solids was performed using a Kikuchi portable analogue refractometer (Kikuchi Precision Optics, Osaka, Japan) with a scale of 0 to 30 ± 0.2 °Brix; Viscosity was determined according to the methodology described by Castro (1990); pH was determined using the Pearson's modified method (1993).

2.3 Obtention of dehydrated passion fruit pulps in sheet

Dehydration of passion fruit pulp was performed under the following static-layer drying conditions: temperatures of 50 °C and 65 °C, in combination with three hot air speeds: 178.3 m min⁻¹ (air flow 0.151 m³ s⁻¹), 206.1 m min⁻¹ (0.175 m³ s⁻¹) and 234.1 m min⁻¹ (0.198 m³ s⁻¹); Six treatments were performed with two replicates, for a total of twelve trials, according to a completely randomized experimental design with factorial arrangement. Approximately 500 g of pulp was placed in each of the trays, previously coated with stretch film, in order to be able to easily remove the dehydrated product.
In each test, four trays were simultaneously dehydrated, taking the weight of two of them each hour, until the weight corresponding to a final moisture content of 11% on wet basis (wb) (0.123 on dry basis (db)).

2.4 Physicochemical characterization of dehydrated passion fruit pulps in sheet

The moisture content was determined on the dehydrated pulp using a vacuum oven (AOAC standard OM934.06); water activity was determined with the Novasina BSK equipment; for titratable acidity AOAC OM942.15 was applied, pH was determined using the modified method of Pearson (1993) and a micrometer was used to determine the thickness of the dehydrated fruit sheet.

2.5 Proximal analysis of fresh and dehydrated pulps on sheet

Proximal analysis to the fresh and dehydrated pulps was performed, and then were determined: moisture (AOAC OM934.06), fat (AOAC OM920.39), crude fiber (AOAC OM96209), protein (AOAC OM954.01), (AOAC OM942.05), carbohydrates by difference calculation, and energy expressed in kcal (100 g)\(^1\) using the indirect calculation Atwater Factor.

2.6 Sensory analysis

The sensorial evaluation of the dehydrated pulps was carried out applying a scale and descriptive test with the help of a sensorial panel made up of four (4) trained judges. The samples were obtained from the treatments at the drying temperatures of 50 °C and 65 °C for the three airflows used, for a total of six treatments, in order to be able to compare the results for these conditions. Samples were randomly encoded, and were served at room temperature. The information corresponding to the description of the composite scale for qualifying the quality factors of each dehydrated passion fruit pulp was recorded in the instrument used for sensory evaluation, as shown in Table-1.

Table-1. Description of quality factors for sensory evaluation of dehydrated passion fruit pulp in sheet.

<table>
<thead>
<tr>
<th>Appearance and color</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7 to 5) Characteristic color of the fruit, natural, bright, intense, absence of foreign matter, homogeneous, complete uniform edges.</td>
</tr>
<tr>
<td>(4 to 3) Slightly dark, opaque, inhomogeneous, with bubbles</td>
</tr>
<tr>
<td>(2 to 0) Non characteristic color characteristic, brown, browning, artificial, with skin residues, black or strange particles to the fruit.</td>
</tr>
<tr>
<td>Aroma and flavor</td>
</tr>
<tr>
<td>(7 to 5) Characteristic to passion fruit, good sweet acid balance.</td>
</tr>
<tr>
<td>(4 to 3) Very sweet or tasteless, residual taste, metallic.</td>
</tr>
<tr>
<td>(2 to 0) Non characteristic, caramel, burnt, astringent, moldy, bitter.</td>
</tr>
<tr>
<td>Texture</td>
</tr>
<tr>
<td>(6 to 5) Soft, gummy, chewy.</td>
</tr>
<tr>
<td>(4 to 3) Very hard, rubbery, sticky, tough, leathery.</td>
</tr>
<tr>
<td>(2 to 0) Dry, rough, grainy, sandy.</td>
</tr>
</tbody>
</table>

The data obtained in the sensory tests were subjected to an analysis of variance, applying a bifactorial design (Factor 1: Temperature (°C) and Factor 2: air speed (m min\(^{-1}\)) with a 2x3 factorial structure composed of four replicates. Graphs of interaction between treatments in order to evaluate the effects among the evaluated factors were obtained.

3. RESULTS AND DISCUSSIONS

3.1 Characterization of fresh passion fruit pulp

The average characteristics of fresh passion fruit pulps, used in the drying tests, are presented in Table-2. Pulp corresponded to 32% of the fresh weight of passion fruit, a value that falls within the ranges reported by Nascimento, Ramos and Menezes (1999) for yellow passion fruit, who indicate that the fruit has a pulp content that varies between 15.1% and 44.6%; According to Dussan and Sanchez (1997), pulp and juice of passion fruit represent 42% of the fruit in fresh state, and according to De la Cruz, Vargas, Del Angel, and Garcia (2010), the juice yield varies from 41.53% to 42.57%. There are also reports in Brazil that present a lower yield than that found in the present study, such as those presented by Abreu et al. (2009), these authors found values of pulp content between 17% and 24% for five evaluated genotypes and Negreiros, Álvares, Bruckner, Morgado and Cruz (2007), who report an average value of 26.5% in pulp yield for yellow passion fruit. These differences in pulp yield can be explained by different edaphoclimatic conditions, given the tropical conditions of the cultivated areas in Colombia, where there is greater luminosity and a better distribution of precipitations throughout the year, factors that have a marked impact on the crop yield, as well as on pulp yield (Cavichioli, Ruggiero and Volpe, 2008).
Table-2. Physicochemical parameters of fresh passion fruit pulp.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Passion fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp yield (%)</td>
<td>32.00</td>
</tr>
<tr>
<td>Pulp water (% Mw)</td>
<td>84.00</td>
</tr>
<tr>
<td>Viscosity (mPas)</td>
<td>1.79</td>
</tr>
<tr>
<td>Density (g.cm⁻³)</td>
<td>1.09</td>
</tr>
<tr>
<td>pH</td>
<td>2.90</td>
</tr>
<tr>
<td>Soluble Solids (ºBrix)</td>
<td>15.00</td>
</tr>
<tr>
<td>Acidity (% Citric Acid)</td>
<td>4.42</td>
</tr>
</tbody>
</table>

Water content, viscosity, density, pH, total soluble solids and titratable total acidity are similar to those reported for yellow passion fruit pulp by other authors (Vaillant et al., 2001; Vera et al., 2009). In relation to pH, an average value of 2.9 was found, which is within the values reported by Fortaleza (2002) and Abreu et al. (2009), corresponding to the interval between 2.5 and 3.1. As for total soluble solids, the average value found of 15 ºBrix is higher than that reported by Abreu et al. (2009), who indicate a variation between 12.68 and 13.57 ºBrix for the five genotypes that they evaluated. The titratable total acidity (% citric acid) presents an average value of 4.42%, which is within the range of 2.9% to 5.9% reported by Fortaleza (2002); However, Abreu et al. (2009) mentioned that the titratable total acidity for the five genotypes evaluated ranged from 6.46% to 7.24%, values higher than those found in this study (4.42%). Such variations in values are possibly explained by differences in latitude, edaphoclimatic conditions, fruit maturity, and seed origin (Oliveira, 2001). It can be concluded that passion fruit of this study presents a good performance in pulp with high content of total soluble solids and low titratable acidity content, constituting an excellent raw material for industrialization, possibly requiring the addition of acidifiers to the juice for its industrial processing (Nascimento et al., 1999). According to De la Cruz, et al. (2010), the pH ranges from 2.94 to 3.5; acidity from 2.02 to 3.42%; soluble solids from 15.26 to 16.09 ºBrix; density 0.95 to 1.06 g ml⁻¹; and yield in juice from 41.53 to 42.57%.

The proximal analysis of passion fruit pulp presented mean values of 0.0% fat content, 0.17% crude fiber, 0.0% protein, 0.6% minerals, 13.4% carbohydrates, and energy 53.5 Kcal (100 g)⁻¹.

3.2. Characterization of the dehydrated passion fruit pulp

The pH of the dehydrated pulp presented a similar value to the fresh product, while the titratable acidity showed a 500% increase with respect to the acidity of the fresh pulp. According to Vaillanter et al. (2001), this behavior is expected for the processes of dehydration of yellow passion fruit pulp. Water activity of the dehydrated pulp had a range between 0.45 and 0.59, which makes it possible to consider that the dehydrated products obtained with this procedure have a good storage behavior and very low probability of attack by pathogenic microorganisms. Sheets of the dehydrated pulps had an average thickness of 0.8 mm, while the initial thickness of the fresh pulp was approximately 10 mm. The yields obtained for dehydrated passion fruit were 17.5% with respect to pulp and 5.5% with respect to the fresh product, including the peel.

Dehydrated passion fruit pulps presented values of moisture content varying between 9.4% and 12.0% wb, 0.0% fat, crude fiber between 0.7% and 0.9%, protein between 5.2% and 6.0%, minerals between 2.7% and 4.0%, carbohydrates between 78.5% and 81.2%, and energy between 338 and 341 kcal (100 g)⁻¹. As can be appraised, the final moisture content is below 12% wb (0.136 db), which corresponds to the expected moisture content to ensure product preservation in prolonged storage. On the other hand, an increase in the carbohydrate content was verified, due to the concentration of the total soluble solids, which results in a product with greater caloric content.

3.3 Sensory analysis of dehydrated pulps.

The consolidated information, derived from the rating instruments used by the judges of the sensory panel, is presented in Table-3 and Table-4.

Table-3. Consolidated judges’ qualifications to the quality factors of passion pulp dehydrated in sheets at 50 °C.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T1V1</th>
<th>T1V2</th>
<th>T1V3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judge</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Appearance and Color</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Aroma y Flavor</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Texture</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Where: T1V1: passion fruit pulp dehydrated at 50 °C and 178.3 m min⁻¹ T1V2: passion fruit pulp dehydrated at 50 °C and 206.1 m min⁻¹ T1V3: passion fruit pulp dehydrated at 50 °C and 234.1 m min⁻¹
Table-4. Consolidated judges' ratings on the quality factors of dehydrated passion fruit pulp in sheet at 65 °C.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T2V1</th>
<th>T2V2</th>
<th>T2V3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judge A</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Judge B</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Judge C</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Where:
T2V1: passion fruit pulp dehydrated at 65 °C and 178.3 m min⁻¹
T2V2: passion fruit pulp dehydrated at 65 °C and 206.1 m min⁻¹
T2V3: passion fruit pulp dehydrated at 65 °C and 234.1 m min⁻¹

In the analysis of variance shown in Table-5, it can be seen that the pulps dehydrated in sheets are statistically equal indicating that the temperatures and speeds used do not exert a sensorial influence that can be perceived in the sensory evaluation of the factor "Appearance and color".

Table-5. Appearance and Color.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>P</th>
<th>Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>0,60</td>
<td>1</td>
<td>0,60</td>
<td>0,60</td>
<td>0,4496</td>
<td>4,41</td>
</tr>
<tr>
<td>Air Speed</td>
<td>4,20</td>
<td>2</td>
<td>2,10</td>
<td>2,09</td>
<td>0,1531</td>
<td>3,55</td>
</tr>
<tr>
<td>Interaction</td>
<td>8,00</td>
<td>2</td>
<td>4,00</td>
<td>3,97</td>
<td>0,0372</td>
<td>3,55</td>
</tr>
<tr>
<td>Error</td>
<td>18,13</td>
<td>18</td>
<td>1,01</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>30,94</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

In Figure-1 the interaction effect is shown, which indicates that the two factors intersect each other, demonstrating that there is interaction between temperature and drying rate. Because of this, the evaluating judges perceived a characteristic color of the fruit, natural, bright, intense, absence of foreign matter, homogeneous, complete uniform edges, which do not present variations in the evaluated treatments.

The "Aroma and flavor" factor does not present statistically significant differences, as shown in Table-6; that is, the evaluating judges could not perceive the changes in this parameter for the different treatments implemented in the research.

Table-6. Aroma and flavor.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>P</th>
<th>Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>0,04</td>
<td>1</td>
<td>0,04</td>
<td>0,06</td>
<td>0,8024</td>
<td>4,41</td>
</tr>
<tr>
<td>Air Speed</td>
<td>0,08</td>
<td>2</td>
<td>0,04</td>
<td>0,06</td>
<td>0,9377</td>
<td>3,55</td>
</tr>
<tr>
<td>Interaction</td>
<td>0,08</td>
<td>2</td>
<td>0,04</td>
<td>0,06</td>
<td>0,9377</td>
<td>3,55</td>
</tr>
<tr>
<td>Error</td>
<td>11,63</td>
<td>18</td>
<td>0,65</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>11,83</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

When analyzing the interaction of factors taking into account the averages of the scores for this quality parameter, it can be observed that there is no interaction effect between them, because the values are similar existing on position at the cut-off points of the two lines, as shown in Figure-2. Additionally, the pulp dehydrated at a temperature of 65 °C, with a speed of 234.1 m min⁻¹ is the one that presents better qualification in terms of aroma and flavor. In their observations the judges suggest that the product may have a lot of acceptance in the consumers of child age for its hyper acid taste.

Table-7 shows that the degree of acceptance of the judges considers that there is no variation in the qualification of the factor "Texture".

Table-7. Texture.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>P</th>
<th>Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>0,09</td>
<td>1</td>
<td>0,09</td>
<td>0,19</td>
<td>0,6669</td>
<td>4,41</td>
</tr>
<tr>
<td>Air Speed</td>
<td>0,58</td>
<td>2</td>
<td>0,29</td>
<td>0,60</td>
<td>0,5617</td>
<td>3,55</td>
</tr>
<tr>
<td>Interaction</td>
<td>1,00</td>
<td>2</td>
<td>0,50</td>
<td>1,02</td>
<td>0,3801</td>
<td>3,55</td>
</tr>
<tr>
<td>Error</td>
<td>8,81</td>
<td>18</td>
<td>0,49</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>10,49</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

According to the above, the evaluation shown reflect that the texture was graded as very hard, rubbery, sticky, tough, leathery. However, as shown in Figure-3, for the "T1V1" and "T2V3" treatments the judges' scores describe that the dehydrated pulps have a soft, gummy and with a chewy texture.
CONCLUSIONS

a) Temperatures and air speeds used do not exert a sensorial influence that can be perceived in the evaluation of the quality factors, that is to say, the scores given by the judges did not reflect statistically significant differences among the six treatments. However, the treatments with the highest degree of acceptability are: dehydrated at 50 °C and 178.3 m min\(^{-1}\); and the dehydrated at 65 °C and 234.1 m min\(^{-1}\).

b) As for the "Aroma and flavor" factor, the sensory panel ranked higher the treatment of passion fruit pulp dehydrated at 65 °C with an air speed of 234.1 m min\(^{-1}\). For the quality factor "Appearance and color" the average marks differs by 5%; and 7% in "Texture"
with that of passion fruit pulp dehydrated at 50 °C and
178.3 m min⁻¹.
c) The performance of the products obtained in terms of
their conservation parameters was satisfactory. Water
activity found in the dehydrated product allows
predicting a good storage behavior and very low
probability of being attacked by pathogenic
microorganisms.

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