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Physicochemical Properties and Sensory Attributes of a Nectar Made with Juice of Patito Orchid (Oncidium Bifolium) and Native Papaya (Carica Pubescens) Pulp

*Rojas Martel, Gabriel.
Universidad Nacional HermilioValdizán Medrano, Huánuco – Perú

Abstract:- The objective of the research was to evaluate the physicochemical properties and sensory attributes of a nectar made with duckling orchid (Oncidium bifolium) juice and native paya (Caricapubescens) pulp, the process was carried out conventionally using an experimental approach at the University National HermilioValdizán. To carry out this process, the Duckling Orchid N1, N2, N3 was evaluated, in addition 3 levels and a comparative control for the nectar were formulated, which were composed of T0 = control, N1 = 40 and 60%, N2 = 60 and 40%, N3 = 50 and 50%. The physicochemical results of the duckling orchid were °Birx of 2.40 ± 0.10, pH 6.3 ± 0.15, titratable acidity 0.97 ± 0.12, Ashes 5.2%, humidity 86% with the method (AOAC, 1993; 1995 and 2000): In such a way, proceeded for the elaboration of the drink obtaining results as follows; In the physicochemical analyzes the 4 levels are similar, they meet the parameters according to the Peruvian Technical Standard, in the microbiology evaluation there are no pathogenic elements such as coliforms and molds, in the sensory evaluation according to the semi-trained Panelists in smell, taste, color predominates the (T0,19P; 16p; 19p) (N1, 11P; 11p; 16p), in texture N2 = (T0, 16P and N2 16P). It is concluded that the control predominates in smell, flavor and color, in N2 texture there is no difference, thus N1 is the best treatment.

Keywords:- *Levels; Pulp; Orchid; Duckling; native papaya; Drink.*

I. INTRODUCTION

The experimental research was to evaluate physicochemical, microbiological, organoleptic and the elaboration of nectar based on duckling orchid juice (Oncidium bifolium) and native papaya pulp (Caricapubescens), the duckling orchid known by locals (shaka-shaka); The physicochemical analyzes were carried out in the quality control laboratory, since it was not a pseudobulb applied in beverages and less a known product for final consumption, so the AOAC (1993) method was used.

The beverage industry such as nectar is more consumed by society, which has been seen as convenient to improve with native products from the Huánuco region in food processing to improve quality, and make it a healthy nectar with fruits. exotic. In Peru, as in other countries of the American continent, it is known whose name in Spanish is; Papaya de monte, Papaya Andina, Papaya arequipeña, Papaya nativa, Papaya alta or de frio, Papayitaaromatica, and in English: "mountain papaya", some focused high areas of the country, it is known that the locals consume the fruits canned in syrup, candied, stews, etc (Lieb et al., 2018).

The fruit is a berry from 10 to 15 cm, juicy, yellow in colour, with five sides, turning green and yellow when ripe; The center is hollow and is occupied by seeds wrapped in a mucilaginous tissue (Hernández et al., 2017). The fruits take between 3 and 4 months to mature in cold regions, and then develop a sweet fruity aroma when fully ripe (Ortega and Mayanquer, 2018).

To extract the seed, the fruit must be carefully cut transversally or circularly at the height of the pulp so as not to damage the seeds, then soak them and wash them with plenty of water at room temperature (Da Silva et al., 2018). It recommends harvesting the fruits with physiological maturity (°brix/acids) and packing them in plastic or wooden crates to avoid crushing, since this fruit is furrowed and has a very thin membrane, farmers in the highlands harvest ripe fruits to take them to agricultural fairs to offer them to the citizens of the area (Díaz, 2017).

To extract the seed, the fruit must be carefully cut transversally or circularly at the height of the pulp so as not to damage the seeds, then soak them and wash them with plenty of water at room temperature (Da Silva et al., 2018). It recommends harvesting the fruits with physiological maturity (°brix/acids) and packing them in plastic or wooden crates to avoid crushing, since this fruit is furrowed and has a very thin membrane, farmers in the highlands harvest ripe fruits to take them to agricultural fairs to offer them to the citizens of the area (Díaz, 2017). The ripe fruits are used in family confectionery, in the preparation of jellies, flambés, juices, smoothies, drinks, jams, fruit salads, obtaining latex used in contact with the skin to remove warts, and the fruit in wart treatments. arteriosclerosis. In the textile industry, the production of carotenoid dyes has recently been launched with applications in the production of cosmetics and concentrated feed for animals (agroinformacion, 2017).

The enzyme content of papain as it is also added to desserts, cakes, jams and ice creams, or to savory dishes such as soups, stews, fruit fillings, vegetables, used to tenderize meat, the numerous seeds can be eaten together with the pulp, and have a spicy and slightly acidic flavor

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(Rodriguez, 2019). When the fruit is packaged, it should be stored in cold rooms with temperatures not less than 12 ºC, a temperature of 13 ºC is recommended with a relative humidity of 85 - 90%. With these conditions, the duration of the high-altitude papaya is prolonged by to a maximum of two weeks (Ballen and Coronel, 2014).

High levels of vitamin A, including lutein and zeaxanthin, which can help reduce cataract formation and macular degeneration, also contains folate, chlorate, phosphate, magnesium and iron, high levels of fiber and some vitamin C, has a proteolytic enzyme, which have the property of dissolving proteins, the in vitro bacterial activity of benzyl isothiocyanate obtained from high altitude papaya seeds has been demonstrated against helicobacter pylori (Ballen et al., 2014).

- *The Duckling Orchid (Oncidiumbifolium).*

Known by the name of SHAKA SHAKA in the high mountains by the inhabitants of the area, this fruit is little known in our country, since I have observed from the heights of my land that I was born in the minor populated center (CPM) Cochatama, district of Huácar and department of Huánuco Peru. It is an exotic fruit that lives at an altitude of 2,500 to 3,000 meters above sea level, its rinds are green, inside it is whitish, in addition, it contains water in large quantities, the fruit is located in the upper part near the root, always the lower part must be wrapped with its roots, the yellow flower comes out of the side of the fruits, in such a way that it draws attention when moving with the wind, its color is very striking, in summer times it can be observed during the sunlight, flowering increases in the months of April, May and July (Trópicos, 2018b).

There are 330 species; The wild orchid genera is also popularly known as the dancing lady for having the shape of an animal "duck", that is, in its flowers it has the shape of a duckling, this is because the flowers of this plant with the force of the wind move simulating like a dancer, the flowers are yellow, which is a characteristic aspect within the genus and the main pattern when differentiating them from other genera (The Plant List, 2017c). Orchids belong to the Orquidaceae family, most of them are epiphytes, that is, they grow on trees within the plant kingdom, they are the most evolved plants, they are very striking for their flowers since they have different colors, shapes, and aromas (Ramya et al.,2018). With respect to their reproduction, germination in orchids represents one of the greatest limitations for their survival, since the endosperm is reduced in some species, while in others it is absent, to ensure their germination it is necessary for the seeds to be associated with mycorrhizal fungi that provide them with nutrients (Hernández et al., 2017).

Orchids, it is estimated that only about 6 % of higher plants have been studied to verify their biological activity and of these, 15 % have a phytochemical study (Robles et al., 2016). Secondary metabolites are complex substances, used as active principles in the pharmaceutical industry, they present a pharmacological or physiological action on the organism, the economic value of secondary metabolites is very high compared to primary metabolites (Morales et al., 2016).

Within the Orchidaceae family, it is also considered the most diverse family in monocotyledons, it has species with a wide range of applications, cosmetics, drugs and perfumes (Sut et al., 2017). In the Caucaea Genus they are epiphytic plants, they can grow above 2500 meters above sea level and are distributed in the American continent (Szlachetko and Kolanowska, 2015). Within this genus there are 51 species reported to date (The Plant List, 2017b). In ancient times, orchids were used in traditional practices for the treatment of diseases, especially with an antagonistic function of tumors; Therefore, it has been linked to the investigation of new medicines, a factor that has increased knowledge about them and their sustainable consumption (Marjoka et al., 2016).

The Duckling Orchid has a high content of medicine and ancestral knowledge, in such a way that emphasis is placed on the healing properties of orchids, throughout the 21st century, scientific knowledge and pharmacological development evolved, opening the way to the world of medicine and medicine. pharmaceutical chemistry (Pant, 2015). The genus Epidendrum is used in the American tropics to treat lip sores, various Orchids are used for the treatment of infectious diseases and infertility, they are used as wound healing agents, Orchid tubers to treat kidney and urinary disorders is beneficial for human persons (Sut et al., 2017). The species Epidendrum chlorocorymbos, Epidendrum anisatum, Epidendrum tuberosum used in the treatment for dysentery, hyperthermia, abdominal discomfort; Epidendrum chlorocorymbos leaves are used for the purpose of balancing the cardiovascular system specifically cholesterol levels; it encourages sleep and is used as a treatment for ear pain, in addition the pseudobulbs of Epidendrum bifidum have been used to expel "tapeworms" and other intestinal parasites (Bravo and Acuña, 2015). Oncidium cavendishianum is used as an antihistamine, Oncidium ascendens is used as an anti-inflammatory, antioxidant, the ancestral indigenous communities around the American continent there are many medicinal flowers (Bravo and Acuña, 2015). The study carried out in Brazil on Oncidium flexuosum mentions the use of this plant in the process of cauterization and inflammation reduction of injuries, where this action is attributed to the existence of flavonoids and tannins within its composition, the genus Epidendrum is also mentioned for having action antitumor, due to the presence of phenanthrenes in its composition (Cuevas et al., 2016).

Several secondary metabolites have been isolated from orchids, which show a great chemical diversity, it is worth noting the phenolic derivatives, due to their therapeutic use, they have been used for treatments against cancer, inflammation and neurodegeneration (Sutet al., 2017). The main chemical components in this method allow us a rapid, reproducible evolution for the phytochemical, samples can be used that can be from different parts of the plant, such as; leaves, flowers and fruits, this sample can be in various types of solvents and by adding reagents that cause changes in colors depending on the presence or not of the chemical

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components of the duckling orchid (Mencias and Salazar 2018. Secondary metabolites are substances complex, they are used as active principles in the pharmaceutical industry, also in small doses they are used to study biochemical processes (Cuevas et al., 2016).

The difference between the primary and secondary metabolites is that the primary ones have a defined function, in the case of the secondary metabolites they do not have a defined function and not all of them are found in all plants (Robles et al., 2016). The main secondary metabolites present in orchids are: alkaloids, flavonoids, terpenoids and stilbenoids (Marjoka et al., 2016). In different orchids, a significant number of phenanthopyrans and stilbenoids have been isolated (Sut et al., 2017). The presence of saponins and glycosides has also been reported (Marjoka et al., 2016). Nectar is the product made with fruit juice, pulp or concentrate added water, additives and ingredients allowed by international standards, it is a liquid mixture of natural or concentrated fruit pulp, sugar and water for a formula that, in general, it must deliver a finished product of approximately 15 °Brix (Díaz et al., 2016). Fruit nectar is understood to be the unfermented product, which is obtained by adding water with or without the addition of sugars, honey and/or syrups, and/or sweeteners to products or to a mixture of these. Aromatic substances, volatile flavoring components and pulp may be added, all of which must come from the same type of fruit and be obtained by physical procedures (CODEX, 2005). Nectar is a drink made up of the juice and fruit pulp finally divided and sieved, added with water/sugar, and appropriate organic acid is required, the product must be preserved by heat treatment (INDECOPI, 2018).

II. MATERIALS, EQUIPMENT, REAGENTS

The materials used for the preparation and laboratory analysis of the nectar were: 100 ml test tube, 100 ml Erlenmeyer flask, 10 ml pipettes, 150,150 and 250 ml beakers, petri dishes, clamps, shaker, tissue paper, 10 liters and 3 L jugs, sieve, glass containers, spoons, stainless steel ladle, bond paper, pen, stainless steel selection table with 6x3m Formica coating and electricity.

A. Team

Digital Ph-meter, refractometer, titration equipment, industrial blender, stove, autoclave, grammar scale, digital analytical balance. Soxchlet extractor equipment, Kenjdhal digester, muffle, refrigerator.

B. Reagents

Peptone broth, nutrient agar, lactose, brilliant green, ox bile, 0.1 N sodium hydroxide, distilled water, 1% phenolphthalein, 70% alcohol.

C. Supplies.

- **Sugar:** Refined white sugar from the sugar cooperative was used. Drinking water from the department of Huánuco - Peru, is captured from the network of food processes, which is for daily consumption by all citizens, for this, the water from the agro-industrial engineering faculty was used, for the preparation of the drink – nectar.
- **Citric Acid:** Citric acid 1.5g per liter was used, in order to give the products, the right acidity.
- **Stabilizer:** 1g per liter of carboxymethyl cellulose (CMC) was used, which is in the form of a white, high-viscosity HZ 858 type powder.
- **Potassium sorbate:** 0.05g per liter was used, in order to preserve the product, as a bactericidal agent and to extend the useful life of food products.

III. PLACE OF EXECUTION AND METHODOLOGY

This research work was carried out in the department of Huánuco - Peru at 1898 meters above sea level. The first experimental was developed at the agro-industrial food processing plant of the professional school of agro-industrial engineering of the HermilioValdizán Medrano National University (UNHEVAL), located in the eastern central part of Perú, on the continent of América, Av. Universitaria N° 601 -607 Cayhuayna – Pillco Brand.

The physical-chemical analyzes of the raw material were carried out in the bromatology laboratory (control and quality) of the previously mentioned university.

The microbiological analyzes of the final product were carried out in the agroindustrial microbiology laboratory, during the months of June and July.

The present research work was carried out under the following environmental factors, temperature at 22ºC and an average relative humidity of 65 - 70%.

A. Population, sample and analysis unit.

The population was made up of native fruits such as: native papaya and duckling orchid, the sample consisted of 300 ml each container and 5 units in total, each one was used in the same proportions, 4 concentration levels were worked in triplicate, which is 3 treatments, which comes to mean 3 repetitions per treatment.

B. Components in studio.

T_0 = Witness.
N_1: 40% duckling orchid and 60% native papaya.
N_2: 60% native papaya and 40% duckling orchid.
N_3: 50% duckling orchid and 50% native papaya**.**

C. Temperature levels (T°)

S1: environment
S2: cooling -4 °C.

D. Treatment under study

This research work was carried out in the laboratories of analysis by instrumentation, agro-industrial food processes, Microbiology, bromatology and sensory analysis, of the Faculty of Agricultural Sciences of the professional school of agro-industrial engineering of the NATIONAL UNIVERSITY "HERMILIO VALDZAN MEDRANO" (UNHEVAL) – Región.ofHuánuco

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E. Design of the investigation

In the experimental tests, the native papaya (Caricapubescens) and Orquídea patita (Oncidium bifolium) were used in their ripe state, because they present good organoleptic and physicochemical characteristics for processing.

F. Fruits from smaller populated centers.

The native or high-altitude papaya comes from the Ñauza C.P.M, from the Conchamarca district, Ambo province, Huánuco department; The Duckling Orchid comes from the Cochatama C.P.M, in the district of Huácar, province of ambo, department of Huánuco.

G. Water in the beverage industry:

Apart from its own characteristics, the water used in the preparation of nectars and beverages must meet the following characteristics. Drinking quality free of foreign substances and impurities, low salt content; For this purpose, you can resort to the use of equipment that ensures optimal water quality, such as filters and purifiers; The amount of water that must be incorporated into the nectar is calculated according to the weight of the pulp or juice and the characteristics of the type of fruit to be transformed (Barrientos et al., 2018).

H. Water quality indicators

- **Turbidity:** The cloudy appearance of water is a subjective notion related to the visual appreciation of the observer. Turbidity for non-alcoholic beverages should not exceed 0.1 NTU (Nephelometric Turbidity Units); The measurements are expressed in the same units, silica concentration, even when the measured physical phenomenon is different: opacity, contrast effect, combination of transmission and diffusion (Buste et al., 2018).
- **Coloration:** It is appreciated with the help of an optical comparator with reference to a standard range prepared from a chloroplatinic acid solution whose color is modified by the addition of cobalt chloride; In the case of raw water, the color can be measured in a filtered sample with suitable filter paper (Buste et al., 2018).
- **Ph:** Accurate knowledge of the pH is essential in terms of the physical quality and constitution of the materials in the facilities (aggressiveness, corrosion, incrustation) and also in terms of correction treatments. Methods using colored indicators are quick and easy. On the one hand, not only must no mistake be made in the appreciation of the intensity of the color obtained, but its exact hue must be appreciated in the range of changes, the pH for these beverages must be as low as possible (Buste et al., 2018).

I. Formulation of nectars

The preparation of nectars consists of making an appropriate mixture of pulp and sugar syrup acidified with citric acid in such a proportion that it maintains the pH of 3.5 to 3.8, constant throughout the process. The resulting syrup is taken to an industrial kitchen in a stainless steel pot, to be pasteurized later. The mixture to be made between pulp and syrup can be 1:1,1:2,1:3. Of course, the proportion will vary depending on the variety of fruit (INDECOPI, 2018). There are two methods of making nectars, in the first one the refined fruit pulp with acidified sugar syrup of 30° Brix is used. The resulting nectar must be quickly pasteurized at 77°C and bottled; In the other method, an excellent-tasting nectar is obtained by pressing the pulp, obtaining a smooth-textured nectar that retains its characteristic flavor, pasteurized at 82 °C and filled in glass containers (Chávez, 2015).

J. organoleptic

- **Flavor:** Similar to fresh, ripe juice, with no cooked taste, oxidation, or objectionable flavors.
- **Colour and smell:** similar to fruit juice and pulp recently obtained from the fresh and ripe fruit of the chosen variety. It should have an aromatic smell.
- **Good appearance:** traces of dark particles are allowed (INDECOPI, 2018) conduct of research

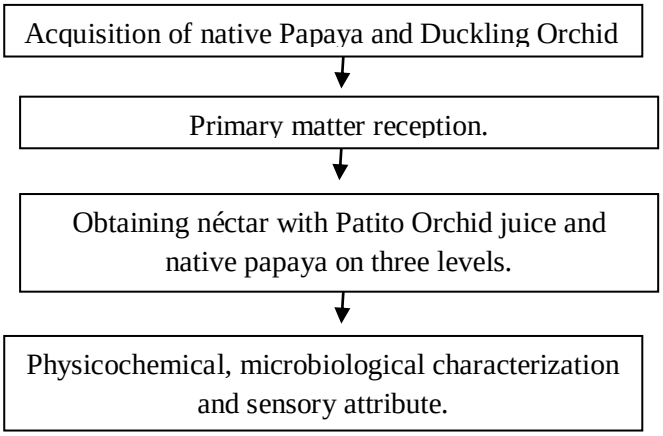

Fig. 1: shows the experimental scheme that will be used to conduct the research.

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K. Description of the technological parameters for the elaboration of nectar

For the elaboration with different levels of concentration of the duckling orchidand Papaya native drink, the flowchart of figure 2 is observed.

- **Selection and Classification.** The raw material was selected through an inspection or visual control, considering the size, color, appearance and the state of maturity. Fruit showing signs of deterioration were not used.
- The high altitude papayas were classified with a pH of 4.5, 4.8, and with a brix degree of 5.4, 6.5, and the duckling orchid with a Ph of 6.0 and a brix of 0.8, this with the purpose that the fruit has better performance during processing.
- **Weighing:** It was carried out on a digital kg scale, this is done in order to determine the performance for which we use the high altitude papaya and the duckling orchid for the elaboration of the nectar.
- **Washing:** It was carried out by immersion in cold water and rubbing the fruit, and then subjected to 0.5% chlorinated water for 5 minutes, the process was submitted in order to disinfect the external part of the fruit, which generally contains Adhered foreign substances from post-harvest, harvest and transportation.
- **Pressing:** The pressing was carried out with a manual mill used to extract juices.
- **Pre-cooking (blanching):** This operation was carried out in order to eliminate the papain and facilitate the processing of the product, firstly, drinking water is boiled in a pot and then the fruit is subjected, once it is at a temperature of 80 °C, from that moment on we controlled the temperature and time for 10 minutes, subjecting the fruit to the water.
- **Chopped into pieces:** This operation was carried out by the manual chopping method, consisting of removing the seed from the fruit,chopping into small pieces allowing ease to enter the next operation, thus obtaining a greater amount of pulp.
- **Blending:** This process was carried out with an industrial blender, where the fruit enters chopped, by the force of the blades it transforms the raw material into juice plus pulp.
- **Sieve:** In this process, some particles such as seeds that may have remained in the jelly are separated.
- **Standardized:** For this operation, drinking water and inputs such as sugar, stabilizer (CMC), citric acid and preservative were used, in order to obtain a drink with high levels of acceptability that complies with the Peruvian Technical Standard. Once the pulp and the juice have been diluted with the water, it is allowed to reach a °T of 30 °C, then CMC is added with the sugar in the proportion of 50%, and then the other part is added, finally the Sodium Benzoate preservative with a dose of 0.05%, in order to preserve and guarantee the microbiological quality of the nectar.
- **Pasteurization:** This operation was carried out in an industrial kitchen, to maintain a constant temperature during the pasteurization of the nectar, whose purpose is to eliminate existing microorganisms in the nectar, it was carried out at a temperature of: 80°C for 10 minutes.
- **Packaging:** It is done with a glass bottle, then it was done using cold water tanks in which the packaged product was introduced, thus causing thermal shock, this process was done manually.
- **Labeling:** This is an operation carried out after packaging with the purpose of describing the content of the product according to the Peruvian technical standard (NTP).
- **Storage:** The product, such as papaya nectar and duckling orchid juice, was stored in the refrigerator for a period of 1 month.

L. Study of the technological parameters for the elaboration of nectar.

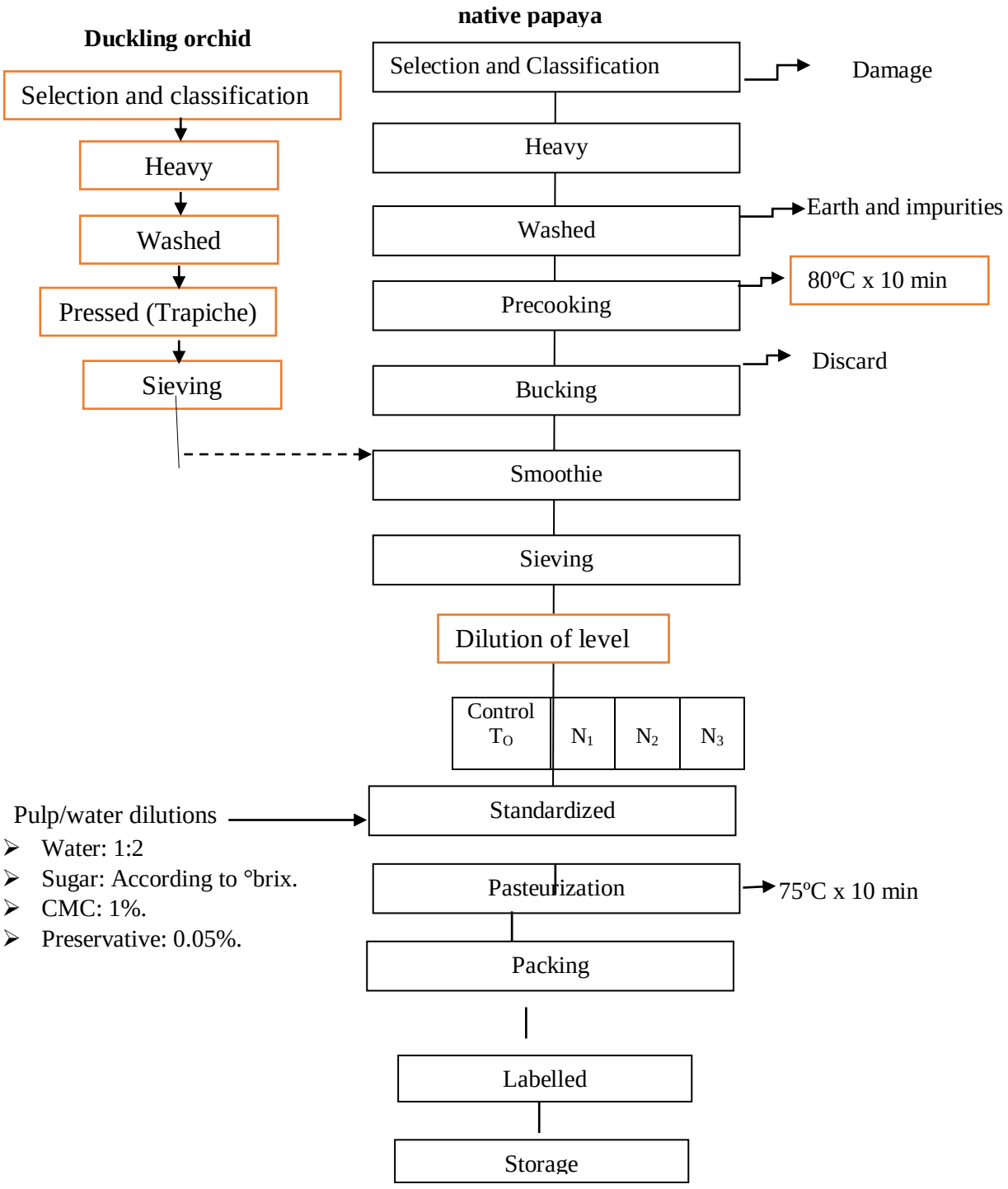

Fig. 2: Shows the flow chart and describes the operations to obtain different concentration levels of the experimented design

Own source

M. Evaluation of the physical-chemical characteristics of the Pseudobulb of the Duckling Orchid juice.

- **Titratable acidity:** 10 ml of the sample was taken, to which 2 to 3 drops of phenolphthalein were added and titrated with 0.1 normal Sodium Hydroxide (Na OH), until the pH reached 8 in the potentiometer, to After being recorded, the cost was 1.5 and was multiplied by the factor 0.6404, expressing the result in grams of citric acid per 100 g of sample AOAC (1995).
- **Soluble solids:** It was determined using a manual refractometer expressed in Brix degrees or sugar percentage, which are corrected according to the temperature formula, AOAC method (1993).
- **pH:** For which, the sample was placed in a beaker and measured with a potentiometer, AOAC method (1993).
- **Ash determination:** Sterilize the crucibles and clamp them into the muffle, then label; 5 g of sample (Duckling orchid) was weighed on the analytical balance in triplicate

in the crucibles, the cut made was in the form of slices; The weights of the crucibles and the sample were noted (weight of empty plate + sample); Next, it was placed in an electric cooker until it carbonized for 20 minutes, when it smokes and has a burnt or calcined smell, each sample was taken to the muffle to be analyzed, which means leaving it for 30 minutes in the muffle at a temperature of 550 at 600°C; Transfer the crucibles in the muffle using the clamp and; leave to cool for 15 to 20 minutes, in the desiccator (hood), finally weigh the crucible (P1) on the analytical balance and note the final weight AOAC (2000); The ash calculation is made using the following formula.$(\%)\text{de ceniza} = \frac{(A - A_0)}{S} * 100$

- **Ao:** weight of the empty crucible in g.
- **A:** weight of the crucible with ashes in g.
- **S:** sample weight in g.

N. Moisture determination.

5 g of sample (orchid duckling) was weighed in triplicate in Petri dishes, cut into slices, The weights of the empty plate and the sample were recorded (weight of the empty plate + the sample), We place the samples in the oven at a temperature of 80ºC for 24 hours until the next day, Then it was removed from the oven and placed in desiccator Durand hoods until cool for 5 min, Report the final weights and perform the corresponding calculations and immediately the following table was observed AOAC (2000); The moisture calculation is calculated by the following formula.

$$\%H = \frac{W_0 - W_F}{P} * 100$$

% MOISTURE = 100 - % dry matter

$\mathbf{W_0}$= Petri dish mass for each sample before drying.

$\mathbf{W_F}$= Mass of the Petri dish plus the sample after 24 hours.

P = quantity of the sample analyzed.

O. Determination of microbiological analysis

The culture medium for (molds and yeasts) method (the most probable number).

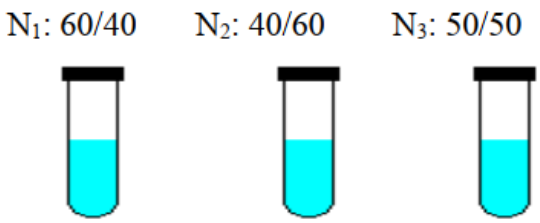

Fig. 3: shows the 3 samples

P. Culture medium for coliforms

(Bright green lactosado broth bile	
Peptone	10g/liter
Lactose	10g/liter
Bile	20g/liter
Brilliant green	0.0133/liter
Total	40.0133 g

Table 1: Shows the culture media used for the microbiological analysis.

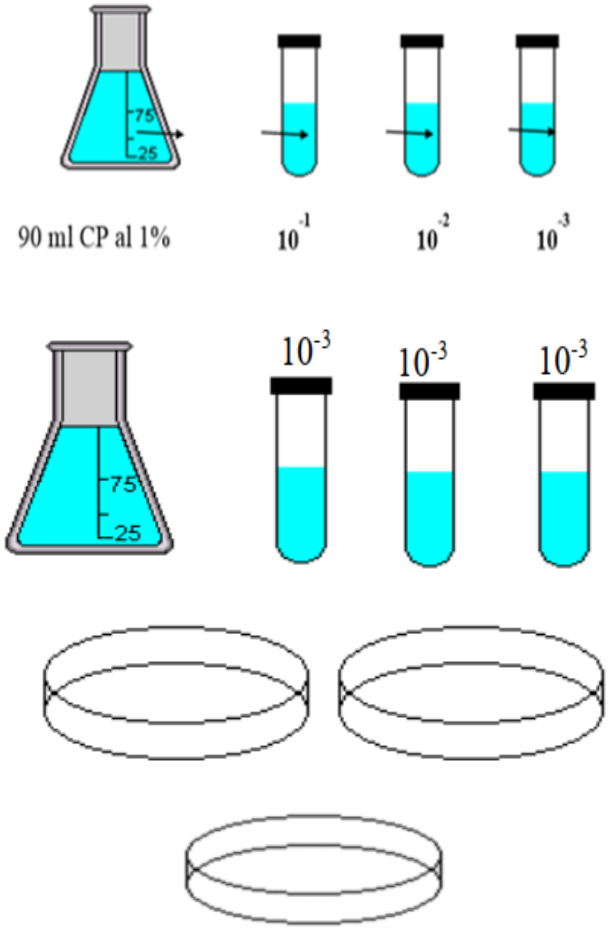

Fig. 4: shows the successive dilutions of the samplesN_1 (10^{-1}), N_2 (10^{-2}), N_3 (10^{-3})

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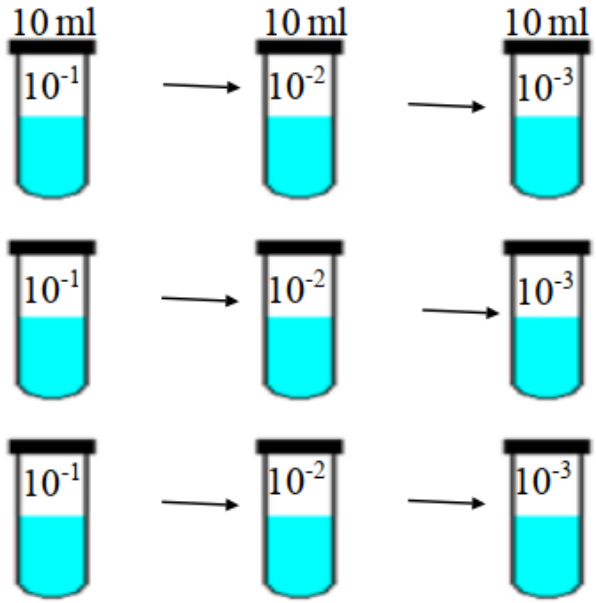

Fig. 5: shows the samples in dilutions for sowing, such as: $N_1(10^{-3})$, N_2 (10^{-3}), N_3 (10^{-3}).

IV. RESULTS AND DISCUSSIONS

Acidity	°Brix	pH	Ashes	Moisture
0.97 ± 0.12	2.40 ± 0.10	6.3 ± 0.15	5.2%	86%

Table 2: Physicochemical analysis of the pseudobulb of the cool duckling orchid

The physicochemical analysis of pseudobulvoorchidea duckling was obtained with °birx of 2.40±0.10, pH 6.3±0.15, titratable acidity 0.97±0.12, ash 5.2%, moisture 86% with the method (AOAC, 2000). It is an exotic fruit that lives at an altitude of 2,500 to 3,000 meters above sea level, its bark is green, its yellow flowers are duck-shaped (Marjoka et al., 2016; Sut et al., 2017). The native papaya is a tropical fruit, they are native to the tropical regions of South America, the fruits are characterized by being highly aromatic (Ramos et al., 2017). The drink was made in the controlled food processing plant with adequate parameters (INDICOPI, 2018).

- *Physical-chemical evaluation of nectar based on Patito Orchid juice and native papaya pulp.*

Treatments	°Brix	pH	Acidity
T_0 (control)	12.56 ± 0.06^a	3.83 ± 0.06^a	0.60 ± 0.03^a
N_1	12.20 ± 0.20^b	3.90 ± 0.10^b	0.53 ± 0.03^b
N_2	12.30 ± 0.26^c	3.78 ± 0.06^c	0.56 ± 0.04^c
N_3	12.43 ± 0.51^d	3.93 ± 0.06^d	0.50 ± 0.03^d

Table 3: The physicochemical analysis of the nectar based on the duckling orchid and native papaya pulp of the three concentrations and the sample, evaluated according to the AOAC (1993), AOAC (1995) and AOAC (2OOO) method

Data represent (mean ± standard error) from the drink (nectar) experiment.

The figure shows the 4 levels of treatments in different proportions of the drink under study, to see which of them adjusts to the NTP. According to the Peruvian technical standard (NTP) the 4 experimental levels of the drink meet the established parameters.

- *Microbiological evaluation of nectar based on duckling orchid juice and native papaya pulp.*

The analyzes of the different levels of the nectar were carried out in the food microbiology laboratory; no pathogenic elements were found, such as coliforms and molds.

- *Sensory evaluation of nectar based on duckling orchid juice and native papaya pulp.*

They were carried out after the first microbiological analysis on the final product, being already suitable for human consumption. The attributes evaluated are: smell, taste, color and texture, for this purpose 20 semi-trained panelists of the 2018 promotion were used, it was carried out according to the hedonic scales in which they evaluated the nectar levels from 1 to 1 according to their preferences. 5 points.

According to the attributes evaluated in the organoleptic analysis, it was possible to observe that the odor has a good characteristic in the control with 19 points, followed by N1 with 11 points. In the same way, in the flavor the control predominates with 16 points, in the evaluated treatments it is followed by N1 with 11 points. In texture and consistency, N2 is more ideal with 16 points compared to the others, the coincidence is observed according to the displayed graph.

In the case of color, the witness predominates with 19 points, and N1 with 16 points. There is no significant difference, but according to the most acceptable figure is the N2 according to the semi-trained panelists.

According to the physical-chemical analysis of the drink in the UNHEVAL laboratory, which could be adjusted to the parameters, that is, there are no significant differences according to the Peruvian technical standard, all are within the range, in pH, °Brix and acidity. titleable. Obtaining (N2) as the best treatment.

The resulting nectar must be quickly pasteurized at 77 °C and packaged at a suitable temperature; In the other method, an excellent-tasting nectar is obtained by pressing the pulp, thus obtaining a smooth-textured nectar that retains its characteristic flavor. The nectar is then pasteurized at 82 °C and filled in glass containers (Chávez, 2015). (Juices, nectars and fruit drinks), soluble solids per reading (°brix) at 20 °C: Minimum 12%; Titratable acidity (expressed in anhydrous citric acid g/100cm3), maximum 0.6; minimum 0.4; sodium benzoate and/or potassium sorbate (alone or together) in g/100 cm3: Maximum 0.05 (INDECOPI, 2018)

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The following figure No. 6 shows the organoleptic characteristics of the nectar according to the semi-trained panelists.

The organoleptic characteristics must comply with the following: The flavor must be similar to ripe fresh juice, oxidation or objectionable flavors. Regarding the smell and odor similar to fruit juice or pulp recently obtained from the fresh and ripe fruit of the chosen variety. It must have a good-looking aromatic odor that admits traces of dark particles (INDECOPI, 2018).

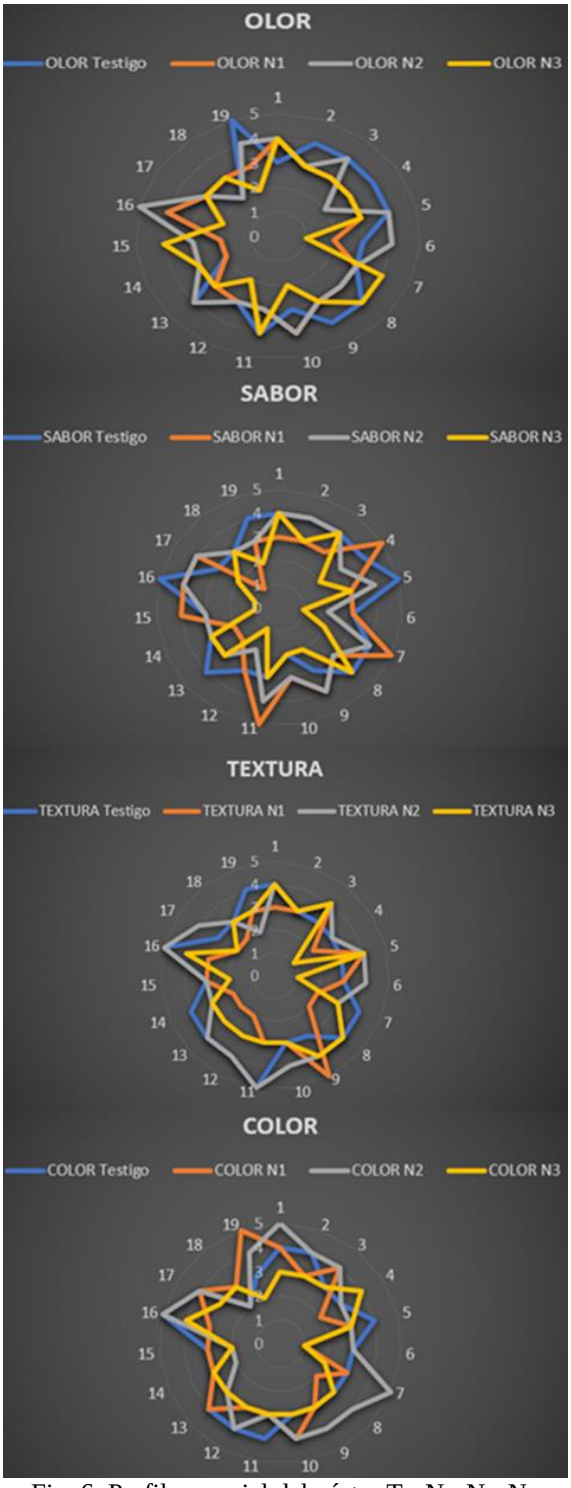

Fig. 6: Perfil sensorial del néctar T_0, N_1, N_2, N_3

V. CONCLUSION

Finally, it was possible to evaluate the physicochemical properties and sensory attributes of a nectar made with duckling orchid (Oncidium bifolium) juice and native paya (Caricapubescens) pulp. Using the mean ± standard deviation test, To, N1, N2, N3. It can be seen that there are no significant differences, since the p-value is greater than 0.5. According to the microbiological analyzes in the nectar carried out, no pathogenic elements were found, such as coliforms and molds. In the organoleptic characteristics there was no significant difference; but according to figure 6 the most acceptable is N1 according to the semi-trained panelists.

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