

MARKET POTENTIAL OF CASCARA TEA FROM CATUR VILLAGE KINTAMANI BALI

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ABSTRACT

The third-wave of coffee, the fascination of single origin coffee products, and the trend for sustainable production and consumption has brought about newfound interest in Cascara tea. Cascara derives from red coffee cherries, typically discarded in the coffee production process. However, with its zero-waste production concept, UUP Catur Paramitha in Kintamani region Bali collects the Arabica coffee cherries to be made into Cascara tea. This research aims to examine this by-product from the coffee production which was recently added to the product palette of can be marketed, particularly in Bali's growing café scene. Mixed methods were used to take a closer look is taken on the acceptance of the taste questioning of the intended target group as well as intended point of sales. From the study it is found that there is potential for the beverage in Bali's café scene found from acceptance of the taste by consumers and interest shown by the interviewed Baristas and restaurant managers. The challenge for the producers, then, is how identify and select the most potential market segments for this product and position Cascara tea among its competitors.

Keywords: Cascara tea, coffee, by-product, marketing, zero-waste

INTRODUCTION

Coffee beans are the main yields of coffee production. There are, however, many other beneficial by-products. One of which is "cascara" also known as coffee cherry tea. It is derived from the dried fruit of the coffee plant, a by-product that is usually discarded after the coffee beans have been taken out. The coffee husks, peel and pulp comprise nearly 45% of the fruit [1]. Annually, approximately 25 million tons of coffee cherry skin is thrown away [2].

If preserved correctly, Cascara can be enjoyed as a herbal tea and is an ideal alternative source of caffeine for those who do not like the taste of coffee. If consumed correctly it provides health benefits, such as antioxidant properties and can therefore be a beneficial food ingredient. However, not all coffee cherries or husks can be made into cascara. Thoughtful planning and care is required when preserving the cherries for making cascara, thus potentially making this a specialized premium drink with various potential benefits.

The consumption coffee cherry tea dates back to the region where Ethiopia is today. After discovering the coffee plant Ethiopian herdsmen (*Kaldi*) began making caffeinated tea out of the fruit. Ever since, a drink made from the coffee fruit has been consumed in Yemen (called *Qishr*) and Ethiopia (called *Hashara*), while Cascara is also consumed in Bolivia under the traditional name of *sultana* [3].

Coffee cherry tea has been consumed as a tea even before the roasted coffee beans we know today were discovered. Historical records suggest that Ethiopians and Yemenis made a caffeinated drink out of the fruit ever since an Ethiopian herdsman discovered the plant [3]. Aida Batlle, a renowned coffee grower from El Salvador is responsible for the recent rise in popularity of Cascara Tea as well as for coming up with the name "Cascara" as it is known today—rather serendipitously as she sensed hibiscus and floral aromas one day when passing some husks that were drying in the sun [4]. At the time of this research, several large coffee chains in the U.S. are selling drinks based on the coffee cherry. Starbucks, for instance, is selling coffee which is sweetened with cascara

syrup while competitors such as Stumpton Coffee Roasters and Blue Bottle Coffee added it as tea or carbonated drink to their menus [4]. In Germany, a caffeinated and carbonated drink called "Club Mate" based on mate tea has become popular in the recent decade. Some start-ups in Germany have seen similar potential for Cascara but faced difficulty due to an EU Food Safety Authorities classified the fruit of the coffee cherry as a novel food stating that the coffee cherry needs to be approved in a complex process before it can be used in production or trade in Germany [5]. Technically, cascara cannot be regarded as a "tea", since it is not made from tea leaves but rather classified as herbal infusion.

Catur village in the popular coffee-producing region of Kintamani Bali has been recognized for its production of Arabica coffee [6]. Recently, the Balinese coffee farmers organized under UUP Catur Paramitha has made an effort to create new products from the "waste" that emerges from the coffee production. After the extraction of the coffee bean, the red fruit (cherry) is dried and used for tea—i.e. "cascara" [7].

The current research aims to determine if cascara tea has a good market potential in Bali and Catur Village should further pursue the production of cascara tea by comparing efforts and expenditure of its production to potential profits. This study gains its findings through qualitative research method by conducting in depth interviews, tastings, and questionnaires with target groups. It also investigates if Catur has first or second-mover advantage in the production of Cascara Tea in Bali, or if any other plantations or coffee shops are already offering cascara in their menus. This research also investigates the current process of gaining Cascara in Catur Village and the possible scale of production as well as different brewing and serving methods of the tea.

METHODS

This study is a participatory action research conducted between March and June 2019. The data collected from the various research methods were analyzed with the help of a SWOT analysis, which focuses on the biggest strengths, weaknesses, opportunities and threats of introducing cascara tea produced in Catur, Kintamani in the Bali market. In the first stage, secondary research on the composition and potential health benefits of Cascara was conducted. In the second stage, a deep interview was conducted by the manager of UUP Catur Paramitha, Mr. I Gusti Ngurah Rupa, to gather information about the production procedure and the zero-waste philosophy behind the production of cascara tea in Catur. Additionally, interviews are conducted with several coffee shop managers and baristas to determine the market potential for Catur's Cascara Tea in Bali's coffee shops/cafés. The interviews were held in the respective place.

Subsequently, a Focus Group Discussion was conducted in conjunction with Cascara Tea tasting, involving 12 participants of the intended target group, which are frequent customers of Bali's cafés, were gathered at "Kedai Bahasa" a small coffee shop in Batu Bolong Street in Canggu. Participants were guests of the café and members of Canggu Community Facebook group, ten of whom were foreigners and two locals. An unmarked sample of Cascara Tea was handed out to each participant together with a printed questionnaire designed to ask the respondents to rate the drink and to descriptively write down their initial reactions to the drink. The data was collected and analyzed using Excel spreadsheet. Following the tasting, the participants were also involved in a discussion about their reactions of the beverage and the market potential of Cascara Tea once they have learned more about this coffee by-product beverage.

FINDINGS AND DISCUSSIONS

Composition and Nutritional Content of the Coffee Cherry

Cascara is a caffeinated drink, although its caffeine content is significantly lower than a comparable amount of coffee. The amount of caffeine varies, much like coffee, since Cascara is a natural product and it depends on the species and geographical origin in which the coffee is produced. The caffeine content of a Cascara brewed with 20g/L that was steeped for 10 minutes came at around 111.4 mg/L, which compared to coffees

in the range of 400-800 mg/L, Cascara only has around 12-25% the amount of caffeine as a comparable amount of coffee [8].

A 2012 study published in the British Journal of Nutrition shows significant increase in levels of brain-derived neurotrophic factors (BDNF) of the coffee fruit compared to coffee. BDNF is a protein in the human body involved in the development, maintenance and function of the central nervous system and various studies have shown a link between BDNF and certain health conditions, such as depression, obsessive-compulsive disorder, Alzheimer disease, dementia and Parkinson's disease [9]. Therefore, the coffee cherry can be considered as having antioxidant properties and beneficial for health if consumed.

Production Process in Catur

In an interview with the manager of UUP Catur Paramitha, Mr. I Gusti Ngurah Rupa explained how they came up with the idea of producing cascara and how the co-op produces it in Catur village. Bali is known for the origin of *luwak* coffee, claimed to be the most expensive coffee beans in the world. *Luwaks* are cat-like animals whose diet include the coffee cherry fruits. Since the beans are not digestible, they get discharged by the animals. Mr. Rupa reflected on why the *luwaks* might be eating the coffee cherry and determined that they must be consuming them for their nutritional benefits.

The berries selected for making cascara are handpicked and chosen by the following characteristics. Firstly, they pick those coffee cherries that are very ripe, meaning dark red in color. Secondly, only those fruits with a thick mucus/pulp are chosen to be processed into cascara tea. There are two types of processes to make cascara that are related to the two processes of coffee making, dry-processing and wet-processing. In Catur both processes are utilized.

Coffee pulp is the by-product obtained from the wet-processing of coffee. The coffee cherries are sorted and handpicked for those with a thicker skin. They are placed in a pulper machine where the skin and most of the pulp are mechanically removed. While the beans, which are still surrounded by a layer of mucilage and silver skin, continue to be processed to make coffee, the next step being "controlled" fermentation, the remains of the fruit are proceeded to dry in the sun for twelve to fourteen days to be used as cascara tea. The end product is called coffee pulp [1].

Coffee husk is the by-product obtained from the natural- or dry-processing of coffee. After careful selection, the fruit are washed in fresh water and thereupon dried indirectly in the sun by laying cotton sheets above them. The indirect drying process helps the preservation of the antioxidant properties of the coffee fruit, as explained by Mr. Rupa. The cherries are sun dried for approximately 24 days, in which natural fermentation takes place within the cherry and separates the bean from the husk (skin, pulp, mucilage and parchment). After the drying process it is crucial to sort the fruits again, since the coffee fruit is prone to mold. After sorting, the coffee husk is gained by putting the dried fruits in a huller machine [10].



Figure 1. Dried Cascara from Coffee Cherries

For the purpose of this study, cascara was used in the form of coffee husk that was obtained from the dry-processing of coffee. According to Mr. Rupa, this version of Cascara has a more difficult process but it is better in quality and stronger in taste since the process is gentler. The coffee husk in Catur is lightly toasted for approximately five to eight minutes and ground for better preservation of the product and enhancement of the taste. The addition of some dried pandan-leaves adds a pleasant fragrance and a typical Balinese touch to the product. The finished loose tea is packaged in a plastic jar for smaller quantities (IDR 25,000.00) or by the kilo for IDR 75,000.00.

Consumer tasting

Subsequently, a focus group and consumer tasting session was held at a Café in Batu Bolong in the south of Bali, called "Kedai Bahasa". The participants were gained through various posts on Canggu community groups on Facebook. The participants were asked to taste the product and proceeded to fill out a questionnaire. The total number of participants was twelve people, of which seven were male and five were female. Ten out of the twelve were foreigners while two were local customers that joined the tasting. It was determined that all participants are frequent café visitors who visit a coffee shop or café in Bali once or more than once a week.

Most of the participants did not know what they were tasting, only four of the twelve participants knew that they were tasting Cascara tea and had previously been informed of the health benefits and the origin of the product. The participants gathered around a table while all received a glass of slightly cooled Cascara tea which had been brewed the previous day. The dried coffee cherry husks were steeped in hot water (approximately 90°C) for fifteen minutes in a ratio of one to ten (approximately one teaspoon to 100ml of water). The participants were asked not to converse with one another until they finished filling out the questionnaire.

The first question related to the taste of the beverage was for the consumers to describe the taste in their own words and mention what comes to mind when tasting it. Three participants correctly determined a fruity taste. Three participants called the drink refreshing and four participants mentioned a mild or light taste while two mentioned slight bitter notes. Two participants expressed that they tasted a mild spiciness. Other keywords that were dropped were: nutty, smoky, taste of dried plums, powerful cinnamon aftertaste.

To the question whether the beverage resembled anything they have tasted before five answered no while two said yes but were unsure of what it was and five expressed a resemblance to brown rice tea, red tea (*rooibos*), green tea and Mate tea which was mentioned twice. Mate tea is a caffeine rich south American infused tea drink made from yerba mate tea leaves [11]. A beverage that has also been marketed as a popular carbonated drink in Europe, especially Germany as previously mentioned.

The intensity was rated by seven consumers as just right while five considered it to be weak. The reason for this rating could lie in the fact that many of the consumers compare the intensity with that of coffee and cascara is less intense if compared to that. But since there is no specific or right method to making cascara the ratios and steep time can be adjusted by individuals to their liking.

Furthermore, the participants were asked to rate the beverage on the following characteristics: sourness, bitterness, sweetness and fruitiness. They were asked to rate these characteristics on a scale from one to five, one defined as "not at all" and five as "very". It revealed that fruitiness was rated highest with an average of 2,50 while sourness was rated the lowest at 1,33. Bitterness had an average rating of 1,92 while sweetness had an average rating of 1,83. That said, 75% of the participants claimed that they prefer unsweetened beverages to sweet ones. It showed that those who prefer sweetened beverages rated the sweetness at 1,33 while the 75% who prefer unsweetened beverages rated the sweetness higher at an average of 2,00 meaning they considered the beverage to have a bit of sweet taste.

The participants were also asked to rate the uniqueness and quality of the product on the same scale that ranges from one ("not at all") to five ("very"). The average rating of the uniqueness was rated at 4,00 while the quality was rated at an average of 3,58, meaning the uniqueness and quality were highly regarded by the participants. The majority of participants (58,3%) were satisfied with the taste of the beverage, while 25% stayed neutral, one out of twelve was highly satisfied and one was dissatisfied with the taste of the beverage.

In terms of being mostly satisfied with the beverage only 41,6% answered that they would likely or highly likely purchase this product if in a coffee shop/café or restaurant. 50% answered that they were unsure while one person, that was dissatisfied with the product claimed it is highly unlikely they will purchase the beverage. Regarding the differences between those who knew and did not know about what they were tasting, no significant differences could be determined. There were better and worse perceived results from both groups.

After the questionnaire and tasting was conducted the content and ingredients of the beverage and the health benefits were revealed to all participants that did not know what they had tried. It revealed that none of the participants heard of Cascara or knew about its properties.

Expert Interviews

In addition to the interview with the producer of Cascara tea, a series of interviews with baristas and managers of cafés in Bali were also conducted to further determine the potential of Cascara based beverages in Bali's café scene. Three café or restaurant managers and baristas were interviewed.

First, an interview was held with I Wayan Dedo Suraya Iagawa, a restaurant manager and head barista of "Duatiga". Duatiga is a Canggu-based café and restaurant located along the main strip of Jalan Pantai Berawa, close to the popular Finns Beach Club. When asked about the strategy and concept of Duatiga, Mr. Iagawa stated that Duatiga first opened in September of 2018 serving just coffee and smoothie bowls. Their strategy was to offer a promotion of free coffee for ten days. A month later they were ready to add food items to the menu, following the same strategy of offering free samples of eight of their food items to the customers. This determined that the customers resonated positively with Duatiga and their products and gained a rapture for the place.

For the purpose of this research a Cascara tea tasting was conducted with Iagawa. Prior to the meeting he has heard of Cascara but it was the first time for him to try the coffee-waste product. The Cascara tea was freshly brewed with the help of a French press by pouring hot water (approximately 90°C) over the loose tea in a French Press, because this allows the tea to float freely in the hot water to get the best taste and aroma. It was steeped for ten minutes, stirred and then the filter was pushed down. His initial reaction was that the tea had a rather weak flavor, because he considers himself as a coffee drinker which in comparison is has a much bitterer flavor. After a second taste when the flavor really unfolded he described sour and bitter characteristics with a note of sweetness. Mr. Iagawa believes that cascara tea could be a popular new menu item and would go about advertising for it in the same way as he had with coffee during the opening week, by giving out some free samples for customers to try.

From review of literature and previous research, it was determined that there is no specific or "correct" method to brewing cascara tea. However, Mr. Iagawa specified that when introducing a new beverage in a coffee shop/ café or restaurant, consistency is key. Therefore, a specific brew needs to be determined for the method, ratio, and temperature. These need to be written out and shared with all staff responsible for making the beverage to ensure consistency with customers. It is also crucial for the quality of the Cascara tea from Catur to stay consistent. Duatiga is also in the works of offering more retail products to be sold at the location such as the coffee beans they use for the house blend, the equipment for their different brewing methods (French press,

Vietnamese drip etc). Mr. Iagawa believes Cascara tea could be a valuable addition to the range.

The second interview was held with Edi Sulawa, a restaurant manager and head barista of "SatuSatu Coffee". SatuSatu was opened in 2015 thanks to the Sudana family, one of Bali's well known coffee producers. The family owned coffee plantations located in Luwak village, Belok, Sidan, Petang and Badung that have been operating since 1985 focusing on producing coffee naturally. Their café is popular for the great coffee they serve and their simple but delicious food.

As with Mr. Iagawa, a simple tasting was conducted with Mr. Sulawa. The method of preparation coincided as well. Even though he had already tried Cascara before, he was pleasantly surprised by the good taste and quality of the Cascara tea from Catur. If the quality can be held consistent, he believes that the beverage can become popular among customers. In his opinion, the customers would likely purchase the beverage if correctly marketed and attention was brought to it. This means flyers, table displays or special offer on menu board can be used as aids. Attention needs to be brought to the origin of the tea and what it is exactly to serves as a unique selling proposition.

Regarding the selling price, Sulawa would suggest the following strategy: In Bali tea in cafés is generally sold at a lower price than coffee. At SatuSatu, currently an assortment of teas is sold in the price range of IDR 15,000.00 to IDR 20,000.00 while coffee prices range between IDR 18,000.00 and IDR 30,000.00. Since Cascara can be considered and marketed as a specialty tea he suggested to set the price at the higher end of the tea price range at IDR 20,000.00. However, he suggested to keep the price lower than coffee as most people that come to the café to consume coffee and are less likely to try a new item if the price is higher than a beverage they already desire and originally came for. When proven to be a popular among the customers a raise in price can be considered. The price of the cascara from Catur is relatively low (IDR 75,000.00 per kilo) and the only other necessary ingredient to make a basic version of the beverage is water. This is why it is nonetheless a profitable item at a lower price.

A third interview was held with Christian Tjahyadi. He has been working as a barista for "Kedai Bahasa" for two years. Kedai Bahasa, compared to the other two cafés, is a small coffee shop with just around 15 seats that focuses on selling beverages. Their food options are limited to pastries from surrounding bakeries in Canggu. Therefore, the approach of selling Cascara should be different from the other two. According to Mr. Tjahyadi, Cascara can be offered as a special offer at Kedai Bahasa. Potentially in combination with a promotion like a set menu of one pastry and one serving of Cascara for a set price. Since the concept is more beverage oriented, different varieties of Cascara could be offered such as cinnamon or ginger infused Cascara tea.

SWOT Analysis

Subsequently, a descriptive SWOT Analysis was conducted. SWOT Analysis refers to an analysis of strengths, weaknesses, opportunities and threats of introducing Cascara Tea as a new product in Bali's café scene. The results have been found through the previously mentioned expert interviews, tasting and questionnaire as well as from the general information on cascara found in the through various literatures.

The main strength of the product lies in the taste. The tasting and results of the questionnaire showed that the taste of the tea made from Cascara was generally well received even though the participants were not yet aware of the beneficial health properties of the product. This therefore shows that once the product is known it has high potential for becoming a popular beverage item on the menu. Considering the health benefits of the tea, which is another important strength, one can market the beverage.

Furthermore, currently not many cafés in Bali are serving beverages base on cascara tea. The coffee shop and roaster "Seniman" in Ubud is one of them. Cascara can consequently be marketed as a new product because it is still an unknown beverage determined by the fact that none of the participants had heard of it prior to the tasting. This could be considered as a weakness but if utilized correctly UUP Catur Paramitha can

use this fact as an opportunity to their advantage and sell their product in a Business to Business (B2B) format. Yet they must consider a very significant threat, which is the fact that it can easily be replicated by other coffee producers and may cafés already have connections to producers and suppliers. Strategically, it would be beneficial for Catur to rely on first mover advantage and try to create a brand association of Cascara and Catur.

Another advantage of Cascara tea is that it coincides with the rising trend for sustainable consumption in regards of it being a by-product of the coffee making process that is usually discarded in traditional coffee production. From observations Bali and cafés on the island are trying to offer more sustainable solutions in regards to waste management and consumers resonate with the trend. If the beverage catches on in Bali's coffee scene one issue and weakness is that it is just a by-product of the more valuable commodity of coffee which is why production is less likely to be adjusted to the advantage of Cascara rather than coffee. It might affect consistency of the product.

Table 1. SWOT Analysis of Cascara Tea from Catur

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none">- Pleasant taste- Antioxidant properties- New product- Low price- Rare to find in Bali's cafés- Trend of "Zero-Waste"	<ul style="list-style-type: none">- Availability (not year-round)- Relatively unknown- Consistency in quality- Recognized just as a by-product
OPPORTUNITIES	THREATS
<ul style="list-style-type: none">- Specialty Product- B2B- First mover advantage	<ul style="list-style-type: none">- If becomes popular, easy to copy- Cafés will ask their coffee supplier to make cascara

CONCLUSION

Cascara tea is not a new product, as it has been around for a long time. But with the new wave of coffee and the fascination of origin and trend for sustainable productions it is becoming more popular around the world. In Bali, UUP Catur Paramitha is one of the first coffee producers to make the tea from the coffee fruit. This research concludes that there is a large potential for Catur to become positively associated with Cascara tea. For this to happen it would need to be marketed properly mostly in business to business way. Through the interviews held with baristas and restaurant managers in three of Canggu's popular locations it was determined that there is an interest for them to sell the product. The target group of frequent café guests in Bali that was questioned to find out the acceptance of taste of the tea revealed that there was an interest and possible future purchasers of the beverage.

To conclude, the Cascara tea from Catur has an optimistic future as a new trend beverage in Balis café scene especially with the rising trend of sustainable offerings. The challenge will lie in the method of persuading cafés/coffee shops and restaurants to purchase the product from Catur rather than producing it themselves. While currently they are still in advantage due to the fact that not many producers have caught on with the trend. It is therefore recommended to act upon this advantage as soon as possible and advised that further marketing strategies are implemented to create awareness of their production and quality. Having said that, it should be considered possibly hire someone as a salesman to bring the product to the points of sale. Further research should be made to determine the most suitable marketing strategy.

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