

COFFEE RESEARCH NEWSLETTER

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Brazil's Coffee Producing Regions

I am nearing the end of my two month journey studying coffee throughout Brazil. My travels began in Sul de Minas, Brazil, which translates to the southern part of the state of Minas Gerais. The coffees in Sul de Minas are mild and sweet. They have a nice body and have a relatively bright acidity for Brazilian coffees. I spent nearly three weeks at Fazenda Monte Alegre, which is one of the largest and best coffee producers in Brazil. The quality control and social programs were outstanding. By carefully monitoring each plot of land and each lot of coffee, they have been able to relate environmental conditions to cup quality. An extensive software system they developed allows the wages of a coffee harvester to be

determined by the quantity harvested, the difficulty of harvesting in that particular region, and the production estimates for the region. I then briefly visited the Ipanema estate near Alfenas, Minas Gerais. Being perched on rolling hills overlooking a vast system of lakes and fields of coffee, it was one of the most beautiful coffee farm I have visited.

My travels in Sul de Minas also took me to Exprinsul (an exportation company), Cooxupe (the largest coffee cooperative in the world), the coffee research laboratory at Lavras University, and Pocos de Caldas to visit the Lambari estate. Although I only visited Lambari for two days, I learned an incredible amount of information from Eduardo

Sampaio, who worked with Kraft foods in New York on coffee and now works as a coffee agronomist. He had a refreshing sense of creativity and a strong passion for coffee, which is essential to specialty coffee production. Despite his vast knowledge of agronomy, he continues to look for ways to improve on traditional methodologies: a challenge I make to all coffee professionals in every sect of this industry. My trip to Sul de Minas culminated in a visit with Marcelo Vieira, the President of the BSCA, whose estate recently produced a coffee rated by Coffee Review to be one of the best in the world.

After Sul de Minas, I ven-

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Coffeeresearch.org Updates

On October 5th almost 300 megabytes of new content will be added to coffeeresearch.org. Almost every page has been updated and numerous pages have been added. Videos describing sample roasting, cupping, classification, strip harvesting, selective harvesting, and classification have been added. As I prepare for my trip to Guatemala to continue studying coffee production I will be adding a significant amount of information making coffeeresearch.org the most detailed coffee site on the web.

The Many Flavors of Brazil

The main purpose of my yearlong study of coffee has been to correlate microclimate, harvesting, processing methods, and social programs to coffee quality. The many flavors of Brazilian coffee are still emerging after the breakdown of the ICO quota system. Today, each region of Brazil is producing a distinctive enhancement to the previously featureless blended coffees under the quota system.

With a free market and the American desire for estate specific coffees, there has been an incentive for producers to produce higher quality coffees. This mentality is spreading, but progress is slow. The Brazilian Specialty Coffee Association (www.bsca.com.br) has done an excellent job with growing specialty coffees and promoting

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tured into the Brazilian Cerrado and visited both Andrade Bros. and Alto Cafezal. Both estates produced excellent natural-processed coffees having a strong body, potent sweetness, and mild acidity. I would consider coffees of this region to be almost essential for an espresso blend. The high altitude and dry climate causes coffee to mature slowly and dry evenly. The soil is poor and rainfall is scarce in this region of Brazil, however the land is flat, fertilizers are readily available, and irrigation systems are easy to implement.

After Cerrado I spent a week learning about the coffees of Bahia through the eyes of Silvio Leite, one of Brazil's best cuppers, at Agribahia estate in Brejões, Bahia. The conditions in Brejões are similar to that of Central America. Sporadic rains lead to multiple flowerings and the humidity is high throughout the year. Therefore, all of the coffees must be selectively harvested (up to ten times per year) and must be dried immediately in mechanical dryers. The result, although expensive to produce, is superb. The coffees I cupped were extraordinarily sweet, soft, and had a very nice body. Silvio Leite is renowned for his cupping skills in Brazil. Kenneth Davids commented after his filming of *A Passionate Harvest* that if a blind man were in the room while Silvio was cupping he would think a plane was landing. Silvio cups strongly which aspirates the coffee onto

the back of the tongue and into the back of the throat. By cupping strongly the coffee passes into the throat and retro nasally where aroma and flavor are tied together. More details on this method and videos of Silvio cupping will be available on coffeeresearch.org in early October.

I will spend next week with Silvio at Lavras University to cup almost 1,000 samples from all over Brazil to help determine Brazil's best coffee for the Gourmet cupping competition. After several cuppers from Brazil narrow the selection down to 150 samples, renowned cuppers from throughout the world will make the final selections. The top ten coffees will then be auctioned on the Internet and are bound to fetch premium prices.

As my trip to Brazil nears an end I will miss the unparalleled hospitality, the great varieties of coffee available, and the wonderful Brazilian culture. In early October I will have extensive details about each of the coffee growing regions of Brazil on coffeeresearch.org including videos of harvesting, cupping, classification, and processing. I am already looking forward to the day I return to Brazil as the idea of specialty coffee is growing and as new regions are being explored as coffee producing areas. The coffee industry in Brazil is changing rapidly for the better and is well worth another look if you have dismissed it as a country that produces coffees suitable only for blending.



Defining Good Brazilian Coffee

The more I travel and the more coffees I cup, I realize that defining the characteristics of a coffee producing country is dangerous and should be done so with reservation. The coffees within a coffee will differ depending on their respective microclimates, and by defining the good attributes of a country you are minimizing the regional distinctions.

In Brazil I find the definition of a good coffee to be balanced and smooth

with good body and sweetness. Although often true, this definition is reminiscent of a time when most regions were blended together to hide more potent characteristics. Strong characteristics, even acidity, should be considered OK in any coffee. The importation and exportation should not necessarily be based upon our evaluation of how near a certain cup is to our preconceived notion, but rather upon its true value.

I would like to see a trend towards defining the characteristics of particular regions within a country and a reversal of the innate desire in humanity to try to define a country's coffee and then seek particular estates that embody this limited definition.

The Many Flavors of Brazil Continued...

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the specialty coffee concept to other growers and consumers.

I have visited estates in Sul de Minas, Cerrado, and Bahia. Estates in Sul de Minas produce natural, pulped natural, and washed coffees. In Cerrado the majority of coffees are naturally processed, whereas in Bahia the high-quality coffees are washed. Processing decisions are not arbitrary, nor subjective. Fermentation is the enemy. The processing method is therefore chosen to combat fermentation during the drying process and promote the natural flavors of the region. In humid areas such as Bahia and Central America, all of the coffees are washed. However, in Cerrado they have found incredible sweetness and body with their

natural dry-processed coffees. The processing method is chosen to exploit the natural characteristics of the coffee. Since each region's coffee has a different flavor profile and the processing method augments this profile, there are a rich variety of coffees available in Brazil.

Unfortunately, most of the Brazilian coffees taste similar in the United States. The main reason is that we roast our coffees too darkly. Brazilian coffees are relatively mild compared to many of the coffees in the world and must be roasted lightly. Secondly, if we continue to buy cheap coffees from Brazil, the exporter will continue to blend different regions to hide more potent characteristics and defective lots. Thirdly, we still view Brazilian coffees as Brazilian coffee. If Brazil were broken up into smaller countries

every roaster would stamp the country name on the bag rather than stamping a nebulous name such as "Brazil". Until we differentiate the many flavors of Brazil, we lack the education necessary to maximize our creative potential. Since the majority of Brazilian coffee is used for espresso, it is essential to understand the particular characteristics of each region and decide if blending is necessary and if so in what proportions.

By October 5th a discussion of flavor profiles related to processing and microclimates will be provided on coffeeresearch.org. These correlations will continue to be made throughout my travels to Guatemala and Costa Rica.

Super (Coffee) Tasters: Implications in Cupping

Scientists have studied tongue maps and flavor perception for years, but increasing evidence suggests that some people are more inclined to perceive tastes than others.

The taste buds on the human tongue responsible for taste perception are located in the papillae, which can be observed with the naked eye. The fungiform papillae are located at the tip of the tongue, the foliate papillae on the sides, and the circumvallate papillae at the back of the tongue. Intensity of flavor perception depends on the density and distribution of the papillae.

There exists a synthetic compound called propylthiouracil (PROP) that some people taste as intensely bitter. To others it is slightly bitter, and for some people it is entirely imperceptible. People who are able to perceive PROP have been dubbed "supertasters" and have a higher number of taste buds than nontasters. The papillae of supertasters are usually tightly concentrated and organized. Conversely, nontasters have a low taste bud density

and papillae are not organized.

PROP sensitivity is genetic and is likely due to a recessive gene. According to a study reported in *Discover* (July 2000), approximately 25% of people cannot taste PROP consistent with people having two recessive genes, 50% of people can taste PROP consistent with one recessive and one dominant gene, and 25% of people find PROP extremely bitter consistent with two dominant genes.

The question of why some people like foods such as broccoli, while others hate it has led to some interesting research relating perception intensity and eating habits. For the most part supertasters avoid strong foods such as broccoli, beer, wine, and even coffee. They perceive sugars and saccharin as sweeter than non-tasters and even find peppers to burn more intensely. Salts are saltier and acids are more acidic. Therefore it is likely that some of the world's best tasters will never become coffee drinkers. The drink is simply too intense. Through training, however, a supertaster may have

Is there a genetic predisposition to being a good cupper?

a superior ability to pinpoint minor attributes of coffee that are imperceptible to others. On the other hand, a supertaster may be overwhelmed by the bitterness of coffee and never be able to sense the minor flavor attributes. Very little research has discussed flavor perception in complex systems in relationship to taste bud density. Since coffee is one of the most chemically complex drinks available, it is unknown whether addi-

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tional taste buds may help a cupper classify a coffee.

Although many people will use PROP to determine if they are supertasters, it is a carcinogen and its use is not recommended. Instead, apply some blue food coloring to the tip of your tongue using a cotton swab. Then cut a ¼ inch hole out of a piece of paper, place it over the tip of your tongue, and count the number of papillae you observe with a magnifying glass. The fungiform papillae remain pink while the rest of the tongue stains blue. Supertasters have over 50 papillae, medium tasters have

15-30, and nontasters have as few as 10 (Tourist, 75). Do you find an uneven distribution of papillae? It is common that the trigeminal nerve could have been damaged by needle penetration during the application of an anesthetic at the dentist. Fortunately, our tongue compensates for this reduced sensitivity in one region with a corresponding increased sensitivity in another region of the tongue. You may also consider tasting potassium chloride (a common salt substitute) and saccharin. If you find both of them bitter tasting you may be a supertaster. Do not be disappointed or overly excited by the test results. As far as coffee experts can tell anybody can become

a good cupper with enough experience and practice. However, I am interested in your results and an area to post your observations will be available on coffee-research.org in early October. I will compile the data and post everybody's observations in early to mid October.

Bibliography and suggested reading:

Tourist in a Taste Lab. Discovery Magazine. July, 2000. 72-27.

Smell and the Olfactory System Overview: <http://www.sfn.org/briefings/smell.html>
Taste Intensity: <http://www.sfn.org/briefings/taste.html#fullsize>

Food Acceptance and Genetic Variation in Taste: <http://www.eatright.org/journal/2000/j0600a2.html>

Tongue Maps: Implications in Cupping

Today scientists have found that the textbook tongue maps are misleading. Although they generally indicate where we perceive sweet, sour, salt, and bitter, the maps are not conclusive. In fact, we can perceive flavors all over our tongue and each person's tongue is different. Some of the more successful cupping programs have trained people to use their knowledge of the regions outlined by tongue maps to help them identify unknown flavors based upon the position of the stimulus. However, since tasting regions and flavor perception varies between people, this methodology is incorrect. In addition the interaction of flavors will enhance and create entirely new flavors. Therefore, it is important to train your tongue to discover your own tongue map and study the relationship between different stimuli.

Understanding your tongue is relatively simple. I recommend gathering some sugar, citric acid, salt, and quinine (available in tonic water). Dilute each sample and paint your tongue in small sections with these solutions using a small tipped paintbrush. Start with the regions other than those indicated on the textbook tongue maps. For instance, de-

termine where on the tongue you can perceive the sugar solution other than the tip of your tongue. The tip of the tongue will be the most sensitive region, but you may be able to perceive aspects of sugar in other places. Next, experiment with various concentrations and compare your results with other people. It is essential to obtain an understanding of your perception ability. Otherwise, our vocabulary to describe coffee will be skewed based upon our genetic predisposition to being supertasters, nontasters, or medium tasters. If you know you are a supertaster and you experience an extremely bitter taste in a coffee, you must realize that 75% of people will not agree with you.

After creating a map of your tongue begin mixing the different flavors together and see how they interact. Do they simply target both regions of the tongue where the stimulus alone would occur or do you perceive entirely new flavors in different regions? Continue experimenting with different combinations until you finally have combined all four together. Have someone else make up blind samples for you to taste. Once you are able to identify each of the components you have effectively mapped

your tongue and trained yourself to be able to approach much more complex systems such as coffee. By using the maps you create for your tongue, understanding your perception ability, and understanding how flavors interact you are more apt to describe coffee accurately and use resources such as the coffee flavor wheel provided by the Specialty Coffee Association of America (www.scaa.org).

