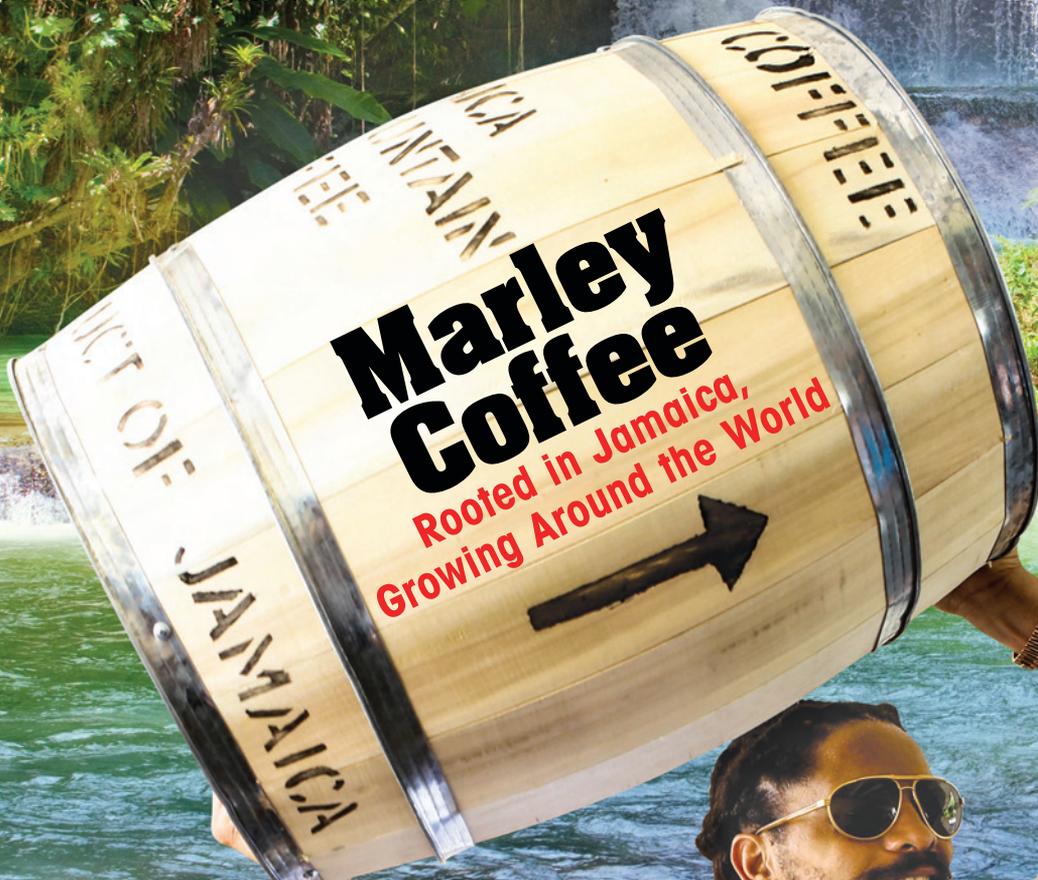


TEA & COFFEE

The International & Trusted Voice of
The Tea & Coffee Industries Since 1901

TRADE JOURNAL

APRIL 2014
www.teaandcoffee.net



- **Strategizing Through Climate Data**
- **Chai's Popularity Grows Worldwide**
- **Food Fraud: The Battle Against Mislabeling**
- **FLAMINIA: Disaster at Sea**
- **Keys to Successful Private Label Coffee**
- **Women in Coffee: Part I**
- **Origin Highlight: Papua New Guinea Part II**

Rohan Marley,
Founder & Chairman, Marley Coffee



FNC Extensionists hold field training workshops with producers.

Using Climate Data to Strategize

Researchers at centers like Cenicafe in Colombia are studying climate change and the affects on coffee growing to help producers adapt to the shifting weather patterns. **By Rachel Northrop**

“Sustainability” is a slippery term on its best day. It is a word that is broad enough to include many activities, initiatives, interests and perspectives. It has certainly become a recent buzzword and is perhaps in danger of the kind of overuse that will eventually render it meaningless. The denotation of sustainability—the capacity to sustain something over an extended period of time—is not necessarily indicative of environmental concerns. The environmental connotation the word “sustainability” carries in the context of coffee and other industries is not at all arbitrary; the capacity to sustain the coffee supply chain over an extended period of time is intrinsically linked to both the environment and climate.

In his presentation at the 24th ASIC conference in San Jose, Costa Rica, in

November 2012, researcher Dr. Peter Baker, with CABI (London) quoted the Club of Rome’s statement that, “we’re in deep denial about the magnitude of global environmental challenges and resource constraints facing the world.” He added, “I’m afraid the same is true of the coffee industry.” The industry consensus seems to be shifting, starting with the acknowledgement that the weather patterns at producing origins are in fact changing and actions are being taken accordingly.

The new consensus is evidenced by the amount of private capital roasters, traders and industry players are investing in establishing truly sustainable supply chains and by the investigative trajectories of the world’s most dedicated coffee research institutions.

Microbiologist with the National

Federation of Colombian Coffee Growers’ research center Cenicafe, based in Chinchiná, Dr. Alvar Gaitán (Ph.D in plant pathology), explained, “what’s happening isn’t so much climate change as climate variation. It’s not enough to just see that the temperature is going up or more rain is falling. We [at Cenicafe] are trying to focus on this variation in the weather as it appears in specific regions, because changes in climate activate diseases that are already here.”

Coffee is an extremely responsive crop at all its stages. Roasted coffee absorbs odors, green coffee absorbs moisture, and coffee trees absorb everything that is—and is not—in its surrounding environment. Absorbing unwanted odors and moisture present risks to quality, whereas absorbing the nuances of the soil in a given terrior poses an opportunity. However, when the factors that make a terrior what it is—wind, total precipitation, distribution of rainfall, hours of direct sun exposure, average temperature, daily temperature range, maximum temperature highs and minimum lows—start behaving in erratic and unprecedented ways, then the coffee cherries produced by plants responding to these rapidly shifting conditions will not conform to their historic, and expected, qualities.

Dr. Gaitán noted that “70 percent of what a plant is producing has to do with its environment; the rest is genetics.”

Unfortunately, the 70 percent influenced by the environment is the portion over which we have the least control. Reducing global carbon emissions may help slow average temperature increases around the world, but it cannot place or remove rain clouds from above coffee farms. Producers, and everyone else along the supply chain, are left to adapt to the conditions on hand.

Cenicafe is working on generating more meaningful recommendations for adaptation, which it shares with its extensive staff of regional and local FNC Extensionists, who then communicate regionally modified recommendations directly to producers.

Understanding Weather Patterns

As was repeated often in discussions on Latin America's recent coffee leaf rust epidemic: you can't manage what you can't measure. Dr. Gaitan explained, "In the past we didn't have automated stations that were processing real time weather data, now we do. We're also monitoring weather patterns around world, such as out over the Pacific and in the Amazon, that affect Colombia's climates."

In order to be able draft helpful plans of adaptive action, Cenicafe is focusing on measuring the weather throughout Colombian coffee growing regions. Dr. Gaitán said, "If we want to understand the variations in the weather, we need to have better data on the weather. We have an updated network of weather data collection to tell us how the weather is behaving in Colombia, which is helping us orient our activity based on precise information."

Seventy percent of the factors influencing production, both volume and quality of, can only be addressed on the defensive. The remaining 30 percent of what makes a given coffee "what it is," are the genes of the particular varietal. After many decades of de facto propagation of whatever was on hand, the selection of coffee varieties is now being addressed with an aggressive offensive line up.

Colombia's Cenicafe has already

proactively generated coffee seed varieties, Variedad Colombia and Variedad Castillo, which are tailored to the country's specific microclimates and resistant to the region's most threatening disease: leaf rust. Cenicafe is not pausing in its offensive breeding programs, but it is pulling some new players from the bench.

"We're getting to the end of using the Timor Hybrid as a tool for [leaf rust] resistance. We're now working with new sources of resistance and adaptive traits from the germoplasm collection—coffee from the Ethiopia wild. It's a resource that coffee breeders around the world have not used to a certain extent," said Dr. Gaitan.

These new "Varieties of the Future" will be released in five to 10 years, as each new varietal requires extensive field testing—up to 12 years of it—before they become available to producers. New varieties always come coupled with specific agronomic recommendations for their cultivation.

One of the trickiest aspects of coffee breeding is the interplay between the genetic nature of the plant and the nurture provided by its environment. Dr. Gaitán cautioned that it would be irresponsible to say that these varieties would be useful in other places. "In coffee, the environment plays a huge role in development. We cannot guarantee that they will perform well in other places."

Sustaining coffee production becomes similar to the "nature-or-nurture" tug of war between theorists searching for the causal roots of human behaviors. As much as coffee's nature is defined by its genetics, the surrounding environment that nurtures it—the climate, weather, and subsequent pests and plagues—has just as much of a say in how it develops.

All agricultural crops have always been reared in a collaboration between nature (in this case providing the nurture) and man (selecting the genetic nature), but when the force exerting the larger influence over the final flavor in the cup, or even the presence of anything in the cup, is behaving in new and extreme ways, the work of producers, researchers, and all other parties involved in the chain becomes more complicated.

But, complicated does not mean impossible, and coffee people are certainly up to the challenge of responding to complicated production contexts. They are also open to learning from recent experience. Cenicafe's increase in number and sophistication of weather data collection stations was prompted by the bouts of unexpected weather that destroyed crops and devastated production in recent years, destruction that perhaps could have been avoided if involved parties had better seen the weather coming and understood how it would descend.

Considering long term, holistic supply chain sustainability also affords everyone along the chain the opportunity for self-reflection, an occasion to acknowledge and amend past actions that were perhaps not designed with the long-term capacity-to-continue.

One of Dr. Gaitan's areas of research and field application is integrated disease management. "There are several ways to control diseases rather than relying on just technical support, which is a different way of thinking for us here in Colombia. Rather than just relying on chemical control, there are other ways of managing diseases." He said that educational outreach to farmers is crucial, "so they understand that the weather now is not like it was 15 or 20 years ago."

Coffee farming cannot follow the pat-



In addition to researching diseases and pests affecting coffee such as roya and broca, Cenicafe, is focusing on measuring weather throughout Colombia's coffee-growing regions.



Coffee hills above Chinchiná, Caldas, Colombia, home of Cenicafe's labs and research center.

terns it has in the past. One of the biggest demands sustainable production makes is that everyone involved becomes reactive, proactive, receptive to data, and much more flexible than ever before.

For decades, both retailers and consumers have championed shade grown and bird-friendly coffees as environmentally-friendly crops playing invaluable roles in sustaining the cycles of larger ecosystems. Researchers and consumers have celebrated agroforestry systems for the habitats

they provide for fauna and for the diverse sources of income they provide for farmers. Amanda Caudhill, a researcher with the Smithsonian Migratory Bird Center, Washington, D.C., working in Chiapas, Mexico said that the coffee farm manager spoke to them about the balance of enough trees within the farms to stabilize the soil and harvest them for timber products. She observed that in the coffee under shade, "we were able to detect deer, possums, coatis, agoutis, armadillo, and fox.

In the sun coffee we saw our usual suspects: harvest mice, deer mice, and even a couple more mouse opossums."

Diverse flora and fauna may make a whole ecosystem more sustainable, but what do they do to sustain coffee production? That's precisely what Dr. Gaitan and his team are beginning to investigate. "We're studying biodiversity, not just as a treasure in coffee zone, but as a tool to control pests and other problems. We're trying to characterize that biodiversity," he said.

The next step in understanding ways that we can help sustain supply chains is to characterize tools like biodiversity both qualitatively and quantitatively, drawing correlations between all the things that can be measured—be they mammal populations or inches of rainfall—to better make decisions in today's varied production realities. ☕

Rachel Northrop is the author of "When Coffee Speaks: Stories from and of Latin American Coffeepeople," a compilation of interviews with people working along the coffee production chain. Visit: whencoffeespeaks.com for more information and to order copies of the book.



Retail - Wholesale

Tel: 212-348-5400

wholesale@orensdailyroast.com

Fax: 212 348-6292

sales@orensdailyroast.com

Roasted to perfection, not beyond recognition.

