Aquiares Estate
Coffee & Community Since 1890

Hacienda Aquiares lies on the fertile slopes of the Turrialba Volcano. It is a farm with a century-long tradition of growing high-quality Arabica coffee, protecting its stunning natural setting, and supporting the local town. Aquiares produces coffee known for its good acidity and body, its defined aroma, and its prolonged and pleasant after-taste. Established by British farmers in 1890, Aquiares was one of the first estates to produce and export Costa Rican coffee. Since 1971, three families have worked together with the farm and the community to realize their vision of a modern model of sustainable agriculture.



Location

Hacienda Aquiares is the largest continuous coffee estate in Costa Rica, covering 2,283 acres (924 hectares). Of these, 1,663 acres (673 hectares) are shade-grown Arabica coffee. Over 20% of the land (492 acres or 199 hectares) is protected natural forest. The name, "Aquiares," comes from the farm's location, nestled between the Aquiares and Turrialba Rivers: "Aquiares" means "between rivers" in Costa Rica's indigenous language. Another river, the Jesus Maria, flows through the farm and over a 90-foot waterfall. On the slopes of the Turrialba Volcano, the farm's terrain varies from gently sloping to steep hills. Valleys between these hills create micro-climates that are ideal for growing a variety of high-quality coffees. Though the setting feels remote, Aquiares is just 4.5 miles north of the city of Turrialba (with a population of 36,000) and 1.5 hours from San Jose, Costa Rica's capital.



The Growing Process

Aquiares grows exclusively high-quality Arabica coffee. Caturra is the main varietal, augmented with hybrid varietals and also new varietals created through grafting. All the coffee is grown at a high altitude (from 2,690 feet or 820 meters to 4,429 feet or 1,350 meters above sea level). A wide variety of indigenous trees shade the coffee, sequester carbon, enrich soil organic matter, and provide a natural habit for Costa Rica's local flora and fauna. The rows of coffee trees follow elevation contours to minimize erosion (which is otherwise created when rainwater runs down the toughs between rows that funnel it directly down steep hillsides). Aquiares has developed a system of pruning each plant independently, based on its need. Though more labor-intensive, this system increases plant longevity and production compared to the typical Costa Rican system of pruning by lot or row. Together, these factors – the elevation, habit, and pruning – along with proper nutrition and disease control result in Aquiares' high-quality coffee.

In the past years, through an intensive re-habilitation program, Aquiares re-planted more than 427,470 trees in small patches of existing fields. This project rejuvenated the crop of trees and increased the land's utilization. Agronomists are also conducting trials with new rust-resistant varietals, which are also highly productive and have better cup quality. The farm now produces an average of 2.2 million pounds of coffee per year (14,667 bags of 69 kilos or 22,000 Quintals).



Picking the Coffee

All Aquiares coffee is picked by hand – a clear indication of its quality. Housing has been provided for over 400 migrating workers, who come for the picking season with their families, and join other members of the Aquiares community and commuting workers who carefully pick beans from the trees, once the beans have turned dark red. Supervisors check the ripeness of the picked beans as well to ensure standard quality. Farm trucks immediately bring the ripe, picked beans to Aquiares' own processing plant.

Processing the Coffee (Beneficio)

Aquiares controls the quality of its coffee – from the plant to the bag. This is because Aquiares has its own coffee processing facility, called the beneficio. The first in the country to be registered with the Costa Rican Coffee Institute (ICAFE), the beneficio has the unique identification number #001.

The beneficio's responsibility is to maintain the quality of the coffee developed in the field. By processing only Aquiares coffee, the beneficio ensures the incoming beans are of highest quality and adequate ripeness.

Coffee cherry processing in the beneficio includes:

- Pulping machines that remove the pulp (the skin) through friction.
- Funneling the naked beans into water tanks (cribas), to segregate floaters.
- Washing in aqua-pulpers to remove the mucilage under the skin, surrounding the bean.
- Pre-drying and drying in large, rotating driers to lower the coffee's humidity to 11.5%. Wood from tree pruning and coffee husks fuels the ovens that heat the driers.
- Cupping a sample of each drier to ensure that no defects are found.
- Resting the beans in silos for a minimum of four weeks to homogenize humidity.
- De-hauling dried beans to remove the husk or parchment (pergamino).
- Screening through suction (catadora) to eliminate husk and impurities.
- Sorting by size with screens to obtain batches of same-sized beans, which will eventually roast evenly.
- Sorting by density with vibrating tables to segregate lighter beans that might be broken, shriveled or have insect damage.
- Sorting electronically to eliminate light colored beans caused by over-drying, and brownish colored beans caused by over-ripeness.

Technical Characteristics of the Coffee

Type: Washed Arabica coffee
Denominations: SHB Zona Norte (Strictly Hard Bean) 28%, HGA (High Grown Atlantic) 72%
Weight lost after roasting: 16.4%
Density: 742 Kilos per cubic meter in the Aquiares Estate Quality

Four Qualities of Arabica Coffee for Export

Ninety-five percent of Aquiares coffee is exported to North America, Europe, and Japan. Five percent is sold locally.

- **Aquiares Estate**: This is the best coffee of Costa Rica's Atlantic region. It is selected only from the high-altitude section of the farm, 3,610 feet (1,100 meters) above sea level, during the middle of the harvesting season (November to January). The beans are hard, heavy, large (95% over screen size 16), and without defects. Aquiares produces about 670,000 pounds of this quality per year (4,467 bags of 69 kilos or 6,700 Quintals). This is around 31% of the crop.

- **Aquiares Peaberry**: Peaberries are the beans that develop a single (as opposed to the typical double) seed. These can be harvested throughout the farm, only in the middle of the harvesting season. They are very dense and without defects. Aquiares produces about 125,000 pounds of this each year (833 bags of 69 kilos or 1,250 Quintals). This is around 6% of the crop.

- **Aquiares European Preparation**: This is selected from coffee picked throughout the entire farm, from October to February. The beans have good hardness, weight, and large size (90% over screen size 16), with fewer than 1% defects. Aquiares produces about 940,000 pounds of this quality per year (6,267 bags of 69 kilos or 9,400 Quintals). This is around 43% of the crop.

- **Aquiares Seconds**: This coffee is selected from beans picked from the entire farm throughout the harvest. The beans have good hardness and weight, but are smaller in size. More defects are present. Aquiares produces about 330,000 pounds of this quality per year (2,200 bags of 69 kilos or 3,300 Quintals). This is around 15% of the crop.



*The Ceiba (Kapok tree) is a local symbol, regarded to be a natural heritage monument.

Environmental Responsibility

Aquiares is strongly committed to environmental sustainability – as its wide array of environmental certifications indicate. Aquiares has long seen the connection between agricultural, environmental, and social health. Two decades ago, the farm had few shade trees and small stream and house buffers. When the farm and its environment were not in careful balance, the farm constantly faced challenges with soil and tree health. Harvests fluctuated widely and employee turnover was high. Beginning with adding shade trees and expanding from there, Aquiares worked hard to become a leader in environmentally-sustainable coffee.

Rainforest Alliance

Aquiares is the largest coffee farm in Costa Rica to receive the Rainforest Alliance Certification. This eco-label guarantees that Aquiares meets demanding social and environmental standards, verified by experienced inspectors. These standards require that forest are protected; rivers, soils and wildlife are conserved; workers are treated with respect, paid fairly, and properly equipped to deal with fertilizers; and that all employees have access to education and medical care. Aquiares obtained its first certification in 2003, and has maintained average yearly scores of 950 points out of 1,000.

In 2012, Aquiares became the first farm in Costa Rica to fulfill the requirements of the Rainforest Alliance Climate Module. This includes adhering to careful standards of gas emissions and energy use, which are carefully tracked through each harvest season. This certification demonstrates that Aquiares' low emission do not meaningfully contribute to climate change.

Carbon monitoring with CIRAD (France) and CATIE (Costa Rica)

Aquiares is a test plot for scientific research in the form of an ongoing project between the CIRAD Institute of France and CATIE University of Costa Rica. It is called the "Carbon-Flux project." CIRAD and CATIE measure the greenhouse gas exchange between a 1-hectare farm plot and the atmosphere over long time horizons. They also monitor the water and sediment levels in different seasons. This information helps assess the environmental situation and services in a coffee and agro-forestry watershed. More information on this project is available at: http://www5.montpellier.inra.fr/ecosols/Recherche/Les-projets/CoffeeFlux

Participation in the Coffee NAMA

Aquiares was chosen to be one of the five coffee mills to be included in the NAMA (Nationally Appropriate Mitigation Action); this initiative is a collaboration between national and international entities and consists of a technical assistance package intended to lead the coffee mills to generate their greenhouse gas emissions inventories, verify their carbon footprint and adopt appropriate emission reduction technologies. The coffee NAMA is intended to set the stage for other agricultural systems and sectors, which would collaborate in Costa Rica's challenge of achieving carbon neutrality by 2021. Aquiares is committed to obtain a Carbon Neutrality Certification by 2014. More information on the initiative: http://fundecooperacion.org/?p=2099&lang=en



The Community of Aquiares

The community of Aquiares sits in the midst of the farm, home to 1,800 people. Two decades ago, the farm owned all the houses and lots, and housing was provided for workers and their families, this meant that if someone lost their job, they lost their home too. In 1992 the administration started a project to eliminate this. Each worker was given a bonus for its years of service, lots were priced at $0.20 per square feet, houses were valued and offered for sale at a 40% discount and assistance was given to apply for the government house fund. At the beginning workers thought it was too good to be true, but as the first families obtained their own homes, everyone followed. The town was brought to life with a deep feeling of security, and self-achievement since it wasn't given away for free. Families climbed an important ladder in the security of generations to follow, which were able to strive for higher education and well-being. Nowadays 98% of the Aquiares employees own their own house, a figure that is still enviable by companies in the developed world.

The town has its own primary school, day-care center and early childhood cafeteria, sports fields and other recreational areas. (The Hacienda donated the land for all these areas.) The church of Aquiares, built in 1925, is the town's architectural and historic jewel. Located in the center of the town and visible from most of the farm, the church is the Aquiares landmark. Its unusual pressed metal walls, steeple clock, and stained glass windows were imported from Germany by the Aquiares founders. In 1997, the Ministry of Culture of Costa Rica declared the building a National Architectural Historic Monument.



*The church in the middle of the community and farm, Turrialba City on the background.

"In Aquiares, one breathes fresh air and admires the natural beauty in all directions. The trees are home to birds and butterflies, orchids, epiphytes and bromeliads. Rivers flow between small valleys covered in the much-demanded Costa Rican bean, and plunge in breathtaking waterfalls. Locals are inviting and seem undistracted by the outside world; their smiles suggest a happy, peaceful life."

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