



2016 Coffee Season Report
Cusco – Peru



Campesino Mateo



Contents

- ❖ **Peru Market Overview**
- ❖ **The Coffee**
- ❖ **Cusco – The Region**
- ❖ **Cusco – The Climate**
- ❖ **Cusco – The Market**
- ❖ **The Harvest**
- ❖ **Post-Harvest Processing**
- ❖ **Connecting Farmers to the Market**

Peru Market Overview

According to the International Coffee Organization Peru was the 8th largest coffee producing country in 2015/6, and the world's leading exporter of organic coffee. Virtually 100% of the coffee produced in Peru is of the *Coffea Arabica* species. The average coffee farm in Peru is extremely small at about 2.5 hectares (6 acres). Beginning in 2012 coffee leaf rust (Roya) struck the country hard and reduced production by almost half from a high of 5.1 million bags* in 2011/2 to the recent low of 2.6 million bags in 2014/15. This year's production saw a slight rebound to 3.3 million bags as more disease resistant varieties came into full production – most notably various Catimor hybrids. Increasingly farmers have been focusing on producing quality coffee spurred by interest from specialty-oriented buyers.

*1 bag is 60 kg bags of green coffee

The Coffee

Each year farmers are harvesting more coffee in the Catimor family such as Gran Colombia, Costa Rica 95, T series, and more recently Castillo. On most farms where these have been planted, we have noticed a few trees that are both disease resistant and show more genetic similarity with Caturra, Typica, or Bourbon cultivars. Perhaps if these anomalies remain resistant to Roya and have improved quality in flavor and aroma to the lesser Catimor varieties, they may become valuable tree stock for Peruvian farmers.



A leaf with the Roya fungus



Harvest of new Catimor varieties

Coffee Leaf Rust (Roya) continued its steady advance into the higher altitudes that were previously untouched by the disease in years past. It seems that plants in the shade fared better than those planted in full sun. Due to the thickness of its leaf, the Bourbon variety seems to have resisted Roya a bit better than Typica or Caturra. Most farmers in the region have planted strictly Typica over the past 100 years and many at lower altitudes are now either abandoning coffee farming altogether in exchange for banana, cacao, yucca, or other cash crops, or are planting the disease resistant and hardier Catimor varieties.

Large tracts of land are still planted with Typica, Bourbon, and Caturra, although generally these trees are getting older (15+ years) and are therefore less productive. Some farmers have newer plantations of these lower-producing but higher-quality varieties and there are also some Mondo Novo, Pache and Maragogype to be found on farms. Very few farmers have planted Geisha varieties and some are beginning the harvest of the Geishas they planted in years past. The genetic purity of most of these plants cannot be guaranteed but through cuppings and physical analysis of the plants, cup quality can be measured accurately.



Harvesting Typica Trees 30+ years old



New Geisha Trees Planted 2015

Cusco – The Region



Cusco (often spelled Cuzco) is a department in southern Peru. This vast region is home to high the Andean mountains with peaks reaching over 6000 meters (20,000 ft.) above sea level as well as dense Amazon Jungle just a few dozen miles away. La Convención, a Province in the Department of Cusco, is the main coffee producing region in the southern part of Peru and is slightly larger than the state of Massachusetts. The many valleys that dot the landscape of this region are extremely rural and isolated – oftentimes lacking access to electricity, cell-service, and internet. The coffee farms in La Convención range from 500 to 2400 meters (1640-7875 ft.) above sea level.

Cusco - The Climate

The Andean Mountains and Amazon Jungle create a multitude of climates in this region – ranging from somewhat dry-arid to densely hot and humid. The dry season usually lasts between April and September in the La Convención Province. This year the dry season was atypically longer and more intense than in years past. During the critical period of fruit ripening and harvest, showers usually come at least once every other week. This year, however, many regions received little to no rain. This uncharacteristic weather resulted in the following:

- 1) Easier drying, as there was little rain to damage drying parchment coffee.
- 2) While coffee from higher altitudes are generally of better quality due to their density and concentrated aromas and flavors, in 2016 relatively lower altitude coffee (those grown between 1400-1800 meters) seem to have narrowed the quality gap in comparison to the high altitude coffee (1800-2400m) that have dominated cuppings in years past.
- 3) Coffee from more humid areas, regardless of the altitude, had improved ripening of the fruit and bean. Shade helps trap humidity in the soil and protects it from drying in direct sunlight. Coffee cherries were able to ripen on farms with shaded cover even despite the lack of precipitation.
- 4) Very sporadic rain during the finish of the 2016 harvest led to non-uniform flowering of coffee trees. The rains promote flowering of trees; each flower produces one coffee cherry. When flowering is uneven and takes places over a longer period of time than usual, the fruits will similarly ripen over a longer period. This spread-out harvest season can increase production costs and perhaps lower quantities in the 2017 harvest.

Cusco - The Market

Most farmers process their coffee cherries on their own farms. They use the washed process and then sell their dried parchment coffee to cooperatives, commercial agents, or local companies. The market for parchment coffee in the region started in March and April with the very low price of about 190-220 soles (about \$60) per quintal (100 lbs. parchment coffee). Usually the price at the beginning of the year is a bit lower because coffee being harvested in March and April are mostly from lower altitudes and thus of generally lesser quality. In addition, exporting companies and cooperatives usually haven't signed contracts with buyers and are thus hesitant to purchase coffee at higher prices. The local price rose to a high of about 360-380 soles (about \$110) in certain valleys in the months of July and August. The price then slipped to about 300-320 soles (about \$90) by the end of the harvest season in September and October.

A market for specialty coffee is slowly developing and a handful of buyers are now purchasing coffee at a premium above the local market prices stated above. Many regional and nationwide competitions brought some excellent coffee into the spotlight. Different projects run by local municipalities, regional governing bodies, associations and cooperatives brought improved processing methods to the small holder farms. Some micro-lots from the region reached and fared well in national competitions and others were purchased from quality-conscious buyers with price premiums.

The Harvest

Farmers generally harvest their trees about 4-5 times per year. The first harvest, also known as the "chayapa" (in the indigenous Quechua* language), is almost always of lesser quality and somewhat uneven. During this early harvest over-ripe, ripe, and under-ripe cherries (also known as "pintones") are picked together. This leads to varying qualities in the cup as the over-ripe fruits sometimes create an unbalanced fermented taste, while too many "pintones" can lead to very vegetal, green, and grassy tastes. After the "chayapa", farmers then move on to their two or three main harvests, known locally as "primera mitad" and "segunda mitad". The ripening of fruit tends to be

more even and farmers are able to harvest more uniformly ripe cherries.

*Language of the Incas that is still spoken among 14 million people in the Andean Mountains between Peru, Ecuador and Bolivia

Farmers will make a final pass of their fields collecting the left-over fruit from the first 3 or 4 harvests. This pass known as the “ultima chayapa” or “raspa” also tends to be of lower quality as the harvest is not uniform and can include lots of under-ripe green cherries as well as overripe cherries that are drying on the branch. If carried out properly however, this final harvest can lead to some of the best quality due to the extended maturation time which leads to more dense and concentrated beans.

Harvesting definitely varies from farm to farm. Most farmers in the region harvest without regard to quality in order to save money on labor and because there is still very little incentive for them to take the more costly steps that would lead to increased quality.



Range in harvest from low quality (left) to medium quality (middle) to high quality (far right)

Farmers often talk about how many pickers it takes for them to harvest one quintal (100 lbs. dried parchment) of coffee. This will largely depend on the terrain (slope), the age, density, and variety of the trees, the uniformity of fruit ripening, the skill of the workers, and the quality of the harvest. On flatter farms at lower altitudes planted with the Catimor variety one or two pickers can harvest one quintal per day. On other farms at higher altitudes with older Typica trees it may take up to 10 harvesters to pick one quintal. The local wage in the coffee fields is about 20-25 soles per day. Farmers will have a very tough time turning a profit on the quintal (and thus the harvest) if it takes more than 6 or 7 harvesters to pick each quintal. At an average local price of 325 soles per quintal, the farmers will end up spending almost 175 soles on labor – not to mention the food they will cook for the harvesters and the work throughout the season to weed, fertilize, prune, and manage their coffee fields. Therefore, farmers generally take steps to reduce costs during the harvest. A worker that picks unripe, ripe, and overripe fruit will be able to harvest more each day and make fewer passes at each tree during the harvest season (sometimes reducing the number of times a tree is harvested from 5 to 3 times per year) which greatly reduces costs during the season.

Another way small scale coffee farmers will reduce costs during the harvest season is engaging in the traditional communal practice of “ayni”. This Quechua word literally means “community” and is a tradition among small farms throughout the coast, mountains, and jungle zones of Peru. Carried out in a slightly different way depending on the region, it generally means that you work on my farm for a day and I’ll work on your farm for a day. At times, 15-20 people will come to harvest all the coffee on a 2 to 3 hectare (5-7 acre) farm over a one or two-day span. In the following days, this community harvesting group will head to another farm. This greatly reduces the farmer’s costs during the harvest season – especially for a cash-strapped farmer who needs to wet-mill, ferment, wash, dry and bag their coffee before they can reap any financial rewards and repay their workers.

Post-Harvest Processing

Virtually all farmers in the region process their cherries on their own farms. They employ the washed process to convert their fruits into parchment coffee. Infrastructure varies greatly from farm to farm. Most farmers use small hand-crank wet mills to pulp their coffee cherries and separate the fruit from the beans and surrounding mucilage. Some have attached their hand-crank mills to motors and others are now using small disc mills to pulp their coffee cherries. The majority use cement or tile-lined tanks to ferment from anywhere between 10-25 hours depending on various factors (sugar content of fruit, varietal, altitude, weather, etc). Some farmers do not have fermentation tanks and ferment their coffee in plastic sacks. Very few farmers have tile-lined tanks, flotation tanks to separate empty or overripe beans before milling, and water channels to separate densities when washing the coffee after fermentation. Almost all farmers have access to water and the majority of them are blessed with crystal clear mountain stream water in which to wash their beans. Generally, an emphasis is placed on producing the “whitest” parchment coffee possible, although a look through any given farming valley and you’re likely to find a range of parchment colors from white to off-white to yellow to light orange.



Deteriorating concrete fermentation tank



Tiled fermentation tank with water channel

Some farmers dry their coffee on plastic tarps that are laid over grass or compacted soil. Others have cement or stone drying patios on which they either dry their coffee directly or first place a woven plastic tarp below the drying beans. The problems with these methods are numerous:

- 1) Coffee dried on top of, or in close proximity to grass or compacted earth, can absorb these aromas and tastes, often masking what could be intrinsic floral and fruity flavors with dull earthy, woody, or vegetal notes.
- 2) Sporadic rains can appear at any time during the harvest season and coffee that becomes wet once the drying process has started will always lose aroma, flavor, and acidity. Additionally, since farmers in the region engage in the work exchange described above, “ayni”, they may be far away from their drying coffee on a day when it rains. This leaves farmers with the often difficult decision of whether to leave their coffee out to dry or risk a spike in humidity by leaving it covered inside due to the risk of rain.
- 3) Drying coffee in a thin layer directly under the sun generally reduces drying time to 3-4 days. This can have a negative impact on the coffee as it ages – coffee dried in this manner will start to show signs of aging within 3-6 months whereas coffee dried more slowly (5-10 days) and more gently may show no signs of aging for at least 6-12 months.
- 4) When dried directly beneath the sun, especially on top of dark plastic tarps, the drying temperature can soar well above 100 degrees F and the parchment layer protecting the bean usually cracks open leaving the green coffee bean exposed to sunlight, odors, and other potential contaminants that may reduce quality.



Poor coffee drying



Proper drying of parchment coffee on top of raised beds below greenhouse

A small percentage of farmers do have greenhouses and raised beds on which they dry their coffee. These farmers are the most likely to maintain the quality of their harvest through the drying process and produce fully sealed parchment coffee beans.

Ultimately, it's necessary for farmers to have an adequate storage room for their parchment coffee. Ideally farmers will store their coffee in jute or polypropylene sacks on small wooden pallets in a dedicated storage room that's dark, dry, and free of odors. Unfortunately, many farmers lack the space or money to build such a room and thus lots of coffee is stored in bedrooms, kitchens, or storage spaces shared with foods, clothes, or worst of all, fertilizers. The fact that almost all farmers sell their coffee to buyers who purchase based solely on physical appearance removes any economic incentive for proper quality storage.

Connecting Farmers to the Market

Specialty coffee is still a new topic in Peru, especially in the remote and virtually inaccessible valleys of Cusco. The vast majority of all coffee in the Cusco region either goes “uncupped” (not tested for quality) until it gets mixed and sent to Lima, or gets measured for quality without the farmer learning anything about the results. Therefore, very few farmers will receive any feedback on the quality of their coffee and thus will never earn any price premium for taking the steps necessary to produce quality coffee. Numerous farmers recounted the same story: they provided the local cooperative with high quality and clean parchment coffee only to see it mixed with inferior quality from neighbors who were paid the same price. This is a strong disincentive for those farmers who work hard during the harvest season to produce quality. Campesino Mateo is working to close the loop connecting farmers with roasters in order to change this paradigm.

