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## *The Ins and Outs of Organics:* **Demystifying Production**



- **Profile: F. Gaviña & Sons**
- **Mexico Targets Local Consumption**
- **Containerization:**  
*The Rise & Fall of the NY Waterfront*
- **Special Report: Vietnam**  
*Part IV in a Five-Part Series*
- **Origin Highlight: Guatemala Part II**

*The Ins and Outs of Organics:*  
**Demystifying  
Production**





The regulations for organic agriculture set by the USDA's National Organic Program read like a list of prohibited practices and products, but growing organic coffee today demands not just the absence of chemicals, but the presence of relentless creativity coupled with observation and revision. **By Rachel Northrop**

**T**he discussion of organic coffee usually elicits strong opinions from producers and roasters alike, opinions that range from passionate to averse. Organic coffee carries many stigmas and stereotypes, many of which are unfounded and most of which are being challenged.

Many roasters, producers and even growers have developed incorrect beliefs about organic coffee, resulting in poor quality and small yields. A fairly common misconception by roasters is that the flavor in organic coffee will be inconsistent and lack complexity. On the production side, producers have been content to accept a fraction of the yield. Their belief is that organic coffee inherently yields a lower production. And even some growers don't understand what growing organic truly means. These growers treat organic coffee as "hands off"—growing coffee as less of a farmed crop in favor of attempting to replicate the way coffee would act naturally, left to its own devices.

Ricardo Koyer of Kotowa Coffees in Boquete, Panama, is one farmer who sees the full potential in the organic coffee industry. Koyer farms organic coffee as intensely as conventionally grown, setting the same expectations for both types, anticipating and seeing the exact same yield per hectare for conventional and organic lots. He believes that all nutrients and treatments given in conventional cultivation can be provided organically, thus resulting in comparable productivity.

These diverse expectations for production are the result of the varied mentalities behind the cultivation of organics.

### **Organic Mindsets**

For established commercial operations like Kotowa, the motivation for growing organic comes from a desire to tap into that corner of the market share and meet consumer demand. Yet market demand hasn't grown significantly in the past 10 years largely due to low expectations from roasters; expectations many producers continue to meet because they themselves don't hold organic coffee production to the same standards of quality.

There are many reasons for producers to get involved in the organic coffee industry, from a belief in ethical cultivation, to health. Those producers who approach organic production with less of a focus on quality often concentrate on land stewardship. They believe that organic cultivation is the only ethical way to manage land to which they feel a spiritual connection and duty.

A number of producers choose to grow organically out of concern for their health as well as the health of their employees and the consumers drinking their coffee. Many growers live on the same land where they cultivate coffee, thus choosing to commit to organics in order to maintain the safest environment possible for their families.

In Costa Rica many people view growing coffee as an unnecessary challenge. A common Costa Rican phrase is, "Growing coffee is a good way to go broke. Growing organic coffee is a good way to go broke quicker." And yet, many people who grow organic coffee reap not only a quality product but a quality payout as well. How? Although production can be difficult, success in the organic industry is largely a result of where it's grown.



## Organically Suited

Koyer said many people want to grow organic coffee, “but the truth is, [it] simply cannot [be done] everywhere.” Coffee grows in a wide variety of climates, ecosystems and elevations. Successfully cultivating organic coffee demands a balance between an organic production spot that is conducive to fertile planting without being conducive to the plagues that devour coffee in the absence of agrochemicals. Some places are just not appropriate for cultivating organic coffee, be it due to low elevation or high humidity.

Organic coffee thrives in an environment that is the equivalent to the top shelf of a refrigerator: a high altitude in a cool, dry place. The reality of organic coffee is that it is not an option for every farm, no matter how much effort producers are willing to exert.

## Shifted Costs of Production

For farms that are located in ideal organic growing locations, coffee must meet many steep requirements to bear the seal of organic certification, requirements that eliminate some costs while generating

others. In the United States, for coffee to be certified as USDA organic through one of 36 accredited auditors; no herbicides, fungicides or pesticides can be used on the coffee itself nor to treat the areas in and around coffee trees. Organic coffee also demands completely organic fertilizers, in lieu of the traditional concentrated fertilizers used generously in the cultivation of conventional coffees.

Money saved by not purchasing agrochemicals must be spent on the additional labor required to apply this increased quantity of organic fertilizers. Fertilization is of particular importance in organic coffee as a stronger plant will naturally become more resistant to pest and disease. “Consider that all coffee plants have a certain production potential. In general, a Caturra plant should produce one pound of green coffee. To achieve this level of production, you need a certain quantity of chemical fertilizer,” Koyner explained. “If I need 10 sacks of chemical fertilizer, I’ll need 100 organic sacks—around 10 times as much to reach the same high level of production.” One common organic fertilizer is the decomposed

pulp of the coffee cherry, sometimes broken down by micro organisms, other times through vermicompost. Coffee pulps increase the acidity of the area, providing the coffee plant with additional nitrogen, one of the essential elements for growth.

In many cases, organic coffee trees are less homogenous than those grown conventionally, making for slower, more expensive harvesting. As organic coffee is often grown as part of an agro-forestry system, this more varied landscape further contributes to slower harvesting.

## Between Shade & Organics

Fallen organic material from intercropped shade trees in agro-forestry systems offers another potential source of nutrients. Decomposing leaves act as fertilizers and create ground cover that eliminates the need for organic herbicides, which can be expensive and require more applications than their conventional counterparts.

Shade trees distribute this natural fertilizer/weed control regularly, but not free of charge. Inter-planted trees must be pruned to regulate the amount of shade they pro-



Although coffee grows in a wide variety of climates, organic coffee grows best in high altitudes that are also cool and dry.



vide, which again increases labor costs. Producers need to constantly conduct a cost-benefit analysis to decide how to best meet the needs of the soil and the coffee plants while controlling labor costs.

The regulation of shade is crucial to the cultivation of organic coffee because too high a percentage of shade can result in the perfect environment for fungi like *ojo de gallo* to grow. Shade trees, as part of an actively and correctly managed agro-forestry system, provide the additional advantage of preventing erosion while producing crops or hardwood that provide alternative sources of income to coffee growers. The benefits naturally justify the increased management costs.

### Transitioning to Organic

One requisite of growing organic coffee is that the soil must be free of chemicals for three years before being certified as organic. This lengthy transition period is not an idle one. As soon as the application of chemicals and concentrated fertilizers ceases, applying alternatives begins. As

plants adjust to new conditions, production usually drops, deterring many growers from making the transition at all.

Some farms manage a percentage of their land as organic while maintaining the rest conventionally. During this transition period, the farmers will need to create natural barriers (also known as “living fences”) to prevent cross contamination of chemicals used on other lots.

### Accidentally Organic

Some farms that begin organic, thus eliminating the risks of a precarious transition period, begin almost accidentally. Coffee farms that have been abandoned for years, sometimes even decades, boast soil already free from chemicals. A farm's new owner can then continue to manage it organically, carving out production lots from overgrown forests that have emerged around the old plantations.

Such cases also eliminate the need for the observation and revision usually necessary to determine the appropriate amount of shade. Trees under the perfect

amount of shade are dripping with ripe cherries, while those just a few meters away in fuller sun or under deeper shade are nearly fruitless.

Farms in remote, difficult to access communities, such as those in the Peruvian highlands, are often organic by default. The cost and difficulty of transporting pesticides and fertilizers makes their use virtually impossible, resulting in organic cultivation. However, this form of organic cultivation is usually not as intensively managed because transport and application of organic alternatives is equally as challenging.

### Case Studies in Success

For nearly 10 years, the Tropical Agriculture Research and Education Institute (CATIE) in Turrialba, Costa Rica, has been conducting a long-term study of various coffee cultivation methods, including intensive and “hands-off” organic management techniques. The study found that soils in organic cultivation areas are higher in carbon and phos-

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phorus with improved pH levels.

A local Turrialba producer of both organic and conventional coffee, who preferred to use only her first name, Marie, offered a qualitative translation of what improved soil quality means, saying, "When you grab a handful of soil from the organic plots it smells like forest." She also noted that the only place they've seen the coffee berry borer is in the conventional lots. "In the organic ones we've been able to control it completely with the use of [the fungal spore] *beauveria bassina*."

About 40 kilometers away, Jose a solely organic producer, who also wanted to be identified by only his first name, has been farming organically for 10 years. In the past three years he said he has seen a much anticipated significant annual increase in yield per hectare. He now surpasses his conventionally growing neighbors. Jose controls weeds by planting low-growing, viney leguminous *canavalia* plants and controls pests with solutions he makes himself using ingredients varying from neem seed to potash.

Jose also grows cacao and sugarcane with only one hectare of his farm devoted to coffee. His success is partly owed to the size of land he works with. Like so many expensive and labor intensive organic management methods, the successful practices he employs would be difficult to scale up if applied to a larger farm.

Further south in Panama's prized Boquete valley, Finca Dos Jefes couples organic cultivation with lunar cycle farming, planting, pruning, and harvesting in accordance with the phases of the moon. Dos Jefes fertilizes with vermicompost and processes

100 percent of their coffee naturally, using hand selection. Their meticulous processing technique and attention to detail makes them one of the producers working to combat the long-standing stigma that organic coffee just doesn't yield a quality cup.

Several kilometers further up the mountain Kotowa's organic coffee farm sits on a windy hillside. This particular microclimate experiences such an extensive dry season that weeds are left to grow almost to the point of choking the coffee plants. This technique naturally holds moisture in the soil. The weeds are only cleared by machete during the harvest season to allow for clear access to the plants. Fast-growing shade trees are also interspersed with slower growing hardwoods to create a varied system that requires constant attention. Koyer said that Kotowa is also working hard to advance the reputation of organics in the cupping room. Their organic geisha received over 86 points at the 2011 Best of Panama competition.

### Obstacles to Organics

One of the biggest challenges to growing organic coffee is its susceptibility to disease. While some preventative organic fungicides do exist, there are no organic equivalents to the curative products that can mean the difference between a flourishing farm and one stripped by plagues.

The current coffee leaf rust attack sweeping Central America is testing the determination of many organic growers. Many will have to make the difficult decision whether or not to switch to chemicals in order to save their trees, or lose up to 90 percent of their harvest in order to remain organic. Farms at

higher elevations have been able to skirt the effects of the rust, making a strong case for only growing organic where the conditions are absolutely optimal.

In addition to the agricultural challenges, producers face the bureaucratic challenges of achieving certification. Many organic farms are only a handful of hectares, and these small independent producers have to individually pay for certification. Such an investment is only worthwhile if there is also a certified mill in the area. Similarly, a mill will only bother to certify if it knows that there are roasters who will buy enough stocks of certified coffees.

While there is no guaranteed premium for organic coffee, roasters are willing to pay more because they can transfer this cost to consumers. These consumers are happy to pay more for coffee that safeguards their own health as well as that of the farmers and their land.

As organic coffees continue to perform admirably in cupping competitions, receiving attention for their taste as well as their sustainable and health attributes, demand should increase. Perhaps there will be enough demand to not only increase the amount of organic hectares planted, but to also decrease the cost of certification, thereby extending certification to those farmers who are already painstakingly cultivating their coffee with these organic processes. ☕

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