

CONFIDENTIAL

YOUR BEST SOURCE OF INFORMATION ABOUT THE BRAZILIAN COFFEE BUSINESS. THIS ISSUE:

- **HOW DROUGHTS AFFECT COFFEE TREES AND THEIR PRODUCTION (PAGE 3)**
- **DENSIMETRIC SEPARATION BEYOND COFFEE: MVFS FOR OTHER PRODUCTS (PAGE 4)**

BRASIL WORLD LEADER IN NUMBER OF CERTIFIED Q PROCESSING PROFESSIONALS

With one pioneer course held in 2017, three in 2018 and one currently programmed, Brazil has today more certified Q Processing Professionals than any country in the world. Over 80 people took CQI's Q Processing Professional courses taught by different instructors and held on three different farms in the states of São Paulo and Minas Gerais. P&A offered three of the courses, one in 2017 and two in early harvest 2018, that included participants sponsored by Yara and Nespresso, while the Brazil Specialty Coffee Association (BSCA) offered two courses in mid-harvest 2018 with one still programmed for late harvest. The Professional (Level 2) course lasts one week and includes theory and practice with participants processing their own samples of coffee according to different systems. The first P&A course in 2018 was combined with the Pre-Q Grader course to help participants evaluate the quality of their coffees.

Sources: P&A, BSCA and <https://database.coffeeinstitute.org/users/processing/arabica/operator>

FEWER COFFEE GROWING PROPERTIES IN BRAZIL

The number of coffee holdings in Brazil has fallen from 286,842 to 264,316, a 7.9% decrease between 2006 and 2017 but the states of Minas Gerais and Espírito Santo witnessed substantial gains. Minas Gerais now holds 63.5% of the countries' Arabica properties and Espírito Santo 64.4% of the Conilon holdings. Minas Gerais and Espírito Santo increased their number of Arabica properties whereas Paraná, São Paulo and Bahia lost them. Espírito Santo also had a marked increase in Conilon properties with marginal gains in Bahia and substantial losses in Rondônia.

Number of coffee growing properties

| | 2006 | 2017 | Change |
|----------------|-------------|-------------|---------------|
| ARABICA | 199,492 | 188,180 | - 5.7% |
| CONILON | 87,350 | 76,136 | - 12.8% |
| TOTAL | 286,842 | 264,316 | - 7.9% |

Source: IBGE - Censo Agropecuário 2017

GLOBAL COFFEE SUSTAINABILITY CONFERENCE TO TAKE PLACE IN MINAS GERAIS

Belo Horizonte, in Minas Gerais, will host the 2018 Global Coffee Sustainability Conference (GCSC) on November 8 and 9. For the first time in Brazil, the event promoted by the Global Coffee Platform, GCSC2018, expects 300 participants from several countries, including GCP platforms around the world: Vietnam, Indonesia, Uganda, Colombia, Kenya, Honduras, Tanzania and Peru, apart from Brazil. The event is free of charge for GCP members; tickets will be sold to other interested stakeholders. GCP works towards a more sustainable coffee sector, that offers better living conditions for growers and workers and assures the future supply of coffee, while protecting natural resources.

Source: Cafépoint

COFFEE LEADS RURAL JOB CREATION

Despite general dismissals in the industry, wholesale and retail sectors in Brazil, the agribusiness has opened 40,900 new job opportunities in June, with coffee leading rural job creation. The coffee production sector has created jobs specially in Minas Gerais where 14,583 new employees have been dully registered.

Source: Jornal Hoje em Dia

SPECIALTY COFFEE EQUALS 20% OF BRAZILIAN PLANTATIONS

Specialty coffee production has increased 20% over the past 5 years in Brazil and already represents 20% of coffee farms, according to 2017 records of the Ministry of Agriculture. Organic and sustainable coffees have also grown; certifications lead to management improvement at farm-level, higher productivity and possibility of accessing new markets. Better prices are among the benefits of investing in specialty coffees; while "commercial" coffees are sold today at around R\$ 450 (US\$ 122), specialty coffees can reach R\$ 1,700 (US\$ 459) and above.

Source: Folha de São Paulo

DIFFERENTIATED COFFEES ARE 18% OF EXPORTS

Exports of differentiated coffees reached 5.43 million bags and US\$ 1.04 billion in value between June 2017 and June 2018 according to the Brazilian Coffee Exporters' Association (CeCafé). This volume represents an 11.6% increase over the previous period when 4.9 million bags of higher quality coffee were exported by Brazil. The average price for differentiated coffees was 28% higher than "commercial" coffees' average price.

Source: CaféPoint

LARGE FALL IN BRAZILIAN COFFEE EXPORTS

The drought that affected coffee production and the smaller Arabica output due to the biennial cycle in the 2017/18 season led to smaller coffee exports from Brazil. The country exported a total of 30.3 million bags from July 2017 to July 2018, according to the Brazilian Coffee Exporters' Association (Cecafé), a 8.4% drop and the lowest recorded shipments since 2012/13. Exporters are now optimistic about the current season with good volumes and high quality expected for both Arabica and Conilon.

Source: Valor Econômico

STRATEGIC PLANNING FOR COFFEE PRODUCTION SECTOR CONCLUDED

The National Coffee Growers' Council (CNC) has finalized a strategic planning program aiming at a more competitive, sustainable and integrated coffee sector. Based on a series of workshops conducted with large and relevant cooperative leaders associated to the entity, the new plan recommended a new governance structure that has been approved and comprises the creation of several committees (Technology and Research, Sustainability, Statistics and Knowledge, Resources and Communications) that will help growers take part in future CNC decisions and actions. According to CNC's president, it is crucial to improve the organization of data and information to guarantee market intelligence, adoption of new technologies and more efficiency at farm level.

Source: Cafépoint

NORTH MINAS COFFEE PRODUCTION GROWS WITH NEW VARIETIES AND TECHNOLOGY

A new coffee producing region in the northern portion of Minas Gerais has been attracting attention recently. Production in this area relies on high technology, including irrigation, mechanization and new coffee varieties. Altitudes vary between 700 and 900 m, temperatures range from 21 to 25°C, the terrain is flat to hilly with dry weather predominating. High productivity levels of about 70 bags/ha are being registered with Red Catuaí, which is the prevailing variety, but new plantations with Arara cultivar have shown good results such as high productivity and superior quality (over 86 points, SCA scale).

Source: Revista Attalea Agronegócios

CONILON: LARGE CROP, SLOW PICKING

Conilon harvesting has been slow this year in Brazil in several areas such as Espírito Santo state, where harvesting is 20% slower than in the previous year. There are various reasons for that including late ripening of the cherries, lack of labor (specially in the mountainous regions where coffee has to be hand picked) and the overlapping of the Arabica and Conilon harvesting, with workers working either in the Conilon or Arabica regions. The Conilon output is supposed to recover in 2018 after years of drought reaching 8.3 million bags in Espírito Santo alone, 40% higher than 2017.

Source: Valor Econômico

Brazilian Prices

Main Producing Regions / Farm Gate

July 31, 2018

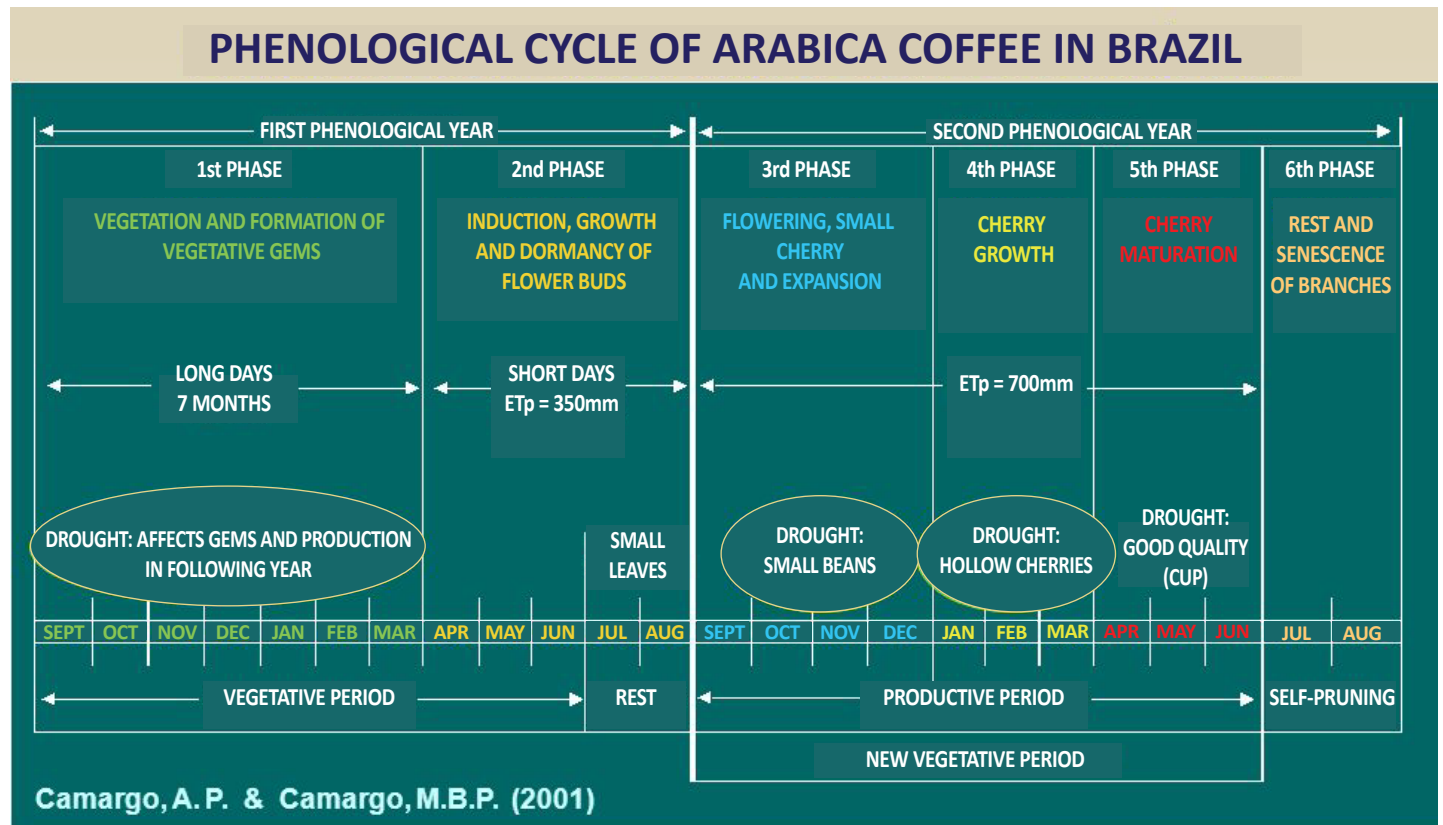
| Arabica Naturals (R\$/ 60 kg bag) | | Conilon / Robusta (R\$/ 60 kg bag) | |
|--|----------|------------------------------------|----------|
| Cerrado MG | 435,00 ↓ | Colatina-ES fair average price | 318,00 ↓ |
| Mogiana | 430,00 ↓ | | |
| South Minas | 430,00 ↓ | | |
| Arabica Pulped Naturals (R\$/ 60 kg bag) | | BM&F (US\$/60kg Arabica bag) | |
| Cerrado MG | 455,00 ↓ | Sep 2018 | 128,70 ↓ |
| South Minas | 450,00 ↓ | Dec 2018 | 131,10 ↓ |
| | | Mar 2019 | 136,00 ↓ |
| | | Real R\$ / Dolar US\$ | |
| | | July 31, 2018 | 3,75 ↑ |

+ 5.8%

Source: www.qualicafex.com.br

HOW DROUGHTS AFFECT COFFEE TREES AND THEIR PRODUCTION

Brazilian coffee production has been more affected by droughts than frosts in recent years. Therefore it makes sense to understand how drought affects coffee production and quality from a scientific standpoint. This is provided by the Phenological Cycle of Arabica Coffee in Brazil.



Given the importance of the Brazilian crop in the formation of international Arabica prices, the phenological cycle may be an important instrument to make or criticize estimates of crop size and coffee prices when droughts happen. Although coffee is an *annual* crop, meaning that trees produce every year, the actual coffee production cycle takes two years as shown in the picture above. At the same time that flowering and cherry development take place (3rd to 5th Phases), the plant is producing new branches (1st Phase) that will bear flowers and cherries one year later. That is why a single dry period may affect production in more than one year. The phenological cycle also helps to explain why a large crop is usually followed by a small one; in a simplified way, the effort the tree dedicates to cherry development in a large crop inhibits the growth of the branches that will produce coffee in the following year.

The phenological cycle above was prepared by Angelo and Marcelo Bento Paes de Camargo, who have been climatology researchers at the prestigious Campinas Agronomy Institute (IAC). Dr. Angelo Paes de Camargo went to Rutgers University where he worked with world renowned climatologist Thorntwaite. During his time at the University of California he pioneered work to explain how frosts happened and affected the coffee tree. Dr. Angelo, as he was known, founded the Agricultural Climatology Department at IAC and prepared the first climatic zoning for coffee (and many other cultures) in Brazil, as part of his lifetime work dedicated to climate at IAC. Dr. Angelo's son Marcelo joined him and continued his work at IAC. A University of Nebraska Ph.D., he led agrometeorology research at IAC and the National Research Council (CNPq) for 20 years during which time he wrote 155 scientific papers, 11 chapters in books and 2 books.

I was a professor at the Pinhal Agronomy University along with Dr. Angelo and had the pleasure and honor to have frequent contacts with him because we taught related subjects: Hydraulics & Irrigation and Climatology respectively. I am proud that Marcelo was our, Dr. Angelo's and my, student at the Pinhal school.

DENSIMETRIC SEPARATION BEYOND COFFEE: MVFS FOR OTHER PRODUCTS

Pinhalense state-of-the-art densimetric separators MVF can be used for a great number of products other than coffee, with the same specifications or with the design of the deck and other features adapted to the characteristics of the product, when required.



Pinhalense has already supplied MVF densimetric separators to clients' satisfaction for the following products besides coffee:

- cocoa
- pepper
- quinoa
- beans (of all types)
- sesame seed
- rice
- corn
- sorghum
- soy beans
- wheat
- cotton
- peanuts
- birdseed
- peas
- vegetable seeds
- brachiaria seeds

Six types of decks are currently available, each one in galvanized or stainless steel, and others may be developed for products different from the ones listed above.



Please contact the Pinhalense/P&A agent nearest to you or P&A itself to learn more about MVF separators for both products other than coffee and coffee itself.