



Coffee in Brazil - chronology

From José Peres Romero - Agronomist

Prehistory

F. Dafert (IAC - Campinas) and Dr. Luiz Pereira Barreto (1895) the first to use mineral fertilizers on coffee.

Personal history: in 1938 the grandfather Juan Romero in addition to its wisdom: "The worst thing in the world is to grow old, but worse still is not reached. Soil analysis of IAC and checked using the both Bordalez Nitrofoska and producing grapes I loved them. Other grandfather, Antonio Perez, produced vegetables only with manure, which forced me to pick up every day the animal waste on the street.

First challenge of my life: "what were better, manure or chemical fertilizers?"

How many lies secrets that my youngest mind did not understand and that led me to study agricultural Engineering to understand this apparent nonsense.

Pioneer coffee IAC - Campinas

In 1926 the new institute director Dr. Theodoreto de Camargo, the first pedological contracts in Brazil, Dr. Paul Vageler. Along with other notables such as Dr. Carlos A. Krug, Manoel de Barros Ferraz, Alcides Carvalho, José Setzer, Angelo Paes de Camargo, Coaracy Moraes Franco and other professional level, make a revolution in genetics and new cultural practices in coffee. Attached soil testing ground coffee virgin after 22 years, up to 120 cm depth, in complete decay in the best Brazilian soil (soil roxa) to lose 50% to 93% of the macronutrients N, P, K, Ca and Mg. The worst was responsible for checking erosion and half hidden (roots) dead by adverse physical, chemical and biological soil in 22 years damaged. Remember Dr. Paulo Alvim, Dr. Wilson A. Araujo and H. Jenny.

In 1960, Walter Lazzarini and his team at IAC, Coaracy Franco and others, brought the biggest surprise, confirming the initial work of IRI / IBEC (Rockefeller Foundation) to the adventure of growing coffee in Brazil's worst virgin soil, Cerrado soil, Batatais in São Paulo state, with the incredible productions of data zero and 37.8 bags / ha (54 bags per acre) of 60 kilograms of green coffee (attached), together with earlier studies of roots in coffee (half hidden), with the death of the control plants.



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Later, Dr. Angelo Paes de Camargo and his son, Dr. Marcelo Bento Paes de Camargo, another development with the phenology of the coffee in 2 years and its biennial constant.

The years 1950 to 1975.

IRI / IBEC – Rockefeller Foundation are pioneers in soil mulching and foliar nutrition joint IAC – Campinas, with remarkable results of macro and microelements in soils of Cerrado (where even the ants are hungry!)

The great cultural innovations

Completely changing the coffee of Brazil, leaving only the variety Bourbon (Caturra).

Distance. Fausto Moreira planting invents "Renque" of 0.5 m between plants, as set by the researcher Helio Scaranari (IAC). Starting from streets and mechanized harvesting machine with Jacto company K3.

Pruning and renovation of FIA (Foliar Index Area). Rust makes the evolution of the use of pesticides in coffee growing, along with control of the bit - *Hypotenemus spp* - and foliar fertilizers.

Weeds are friends, especially *Brachiaria*, peeled 3 times a year and herbicide application prior to harvest (end of cycle) to maintain as much as possible on land covered by organic matter optimizing irrigation water where it is needed most.

Mulch (or lives) of the soil with higher water retention and change in physical properties and biological forgotten in the richest soil on mycorrhizae, N₂-fixing bacteria and better control of nematodes. The best use of fertilizers, lime, magnesium and plaster (CaSO₄) in coverage.

Fertilizer formulas used so far are 10-10-10 and 20-05-20 with boron and zinc and the concept of the law of equilibrium (maximum and minimum) nutritional, technical and economic use of the Fertigrama, in collaboration with Dr. E. Malavolta (attached) and start the coffee-growing precision and the 5 basic rules:



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1. What?
2. When?
3. How much?
4. Where?
5. Cost/Benefit? (Energy balance).

All this, with the following soil and climatic conditions, associated with Mr. Joao Carlos P. Romero:

1 - PAM - Modular Fertilizer Program: analysis of the soil with minimum area of 1.0 ha (2.5 acres) for variety and exposure subsamples North, South, East and West; depth of 0-20 cm each year and 20-40 cm every 2 years. After 4 years, samples of 0-20, 20-40, 40-60 and 60-80 cm deep.

Foliar analysis, minimum of 1 year (Best 2), after flowering and evaluation of possible good harvest by area for the decision taken in future fertilization and set in the GPA.

2 - Weather: rain, temperature, actual and potential evapo transpiration, wind, ice, air and other important natural phenomena, varying by altitude and latitude.

3 - Quality: grain harvest 'mature' with the CD process (Cereja shelled Brazil - semi-washed), unfermented and cheaper, with economy of time, dryers and good cup quality.

Recent developments

Use of plant regulators, hormones, plant bioactives, biostimulats, added or not to pest control.

Bacteria in the rhizosphere, promoting growth of plants fixing N₂, or PGPR and PGPB (rhizobacteria and fungi useful.) For the latter, the molecular genetics revolution that can change a lot, not in production forecasts and cultural practices in interaction: genotype X medium = product.