Early selection in the development of clonal cultivars of *Coffea canephora*

Mistro, Júlio C. (julio.mistro @sp.gov.br)[1]; Satorres, Elaine S.M. [1]; Kameyama, Choshin[2]; Savazaki, Édson T. [2]

[1]IAC, Campinas, SP, Brazil; [2]CDRS/SAASP, Lins, SP, Brazil. Financial support: Consórcio Pesquisa Café, CNPq - Brazil

Introduction

The development of a *Coffea canephora* cultivar takes from 20 to 25 years, but some stages of the cycle and years of evaluations within each selection cycle can be reduced so that the completion of the cultivar is faster.

The objective of this work was to estimate genetic parameters and quantify the GxE interaction in order to carry out the early selection in *C. canephora* clones aiming at the development of clonal cultivars for the state of São Paulo in Brazil.

Materials and Methods

An experiment containing ten *C. canephora* clones was conducted in the city of Cafêlandia (SP) in 2016, following a randomized block design with four replications and five plants per plot without irrigation. Two harvests were performed and the data were analyzed using mixed models with matrix equation: $y = X_m + Z_g + W_p + T_{gc} + Q_s + e$ (Resende, 2016).

Results and Discussion

Absence of genetic variability for the selection as well as a high GxE, reflecting periods of high temperatures with absence of rain in both years. Individual heritability in the broad sense was very low, as well as the genetic correlation between harvests, resulting in a complex interaction. Clones 4 and 10 showed positive GxE interactions, that is, they were less affected by the environment; on the other hand, clones 1 and 6 showed negative GxE in both years.

Effects	Components	Genetic parameters		Clone	GxE
ANADEV - clone	LRT = 1.04[ns]	h_g^2	0.12	1	-114.26
ANADEV - GxE	LRT = 43.54[**]	h_m^2	0.52	2	-27.94
Clone	V_g = 90397	CV_e (%)	0.68	3	-58.29
Plots	V_{plots} = 125944	CV_r (%)	0.40	4	+110.84
GxE	V_{ge} = 140754	r_{gc}	0.59	5	-77.80
E. permanent	V_{perm} = 8075			6	-209.81
Error	V_e = 360153			7	-120.81
				8	-73.10
				9	-147.04
				10	+295.55

Conclusion

Due to the significant environmental influence it was not possible to carry out the selection