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Introduction

Arabic coffee (*Coffea arabica*) has approximately 1.2% caffeine in its beans. Caffeine consumption can cause certain discomfort to some consumers. Caffeine is removed from the beans using water or organic solvents.

The research objective was to develop decaffeinated coffee cultivar by the genealogical method producing beans with a maximum caffeine content of 0.10% and with adequate productivity

Materials and Methods

Progenies were obtained from plant-crossing between decaffeinated mutants (Silvarolla et al. 2004) and Brazilian cultivars. F₃ plants are being evaluated in an experiment in randomized blocks, with 35 treatments, four replications and five plants per plot. Agronomic evaluations and determinations of the caffeine content in the beans have been carried out.

Results and Discussion

The caffeine in grains varied between 0.01% and 0.10% while the productivity between 25,1 and 67,5 sc/ha. Plant 1 had almost no caffeine, but its production was low. Plants with the best performance were: 2 with 0.08% and 67,5 sc/ha; 3 with 0.05% and 45,7 sc/ha; 4 with 0.08% and 42,6 sc/ha; 5 with 0.06% and 40,1 sc/ha.

Code	% caffeine	Productivity	
1) IAC 293688	0.01%	1,986 kg/ha	27,0 sc/ha
2) IAC 293540	0.08%	4,962 kg/ha	67,5 sc/ha
3) IAC 293611	0.05%	3,360 kg/ha	45,7 sc/ha
4) IAC 293596	0.08%	3,132 kg/ha	42,6 sc/ha
5) IAC 293667	0.06%	2,952 kg/ha	40,1 sc/ha
6) IAC 293578	0.04%	2,922 kg/ha	39,7 sc/ha
7) IAC 293604	0.10%	2,688 kg/ha	36,6 sc/ha
8) IAC 293712	0.05%	2,532 kg/ha	34,4 sc/ha
9) IAC 293739	0.04%	2,364 kg/ha	32,1 sc/ha
10) IAC 293653	0.08%	2,280 kg/ha	31,0 sc/ha
11) IAC 293525	0.03%	2,100 kg/ha	28,6 sc/ha
12) IAC 293681	0.06%	1,848 kg/ha	25,1 sc/ha
13) Catuai	1.17%	3,151 kg/ha	42,8 sc/ha
14) AC1	0.08%	1,385 kg/ha	18,8 sc/ha
15) Mundo Novo	1.13%	1,625 kg/ha	22,1 sc/ha
16) Obatã	1.21%	2,919 kg/ha	39,7 sc/ha

Conclusion/Perspectives

- Caffeine in grains level equal to or less than 0.10% and yields above 1,800 kg/ha;

- These plants will be cloned for regional assessment, minimum 3 locations, for their release to producers

Reference:

Silvarolla et al. 2004 Nature DOI: 10.1038/429826a