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The conilon coffee plant (seeds, husks and leaves) and its numerous possibilities in the food and pharmaceutical industries

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Introduction: Brazil is the second producer of canefora coffee, mainly the conilon cultivar, accounting for about 28% of the world's canefora production[1]. A large amount of husks and leaves is produced yearly and most of it is discarded. This study aimed to investigate the bioactive profile of seeds, husks, and leaves of conilon coffee genotypes and select a number of them to meet market demands in the food and pharmaceutical industries.

Materials/Methods: Promising plants of *C. canephora* cv. conilon (in regards to productivity, pest resistance and warm climate adaptation) (n = 42) were reproduced by clonal propagation, in Espírito Santo, Brazil. The contents of caffeine, eight chlorogenic acids (CGA) and trigonelline were measured by HPLC-DAD (triplicate analysis, results on dry basis-db) in seeds, husks, and leaves from three consecutive crops.

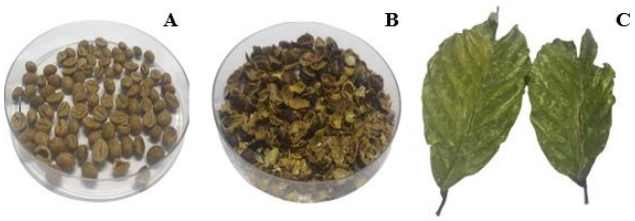

Figure 1: Dried green seeds (A), husks (B) and leaves (C) of new genotypes (n = 42) of *C. canephora* originating from the conilon cultivar.

Results/Discussion: The contents of bioactive compounds varied considerably among the parts of plants and genotypes (Table 1). Variation among the three crops was higher for CGA. Different from arabica coffees, the large compositional variability is expected in canefora coffees, given the polygenic determinism and heterozygosity. Seeds of a few genotypes showed consistently higher or lower contents of bioactive compounds and soluble solids in the three crops, being registered as cultivars. Husks and leaves of a few genotypes also showed consistently higher content compared to others.

Table 1: Variation in the chlorogenic acids, caffeine and trigonelline contents in seeds, husks and leaves of selected *C. canephora* cv. conilon genotypes, from three consecutive crops.

	Variation in the bioactive compounds contents (g/100g)		
	Chlorogenic acids (CGA)	Caffeine	Trigonelline
Seeds	3.71 to 9.71	1.21 to 2.63	0.83 to 1.12
Husks	0.43 to 1.65	0.13 to 0.84	0.59 to 1.24
Leaves	0.80 to 2.22	0.33 to 2.01	0.74 to 1.84

Conclusion/Perspectives: The parts of the plant evaluated are promising material for production of beverages, nutraceuticals and cosmetics, or for extraction of compounds for use in the food and pharmaceutical industries, promoting sustainability and supporting circular economy and human health.

References:

1: ICO (2023). Trade statistics. Available online: https://www.ico.org/new_historical.asp?section=Statistics.