

Influence of label information on the acceptance of an acrylamide-reduced coffee by consumers in the city of Rio de Janeiro, Brazil

Ana. Carolina Vieira-Porto¹, Adriano Gomes², Otniel Freitas³, Adriana Farah¹ (afarah@nutricao.ufrj.br)¹
¹LQBA & NUPECAFÉ, UFRJ, Brazil ; ²IFRJ, Brazil, ³Embrapa, Brazil.

Introduction: The high intake of acrylamide (ACR) through coffee is a concern because of its potential carcinogenic effect in rodents ¹

Objective: 1) to ratify the sensorial similarity of regular (REG) and treated (TR) coffee with L-asparaginase; **2)** to investigate the effect of low-ACR coffee claims on the sensorial acceptance of REG and TRE coffees by consumers in the city of Rio de Janeiro, Brazil.



Coffee roasting

Asparagine → acrylamide



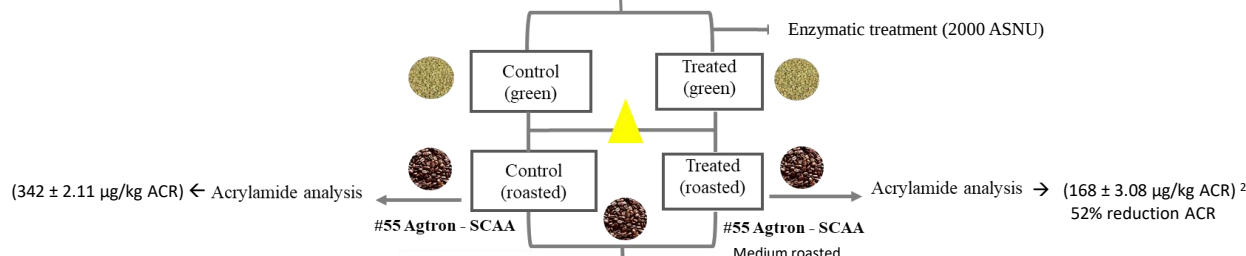
L- asparaginase

Asparagine → acrylamide



Materials and Methods

Sample: Arabica coffee from Cerrado – MG, Brazil



Beverage preparation:
concentration 10% w/v



Sensory analysis

Total n= 444 consumer assessors (18-59 years old), 50% male and 50% female.

Statistical analysis:
ANOVA (p < 0.05) and MFA

Acceptance and Purchase Intent tests ³

Online questions

Untreated coffee (control)

Label without claim versus label with claim
(n=111)



Untreated coffee (control)

Label without claim versus label with claim +
information (n=117)



Treated coffee (control)

Label without claim versus label with claim
(n=110)



Treated coffee (control)

Label without claim versus label with claim +
information (n=106)



Figure 1: Study experimental design. Note: L2=Claim – “low acrylamide content”; L3 = L2+ Label information – “Acrylamide is a substance present in most roasted coffees. Its presence is potentially toxic to human health (IARC, 1994). This coffee was developed using a natural process to reduce acrylamide levels”.

Results/Discussion The mean Acceptance (A) scores for all tests ranged between 7.3 and 7.8, on a scale of 9, and Purchase intent (PI), between 4.0 and 4.3, on a scale of 5, with higher scores for labels with claims. Results from tests with L2 and L3 were not different statistically. The percentage of women and men who were influenced by the health claims was balanced (54% women). Based on the assessors’ comments, the improvement in A and PI was due to the belief that they were drinking a healthier beverage after reading the claims, especially those with a higher level of education. Most consumers who were influenced by the health claims were willing to make changes in their eating habits for health improvement.

Conclusions & Perspectives: Treatment with liquid L-asparaginase did not affect coffee flavor. Label claims increased consumers’ acceptance of the coffee beverages. The viability of such a product on the market depends mainly on large-scale operating conditions to maintain high sensory quality and final cost.

References:

- (1) IARC Monography, vol 60, 1994, p.398
- (2) Vieira-Porto et al. Food Research International 186, 2024, 114333.
- (3) Meilgaard, et al. In M. C. In Meilgaard, B. T. Carr, & G. V. Civille (Eds.), Sensory Evaluation Techniques (4th ed.), 2007, pp. 173–186