

GRANULOMETRY SCREEN BEAN SIZE IN ETHIOPIAN GENOTYPES OF *COFFEA ARABICA*

Patricia H. SANTORO^{1,2} (patriciasantoro@idr.pr.gov.br), Vania KAJIWARA¹, Maria E. de C. LAGOS¹, Natália EVARISTO¹, Lorena J. da SILVA¹, Gustavo H. SERA^{1,2}

¹IDR-PARANÁ, Londrina, Paraná, Brazil; ²Brazilian Consortium for Coffee Research.

Introduction

Physical characteristics of the coffee bean, such as size, shape, and appearance, are quality attributes that add commercial value to coffee. Identifying genetic sources for desirable raw bean traits is highly important for the development of commercial genotypes [1].

Materials and methods

Four replicates of 100 g of raw coffee were used for grain size classification using sieves, across 30 genotypes of *Coffea arabica*. The sieve for flat-convex beans ranged from 10 to 19, and those for the oblong beans ranged from 8 to 12. To simultaneously evaluate the sieve sizes of Ethiopian coffees, multivariate analysis (PCA) was applied.

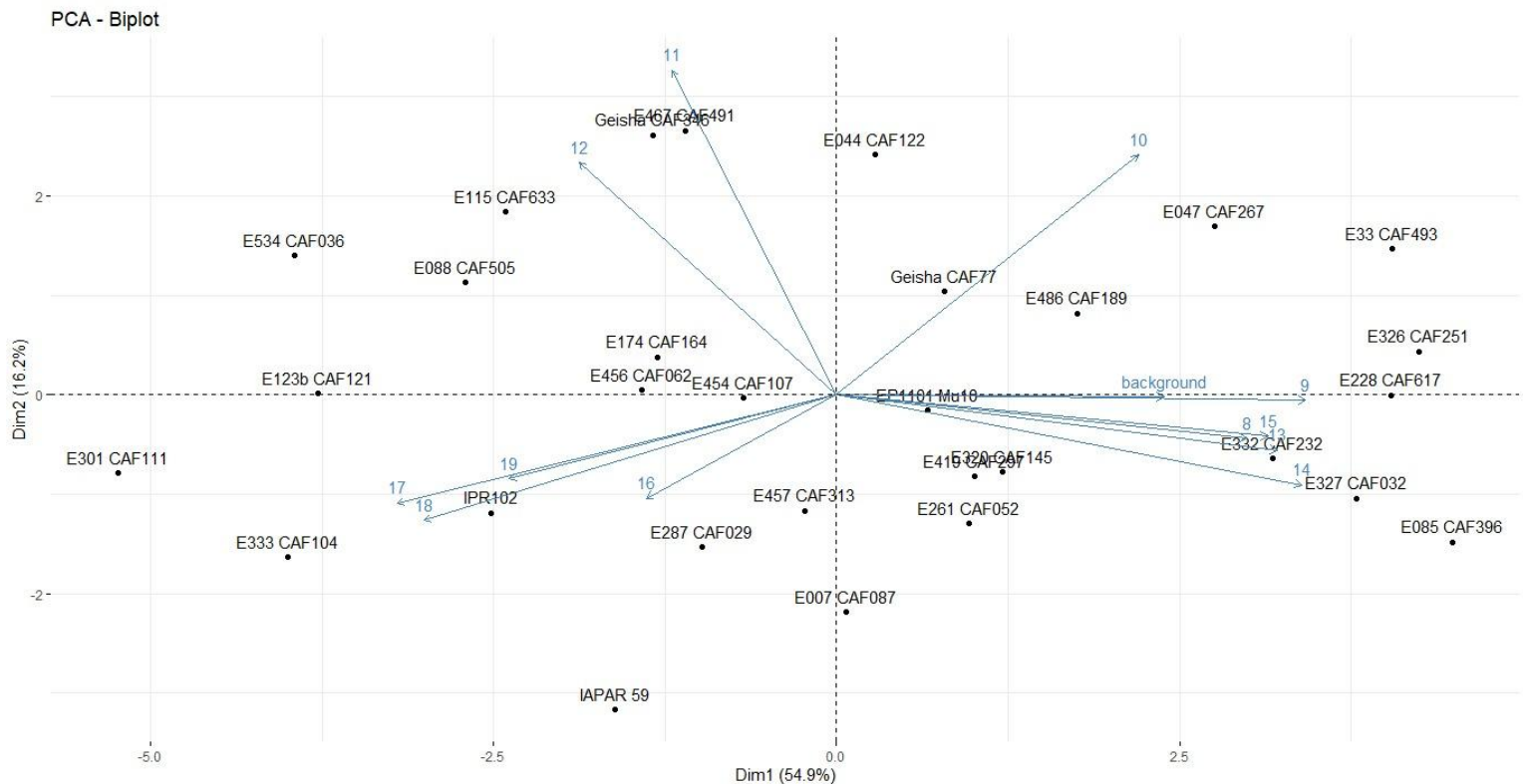


Figure 1. Principal component analysis (PCA) of bean size distribution in Ethiopian *Coffea arabica* genotypes.

Results

The first two principal components factors explained 56.2% and 17.4% of the variability among the samples (Figure 1). The genotypes E123b CAF121, E301 CAF111, E333 CAF104, IPR102, E454 CAF107, E287 CAF029, E457 CAF313, E007 CAF087 and IAPAR 59 located in Dim1 (-) they exhibited larger flat convex grains, retained on sieves larger than 16. The genotypes E088 CAF505, E115 CAF633, E534 CF036, Geisha CAF346, E467 CAF491, E174 CAF164, E456 CAF062, E044 CAF122, Geisha CAF77, E486 CAF77, E486 CAF189, E047 CAF267, E33 CAF493, E326 CAF251 and E228 CAF617 located in Dm2 (-) they exhibited smaller grains, with the largest quantities of grains on sieves smaller than 12.

Conclusion and perspectives

The genotypes with a higher quantity of larger grains show promising potential for use in coffee breeding programs, contributing to improved physical quality.

References:

Tesfa, M. (2019). Effect of drying methodes on raw quality of selected cultivars of arabica coffee (*Coffea arabica* L.) grown in South West, Ethiopia. Int. J. Sci. Res, 8, 1412-1420.