



## Polyphenols content and antioxidant capacity of traditional juices consumed in Côte d'Ivoire

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### ABSTRACT

*Objective:* This study aims at determining the total phenol content and antioxidant potency of traditional juices consumed as soft beverages in Côte d'Ivoire.

*Methodology and Results:* The total polyphenol content (TPC) of juices of baobab fruit pulp, passion fruit pulp, lemon, tamarind pulp, also Roselle calices and ginger roots was determined by the Folin-Ciocalteu (FC). Their antioxidant capacity was assessed as ability to scavenge 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical and the radical-cation ABTS<sup>+</sup>, and the ferric reducing antioxidant power (FRAP). An overall antioxidant composite index (ACI) of each juice was determined by calculating an index score referring to an index value of 100, assigned to the best score of antioxidant capacity for each test and the index value of the juice. TPC ranged from  $3.7 \pm 2.49$  mg of gallic acid equivalents/mL of juice for lemon to  $50.1 \pm 15.5$  mg of gallic acid equivalents/mL of juice for baobab. The rank order of TPC of the investigated juices was baobab > Roselle > tamarind > ginger > passion > lemon. Baobab fruit juice and Roselle calices juices exhibited the highest antioxidant potency with the three DPPH, FRAP and ABTS methods and had the highest antioxidant composite index (89.5 and 96.1 respectively). These juices are followed by tamarind fruit juice with values of TPC and ACI equal to 22.92 mg of gallic acid equivalents/mL of juice and 74.4 respectively.

*Conclusions and application of findings:* This study shows that baobab juice contains the highest total polyphenol amount, followed by Roselle juice. Although all the investigated juices exhibit an antioxidant activity, these two beverages present the highest antioxidant capacities. Regarding these findings, Roselle baobab and Tamarind juice juices are the most promising antioxidant sources and should be promoted as functional beverages to fight against chronic diseases in Côte d'Ivoire.

**Keywords:** juices, homemade, total phenol, antioxidant activity, Côte d'Ivoire