Antioxidant and antibacterial activities of cashew
(*Anacardium occidentale* L.) apple juice concentrated from western three regions of Côte d'Ivoire

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**ABSTRACT**

**Objectives:** The present study was undertaken to determine the antioxidant and antimicrobial activity on bacterial growth of juice extracted from two varieties of *Anacardium occidentale* (yellow cashew apple and red cashew apple) grown in three western region of Côte d’Ivoire.

**Methodology and Results:** Cashew apples collected from three regions (Zzan, Gbéké and Marahoué) were transported from the plantations located in the villages of the three regions to the laboratory in where the juice extracted was analysed. Seven (7) phenolic acids were characterized by HPLC. The minimum inhibitory concentration (MIC) was determined against: *E. coli*, *S. aureus*, *Salmonella* typhimurium, *P. aeruginosa* and *Yersinia enterocolitica* 4/O:3/VIII. The contents of gallic acid ranged from 2.74 to 33.13 mg/L; 0.83 to 43.12 mg/L for caffeic acid; 1.29 to 4.52 mg/L for quercetin; 3.13 to 8.95 mg/L for p-coumaric and 3.69 to 24.23 mg/L for ferulic acid. However, *S. aureus* was more sensitive to the extract. Zzan yellow cashew apple and Zzan red cashew apple extracts have showed better activities on bacterial.

**Conclusions and application of findings:** The results of this study showed that red and yellow cashew apple juice of the three agro-ecological zones of Gbéké, Marahoué and Zzan is a good source of biomolecules endowed with antioxidant and antibacterial activities. Cashew plants can therefore be used to provide low-cost nutritional and dietary supplement for low income people. Apart from the ecological zone, the color of the apple also influences the composition of phenolic compounds studied apple juice. Cashew apple juice could also be a potential source of compounds with antimicrobial and antioxidant that can contribute to the treatment of health disorders.

**Keywords:** *Anacardium occidentale*, cashew apple juice, antibacterial, antioxidant activity, Côte d’Ivoire