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Polyphenols and flavonoids in Colombian fruit and vegetables: Biological action and health benefits, a scientific and social contribution

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Polyphenols are attributed to multiple biological activities, providing health benefits and physiological aid to living organisms. Nutritional contributions and therapeutic applications of polyphenols and flavonoids have been reported in multiple studies, and these phytochemicals can be incorporated into dietary products. Fruits and vegetables are important sources of nutritional and therapeutic compounds. This study presents a sample of 21 Colombian fruits and vegetables containing different amount of polyphenols and flavonoids. Polyphenols in these products have several applications and offer benefits, such as antioxidant, bactericidal and anti-inflammatory action. A particular case for metabolic syndrome in a murine case is to be presented, regarding Colombian *Passiflora ligularis* (granadilla). Twenty-eight (28) overweight induced Wistar rats were distributed in a completely randomized experimental design, forming a 2X3+1 factorial model. Different physical and biochemical variables were analyzed. The extract of *C. sinensis* statistically reduced water consumption in comparison with the control group. For serum variables, significant glucose reduction was observed in the rats consuming polyphenols from *P. ligularis*. Along with metabolic benefits, studies related to polyphenols and flavonoids in Colombian fruits and vegetables look to highlight an aggregate value that could contribute to promoting new plantations throughout the country. This social aspect is a key to strengthen land restitution processes the Colombian Government is undertaking as one of the landmark peace agreement recently signed with Revolutionary Armed Forces of Colombian (FARC). Colombian fruits and vegetables and polyphenol related studies look, in the immediate present, for far more than scientific achievements and nutritional benefits.

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