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## Four Clusters of Plant Species with Medicinal Use Consumed by Indigenous People in Guasaganda, Central-Ecuador

DANIELA PEÑAFIEL<sup>1</sup>, HOLGER CEVALLOS<sup>2</sup>, RONALD VINCES<sup>1</sup>, PATRICK VAN DAMME<sup>3</sup>, RAMON ESPINEL<sup>1</sup>

<sup>1</sup>*Ecuadorian Polytechnic University of the Coast, Fac. of Life Sciences, Ecuador*

<sup>2</sup>*Ecuadorian Polytechnic University of the Coast, Fac. of Natural Sciences and Mathematics, Ecuador*

<sup>3</sup>*Ghent University, Dept. of Plant Production - Lab. for Tropical Agronomy, Belgium*

### Abstract

About 370 million people worldwide have indigenous ethnicity. Most of them preserve health by practicing ancestral beliefs. This practice prevents and treats diseases using mainly plant species. Documenting the medicinal use of plant species is important to conserve the indigenous knowledge. To achieve this, we interviewed local people and collected medicinal plants at the forest of Sacha Wiwua in Cotopaxi, Central Ecuador. Interviews used a semi-structured questionnaire, and plant collection used quadrants of 6.25 square meters. The Ministry of Environment provided scientific permits for plant collection. We identified plant species using a herbarium inventory. As a result, we identified 69 medicinal plants, which have at least one of 30 different medicinal properties. The median number of use per plant is 2.9 ( $\pm$  2.7) with a maximum of 14 uses per plant. A hierarchical cluster analysis using the Ward method and binary measure was used to group species in SPSS. We identified the species, which are associated to treat four groups of dietary-related symptoms. These symptoms include i) stomach pain and aromatic, ii) detox, laxative, anti-intestinal parasites and inflammation, iii) diabetes and cholesterol, and iv) anti-diarrheal and intestinal infections. Results show the list of species grouped under these 4 clusters, the part(s) of the plant used and the preparation method. Local interventions should promote the cultivation and domestication of these plants in home gardens to have them freely available for medicinal use with potential for commercialization. Rural development strategies should include empowering women to consume and commercialize these plants. Further biochemical research should confirm the medicinal properties of the biocomponents from these plants to validate their local beliefs.

**Keywords:** Health, medicinal, plant, species