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“Filling gaps and removing traps
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Nutritional Potential of Indigenous Vegetables Growing in Understorey Coffee Agroforests of Yayu, Southwestern Ethiopia

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Abstract

Ethiopia is confronted with the paradox of hosting hundreds of edible plants showing a high level of food and nutritional insecurity. Ethiopians' diets heavily depend on staples and often lack protein and micronutrients. Hence, a large section of the population, particularly children and women, are malnourished with respect to one or several nutrients. In southwestern Ethiopia, indigenous vegetables growing within agroforestry systems have the potential to fulfill the nutritional demands of local people. Therefore, this study assessed the nutritional potential of indigenous vegetables existing in understorey coffee agroforests of Yayu, SW Ethiopia. An extensive ethnobotanical household survey (n=300) was done to document edible plants. Biochemical analyses, i.e., proximate food composition, vitamin and mineral content determination of selected vegetables, were conducted using standard analytical methods. The results showed four vegetable species namely; *Amaranthus graecizans*, *Hypolepis sparsisora*, *Portulaca oleracea* and *Solanum nigrum* having higher protein, fat, provitamin A, calcium, magnesium and iron contents compared to regularly cultivated crops. However, the vegetables showed relatively low calorific content. Crude protein content ranged from 15.62 to 19.26 g/100 g edible portion (EP) in four of the determined vegetables. Calcium content varied largely between 585–785 mg/100 g but was notably high for *A. graecizans* (2065 mg/100 g EP). The iron content varied from 24.14 g/100 g in *S. nigrum* to 91.29 g/100 g in *A. graecizans*. Provitamins A were high in *A. graecizans* (75 µg retinol activity equivalent (RAE) /100 g EP) and *S. nigrum* (62.5 µg RAE/100 g EP). Calorific value was relatively high in *A. graecizans* (142 kcal/100 g) and *H. sparsisora* (143 kcal/100 g dry EP). In conclusion, underutilised indigenous vegetables are potential sources of dietary nutrients locally needed. Particularly notable as providers of protein, energy, minerals, and provitamins A are *A. graecizans*, *P. oleracea* and *S. nigrum*.

Keywords: Diet diversity, indigenous vegetables, nutritional potential, Yayu biosphere reserve