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Nutritional and anti-nutritional composition of some wild edible plants consumed in southwest Ethiopia

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Abstract

The Meinit community utilised wild edible plants (WEPs) widely for a variety of purposes mainly as food, household healthcare, and market value. WEPs namely, Chaw (*Solanum nigrum* L.), shutamodoroy (*Vigna membranacea* A. Rich), Entut (*Dioscorea praehensilis* Benth.), Gagut (*Trilepisium madagascariense* D.C.), and Tikawoch (*Cleome gynandra* L.), are naturally grown and consumed by Meinit cultural community in Bench Maji Zone, southwest Ethiopia. However, the proximate, mineral, and anti-nutritional compositions of these WEPs were not evaluated. This study aims to evaluate the proximate, mineral, and anti-nutritional contents of five WEPs. The WEPs were randomly collected from natural habitats and pooled samples were made. The nutritional and anti-nutritional composition of these WEPs were analysed following standard food analysis methods. Nutritional analysis reveals that the WEPs had important nutrients in the ranges of protein (4.00 to 21.66 %), fat (0.67 to 6.14 %), fiber (10.06 to 22.28 %), carbohydrate (38.11 to 82.99 %), and energy (274.99 to 371.05 kcal/100 g). Moreover, these WEPs contained substantial values of macro and micro minerals such as calcium (3.69 to 594.78 mg/100 g), potassium (440.61 to 1487.80 mg/100 g), sodium (174.87 to 277.42 mg/100 g), magnesium (68.19 to 588.06 mg/100 g), iron (0.83 to 38.46 mg/100 g), zinc (2.41 to 5.94 mg/100 g), and copper (0.06 to 0.49 mg/100 g). The anti-nutritional composition of five WEPs ranged from phytate (8.60 to 307.33 mg/100 g), condensed tannin (5.76 to 328.96 mg/100 g), and oxalate (43.68 to 443.87 mg/100 g). These results demonstrate that these WEPs had a significant source of food nutrients that contribute to dietary diversification, and food and nutrition security in rural people of southwest Ethiopia and elsewhere in the tropical country. Additionally, these research outputs provide baseline information for the food industry, policymakers, and community nutrition.

Keywords: Anti-nutritional content, nutrient composition, wild edible plants