Abstract

The study evaluated tannin concentrations in four vegetables, three grains and cassava roots as the most common foodstuffs in the diet of local communities from Emuhaya district in western Kenya and their nutritional health implication. Plant specimens were collected from local arable farms and market centres and their identities confirmed at Maseno University herbarium. Tannin content was evaluated using the International Phamacopoeia Method. Percent composition of tannins in the sampled specimens were: 9.49±0.6 for rattle pod (*Crotalaria brevidens* (*Emiroo*); Family, Fabaceae), 8.38±0.3 for narrow-leaf bitter-pea (*Daviesia leptophylla* (*Omurere*); Family, Fabaceae), 2.49±0.2 for amaranth (*Amaranthus hybridus* (*Tsimboka*); Family, Amaranthaceae), 0.42±0.04 for black nightshade (*Solanum nigrum* (*Lisutsa*); Family, Solanaceae), 9.21±0.4 for peanut/groundnut (*Arachis hypogaea* (*Tsinjugu*); Family, Fabaceae), 8.24±0.4 for sesame (*Sesamum indicum* (*Tsinuni*); Family, Pedaliaceae), 8.11±0.2 for finger millet (*Eleusine coracana* (*Obulee*); Family, Poaceae) and 6.99±0.5 for cassava (*Manihot esculenta* (*Emioko*); Family, Euphorbiaceae). *Solanum nigrum* had significantly the lowest tannin composition profile followed by *A. hybridus* and *M. esculenta* in that order ($P < 0.05$). Interestingly, these three plants are preferred in the diet to the rest of the plants. The results provide scientific rationale for dietary exploitation of these plants by the local communities and may lay down some groundwork for exploiting partially refined products such as peanut butter and a wide range of grades of flour for human consumption and livestock feeds. However, consumption of tannins in the diet may sometimes be necessary for optimal health but caution needs to be taken for their conflicting adverse medical-based nutritional and physiological effects.