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Chemical analysis of selected Ayurvedic drugs: *Yashtikalkaya* and *Rajahpravartanivati*

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Ayurvedic medicines have been widely used in Sri Lanka for thousands of years. Although they are considered as beneficial and free of side effects, some toxicity is reported. Therefore, objective of this study was determination of constituents of these drugs to ensure the quality and safety of consumers. Most of the Ayurvedic drugs contain inorganic minerals. *Palmanikkam*, *Sinakkaram*, *Kasis* and *Tankana* are mineral compounds that are used as raw materials in drug preparations. They are enriched with metals including Cu, Al and Fe. Using above materials *Yashtikalkaya* and *Rajahpravartanivati* were prepared in the laboratory according to the Ayurvedic pharmacopeia. Commercially available drugs were also collected. All these samples were subjected to wet digestion and metal concentrations were determined using Atomic Absorption Spectrophotometry. Volatile compounds present in *Yashtikalkaya* were determined using GC-MS. Cu concentration in *palmanikkam*, a raw material for *Yashtikalkaya* was 238.400 ± 0.011 mg/g and after purification it was 238.360 ± 0.124 mg/g. In prepared *Yashtikalkaya* Cu concentration (1.354 ± 0.402 mg/g) was higher than in the commercially available samples (1.030 ± 0.165 mg/g). Fe concentration in *Kasis*, a raw material for *Rajahpravartanivati* was 70.040 ± 0.290 mg/g and after purification it was 81.310 ± 0.729 mg/g. In prepared *Rajahpravartanivati* Fe concentration (8.469 ± 0.059 mg/g) was higher than in the commercially available samples (3.748 ± 0.121 mg/g). Although Pb, Cr, and Zn containing raw materials were not used for the preparation of those drugs, they were in detectable levels but all values are within the safe level. Butyl acetate, ethylbenzene, *p*-xylene, 1-ethyl-3-methyl-benzene, eugenol, tetradecanoic acid, 3-pentadecyl-Phenol, methyl palmitate, 4-methoxy-6-(2-propenyl)-1,3-benzodioxole were detected as volatile compounds. The amount of water can strongly affect the rate of the degradation of a drug. In prepared *Rajahpravartanivati* moisture content ($6.41 \pm 0.03\%$) was higher than in the commercially available samples ($5.15 \pm 0.02\%$) and in prepared *Yashtikalkaya* it was ($39.26 \pm 0.06\%$) higher than in commercially available samples ($30.12 \pm 0.12\%$). In prepared *Rajahpravartanivati* water soluble ash value ($78.20 \pm 0.02\%$) was higher than in the commercially available samples ($74.99 \pm 0.48\%$) and in prepared *Yashtikalkaya* it was ($68.20 \pm 0.02\%$) less than in commercially available samples ($88.62 \pm 0.16\%$). Hence the quality controlling aspects have to be implemented in the manufacturing process to avoid variations of those values in different brands of the same drug.

Keywords: Ayurveda, quality, *rajahpravartanivati*, safety, *yashtikalkaya*