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**A PHYSICO-CHEMICAL ANALYSIS OF A TRADITIONAL POLYHERBO-MINERAL
FORMULATION: VATHAGAJENDRASINGHA VATI AND INGREDIENTS**

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Vathagajendrasingha vati is an important polyherbo-mineral formulation that deals under Rasa shastra. It is used to prevent *Amavata* and severe stages of Paralysis. This drug contains plant-based and mineral-based ingredients. Selected chemical and physical parameters of the raw materials and the final products were analyzed. Moisture and ash content of the plant ingredients were determined using the recommended methods by AOAC. The moisture and ash contents of the plant ingredients varied in a range from 10.32±0.01% to 34.68±0.14%, 1.20±0.20% to 14.37±0.07% respectively. The total alkaloid content was analyzed by the Harborne method. It ranged from 1.53±0.23% to 39.73±0.28%. The antioxidant activity was determined by using the DPPH radical scavenging method. IC₅₀ values for every sample were calculated to determine the antioxidant activity. It ranged from 0.0058-0.1894 mg/mL. The metal composition was analyzed using an AAS. It has varied in a very broad range from 0.68-27071.80 µg/g. Mineral-based ingredients were also analyzed using conventional and nonconventional methods. A comparative study of physico-chemical parameters was conducted with the three different brands of the final product. The moisture, ash, and alkaloid contents of the final product ranged from 5.33±0.19% to 6.37±0.31%, 23.48±0.32% to 26.51±0.34%, and 14.58±0.62% to 17.56±0.28% respectively. All three samples show high antioxidant activity. The values obtained for the physico-chemical parameters can be used to maintain the consistency of the product and quality parameters during the large-scale manufacturing process.

Keywords: *Vathagajendrasingha*, physico-chemical analysis, alkaloid content, antioxidant activity, metal composition