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Physicochemical and Phytochemical Properties of the Amurthashtaka kwatha: An Ayurvedic Polyherbal Formulation

Vinodani L.P.S.¹, Jayasuriya W.J.A.B.N.^{1#}, Herath H.M.D.R.¹, Hapuarachchi S.D.²,
Dantanarayana P.³, Suresh T.S.⁴

¹Department of Pharmacy and Pharmaceutical Sciences, Faculty of Allied Health Sciences,
University of Sri Jayewardenepura, Nugegoda, Sri Lanka

²Department of Dravyaguna Vinghana, Institute of Indigenous Medicine,
University of Colombo, Rajagiriya, Sri Lanka

³State Pharmaceuticals Manufacturing Corporation, Dehiwala-Mount Lavinia, Sri Lanka

⁴Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura,
Nugegoda, Sri Lanka

#Corresponding author: banukie@sjp.ac.lk

Background: Amurthashtaka kwatha is an ayurvedic polyherbal formulation made up of eight plants, including bark of *Azadirachta indica*, seeds of *Holarrhena antidysenterica*, heart wood of *Santalum album*, stem of *Tinospora cordifolia*, whole plant of *Trichosanthes cucumerina* and rhizome of *Cyperus rotundus*, *Picrorhiza scrophulariiflora* and *Zingiber officinale*.

Objectives: To evaluate physicochemical and phytochemical properties of the Amurthashtaka kwatha.

Methods: The plant materials were purchased from three ayurvedic shops in Western Province, Sri Lanka and authenticated from Bandaranaike Memorial Ayurvedic Research Institute, Sri Lanka. Three separate kwatha preparations were done according to Ayurvedic pharmacy. One part of raw drugs, which represent equal quantities of eight plant parts were boiled with eight parts of water, and the final solution was reduced up to one-eighth. Phytochemical analysis of hot aqueous extracts of three separate preparations of kwatha from three Ayurvedic shops were performed as per standard protocols to detect phenolics, flavonoids, tannins, alkaloids, saponins, steroids, terpenoids, carbohydrates, proteins, phytosterols, and cardiac glycosides. Physicochemical analysis of each crushed Amurthashtaka kwatha powder was performed to determine total ash, acid-insoluble ash, water-soluble ash, moisture content, and extractable matters.

Results: According to the phytochemical analysis, all tested phytoconstituents (phenolics, flavonoids, tannins, alkaloids, saponins, steroids, terpenoids, carbohydrates, proteins, phytosterols and cardiac glycosides) were identified in each preparation of kwatha. The mean percentage (SD) values of three samples were 8.27 (± 0.47) for total ash, 3.09 (± 0.34) for water-soluble ash and 2.58 (± 0.73) for acid-insoluble ash. The mean values of three samples of kwatha were obtained as water-soluble 2.94 (± 0.28), ethanol-soluble 2.70% (± 0.07) and dichloromethane-soluble 2.24 (± 0.30). According to the moisture analyser method, the mean value of moisture content was 10.77 (± 0.67).

Conclusions: Physicochemical and phytochemical characteristics identified in the present study will be used as standard parameters for the identification and quality control of the kwatha.

Keywords: Amurthashtaka kwatha, Decoction, Physicochemical, Phytochemical, Polyherbal

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