

## Physicochemical and Phytochemical screening of '*Neerizhivu Chooranam 1*' used for Diabetes Mellitus in Northern Province, Sri Lanka

Merin Dinushiya J<sup>1</sup>, Nilanusha S<sup>1</sup>, Sugansika M<sup>1</sup>, Sivasinthujah S<sup>1\*</sup>, Sivarangini S<sup>2</sup>, Ravimannan N<sup>3</sup>

<sup>1</sup>Department of Pharmacy, Faculty of Allied Health Sciences, University of Jaffna

<sup>2</sup>Unit of Siddha Medicine, University of Jaffna

<sup>3</sup>Department of Botany, Faculty of Science, University of Jaffna

\*ssinthujah@univ.jfn.ac.lk

**Introduction:** *Neerizhivu Chooranam 1* is a polyherbal drug, mainly consists of *Terminalia chebula*, *Embilica officianalis* and *Murraya koenigi* and it is called as *Mathumaeha Choornam*. This medication is especially used in treating Diabetes Mellitus in Siddha Medicine in Sri Lanka and is given to the patients as a powdered formulation. There is a necessary to analyse the physicochemical properties and phytochemicals as there is no evidence of previous data and for its acceptability and safety for stakeholders.

**Objective:** To evaluate the physicochemical and phytochemical analysis of *Neerizhivu Chooranam 1*.

**Methodology:** The plant parts were collected separately in Jaffna, shade dried and powdered. The powdered plant parts were mixed in a ratio of 1:1:1 and sieved using 44 mesh sieves. The powdered drugs were subjected to physicochemical tests such as pH value, moisture content, total ash value, water soluble ash value, acid insoluble ash value, water-soluble extractives and ethanol soluble extractives. Preliminary phytochemical screening was done for the methanol extract obtained by maceration of the crude drug. All analyses were undertaken in triplicate and quantity values were presented as mean  $\pm$  standard deviation.

**Results:** The pH value, moisture content, total ash value, water soluble ash value, acid insoluble ash value, ethanol soluble extractives and water-soluble extractives were found to be  $3.550 \pm 0.020$ ,  $10.447 \pm 0.058\%$ ,  $5.583 \pm 0.144\%$ ,  $2.650 \pm 0.328\%$ ,  $0.317 \pm 0.029\%$ ,  $5.9730 \pm 1.921\%$  and  $20.400 \pm 0.812\%$ , respectively. The preliminary screening of phytochemicals indicated the presence of alkaloids, flavonoids, carbohydrates, reducing sugars, tannins, steroids, proteins, amino acids, glycosides, phenol, terpenoids and anthraquinones.

**Conclusion:** The values obtained from the tests showed good quality of the formulation as per the previous standard relating to the powder polyherbals formulation and these values for the *Neerizhivu Chooranam 1* can be used as reference standard in future.

**Keywords:** Diabetes Mellitus, Polyherbal, *Neerizhivu Chooranam*, Physicochemical, Phytochemical