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Study of phytochemical and physiochemical compositions of *Momordica dioica* Roxb. ex. Willd fruits and leaves

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Momordica dioica Roxb.ex. Willd is a perennial, dioecious climber belong to family Cucurbitaceae. Both the fruits and leaves of the plant are often used for theraputic purpose in Ayurveda and traditional systems of medicine. The fruits of *Momordica dioica* are believed to have diuretic, laxative, hepatoprotective, antivenomous, and anti-inflammatory properties, whereas the leaves of *Momordica dioica* possess aphrodisiac, hepatoprotective, antibronchitic, and antiasthmatic properties. Phyto-constituents and therapeutic activities are dependent on plant species or variety, their genetic makeup and maturity stages. Therefore, present study was undertaken to determine phytochemical and physiochemical compositions of fruits and leaves of *Momordica dioica*. Physiochemical composition was determined according to official AOAC method. Total Antioxidant Capacity (TAC) and Total Phenolic Content (TPC) were determined using the Ferric Reducing Antioxidant Power (FRAP) assay and Folin-Ciocalteu method respectively. There was a significant difference ($P < 0.05$) in proximate composition such as moisture, dry matter content, ash content, crude fat, and crude fiber among fruits and the leaves. The highest crude fat (0.49 ± 0.03%), fiber (2.34 ± 0.03%), protein (0.60 ± 0.05%) and dry matter (6.76 ± 0.43%) content were observed in the fruits. A significant difference ($P<0.05$) in total antioxidant and total phenolic content was observed between fruits and leaves. Among immature, mature, and ripened stages of the fruit, the highest total antioxidant (52.31 ± 0.82 mg TE/g DW) and phenolic content (8.86 ± 0.13mg GAE/g DW) were observed in mature stage of *Momordica dioica* fruits. At the same time, the highest antioxidant content was observed in the fruits at mature stage. Therefore as per the results, it was concluded that the phyto-constituents of fruits of *Momordica dioica* would be ideal to be incoporated into the pharmaceutical industries.

Keywords: Antioxidant capacity, *Momordica dioica*, phenolic content, proximate composition

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