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A Review on Evaluation Parameter for *Moringa oleifera* Flower as Potent Anti-Diarrhoeal Activity

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ABSTRACT

The fresh flower of *Moringa oleifera* were collected from geographical sources, Qualitative analysis by physicochemical test were performed, Analytical Parameter will be perform as Ash Values, total ash value, acid insoluble ash value, water soluble ash value, extractive Values, loss on drying according to given methods, then extraction and fractionation by appropriate method and isolated the phytoconstituents further go for evaluation purpose by castor oil-Induced model and data will analyze by one-way ANOVA.

Keywords: *Moringa oleifera,* anti-diarrheal activity, castor oil-Induced model and *Moringa.*

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1. INTRODUCTION:

Moringa oleifera (Moringaceae) is a small- to medium-sized tree, abundantly found in almost all over the plains of India.[1] It is mentioned as "Shigon" in the "Shushruta Samhita", supporting the evidence that cultivation of this tree in India was dates back to thousands of years. Several parts of the specie were used in tribal/traditional medicine for the diseases like sores, dysentery, pneumonia, cancer, etc. *Moringa* contains various phytochemicals, some of which are of high interest because of their medicinal values; in particular this plant is rich in a fairly unique group of glycoside compounds called as glucosinolates and isothiocyanates.[2]

The flowers are fragrant and hermaphroditic, surrounded by five unequal, thinly veined, yellowish-white petals. The flowers are about 1.0–1.5 cm (1/2") long and 2.0 cm (3/4") broad. They grow on slender, hairy stalks in spreading or drooping flower clusters which have a length of 10–25 cm.[3]

Flowering begins within the first six months after planting. In seasonally cool regions, flowering only occurs once a year between April and June. In more constant seasonal temperatures and with constant rainfall, flowering can happen twice or even all year-round.[3-5]

The fruit is a hanging, three-sided brown capsule of 20–45 cm size which holds dark brown, globular seeds with a diameter around 1 cm. The seeds have three whitish papery wings and are dispersed by wind and water.[6]

Fig 1: *Moringa Olifera* flower

Table 1: Plant Description

Plant	Description
Kingdom	Plantae
Family	*Moringaceae*
Species	*M. olefera*
Biological name	*Moringa olefera*
Genus	Moringa

2. PARAMETER FOR EVALUATION OF ANTI-DIARRHEAL ACTIVITY:

The following steps will be considered as:

2.1 Collection of plant materials[7]:

The fresh flower of *Moringa oleifera* were collected from geographical area like lucknow UP, Ajmer RAJ., Khargon MP. Then authenticated by certified botanist. Sample was shade dried, grinded and sieved (40 mesh) to get uniformly coarse powder.

2.2 Phytochemical investigation

Qualitative analysis by physicochemical test were performed, like test for various phytochemicals Sugar & Starch, Oil, Tannin, Phenolic & Flavonoid, Fiber, Total protein and Crude alkaloid content were determined in *M. oleifera* flower.[8-12]

2.3 Analytical Parameter[13-16]:

2.3.1 Ash Values:

The residues remaining after incineration is the ash content of the drug. Ash values are helpful in determining the quality and purity of crude drug, especially in the powdered form. It usually represents the inorganic salts naturally occurring in the drug and adhering to it, but it may also include inorganic matter added for the purpose of adulteration.

2.3.2 Determination of total ash value:

Accurately weighed about 3 gm of air dried powdered drug was taken in a tared silica crucible and incinerated by gradually increasing the temperature to make it dull red hot until free from carbon. Cooled and weighed, repeated for constant value. Then the percentage of total ash was calculated with reference to the air dried drug.

2.3.3 Determination of acid insoluble ash value:

The ash obtained as directed under total ash value was boiled with 25 ml of 2N HCl for 5 minutes. The insoluble matter was collected on an ash less filter paper, washed with hot water, ignited and weighed, then calculated the percentage of acid insoluble ash with reference to the air dried drug.

2.3.4 Determination of water soluble ash value:

The total ash obtained was boiled with 25 ml of water for 5 minutes. The insoluble matter was collected on an ash less filter paper, washed with hot water and ignited for 15 minutes at a temperature not exceeding 450°C. The weight of insoluble matter was subtracted from the weight of total ash. The difference in weight represents the water soluble ash. The percentage of water soluble ash was calculated with reference to the air dried drug.

2.3.5 Extractive Values:

Extractive values of crude drugs are useful for their evaluation, especially when the constituents of a drug cannot be readily estimated by any other means. Further, these values indicate the nature of the constituents present in a crude drug.

2.3.6 Loss on Drying:

Loss on drying is the loss in weight in % w/w determined by means of the procedure given below. It determines the amount of volatile matter of any kind (including water) that can be driven off under the condition specified (Dessicator or hot air oven)

2.4 Extraction and fractionation:

1 kg of powdered drugs were packed in soxhlet apparatus and continuously extracted with petroleum ether to defat the drug. Petroleum ether was removed from the powdered defatted drug, which was then extracted with ethanol (95%), double distilled water, chloroform and hexane. All the extracted were evaluated for anti-diabetic activity, then most bio potent extract further fractioned with hexane, chloroform and ethanol. The solvents were removed from each extract and fraction by distillation and the last traces of solvent being removed under reduced pressure. The extracts and fractions were weighed and their % value was recorded and also the physical appearance, color and odor was evaluated and recorded and thereafter, extracts were stored in refrigerator for further experimental work.[17]

3. EVALUATION METHOD:

3.1Experimental Animals:

Animals (albino wrister rats) of 130-175 g will be select and randomly divided into six groups (n=6) for screening. Two groups for test doses (150 and 300 mg/kg) of ethanol extract, while one each for standard drug and control respectively. Animals were placed in cages, fed with standard diet and water (Temp 27±2 °C). Before treatment animals were fasted overnight of food but not water. Conditions were maintained as per animal ethical committee guidelines.

3.2 Castor Oil-Induced Model:

The animals were divided into four groups of 6 animals each. The group 1 served as the control and received 0.5% CMC suspended in distilled water. The next three groups received castor oil in the dose of 1 ml per animal p.o. Half an hour after castor oil administration, group 2 and 3 receive extract at dose of 150 and 300 mg/kg body weight, p.o. and the group 4 receive Loperamide (3 mg/kg; p.o.) respectively. Following their administration, the animals were placed separately in acrylic cages with filter paper, which was changed every hour. The severity of diarrhoea was assessed each hour till 4 h. The total number of faeces (dry and wet stool) and diarrhoeal faeces (wet stool) excreted in record time were scored and compared with control group. The total score of diarrhoeal faeces of control group was considered that of 100%. The results were expressed in percentage of inhibition.[18]

3.3 Statistical Analysis:

Data observed by the study will express in mean ± SEM. The data will analyze by use of one-way ANOVA followed by Dunnett's test.[19]

4. CONCLUSION:

Moringa contains various phytochemicals, some of which are of high interest because of their medicinal values; in particular this plant is rich in a fairly unique group of glycoside compounds called as glucosinolates and isothiocyanates. The fresh flower of *Moringa oleifera* were collected from geographical sources, flowering begins within the first six months after planting. In seasonally cool regions, flowering only occurs once a year between April and June. In more constant seasonal temperatures and with constant rainfall, flowering can happen twice or even all year-round. Qualitative analysis by physicochemical test was performed, Analytical Parameter will be performing and all data observed and further study for castor oil induced method calculated anti-diarrheal activity.

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