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Standardisation of *Ocimum sanctum*

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Abstract

Ocimum sanctum Linn, also known as Tulsi in Hindi, is a tiny herb that may be found all throughout India. It is advised for the treatment of bronchitis, bronchial asthma, malaria, diarrhoea, dysentery, skin illnesses, arthritis, painful eye diseases, persistent fever, insect bites, and more. This study includes evaluation of different parameters, namely moisture content, total ash, water-soluble and acid-insoluble ash values of the raw drug. Physicochemical studies of Mother tinctures namely total solids, pH measurement, thin-layer chromatography (TLC), ultraviolet-visible spectra, wt./ml and alcohol content have also been standardised and presented for in-house mother tincture. Standardisation is useful in authentication of genuine drug.

Keywords: *Ocimum sanctum*, quality control, physicochemical analysis, standardisation, mother tincture

Introduction

It is also known as Tulsi. It is known as the "Queen of herbs," the fabled "Incomparable one," "The Mother Medicine of Nature," and is one of the most revered and sacred of all the many healings and health-giving herbs of the orient. The medicinal, religious uses of Tulsi have been reported from the ancient times for centuries in China, India and the rest of the Asian countries, North Africa and Australia. *Ocimum* is a perennial aromatic plant in the Labiateae family. Tulsi is its common name. It is grown and planted all throughout India. *Ocimum* or the Holy Basil is a well-known small herb in India. Its great importance to the Hindus is felt in connection with all their religious ceremonies.

This drug has been proved by Dr. Mure and introduced to homoeopathy. It is often used in Brazil "as a specific for diseases of the kidneys, bladder, and urethra," according to Dr. Mure. The provings of this drug has been done by Drs. Pramada Prasanna Biswas of Pabna, Bengal, N Sinha and N C Ghosh^[3].

The active components identified in *O. sanctum*, eugenol (1-hydroxy-2-methoxy-4-allylbenzene), have been shown to be substantially responsible for the therapeutic potentials. Eugenol, methyl eugenol, and caryophyllene are among the chemicals found in *Ocimum sanctum* leaves that are water-soluble phenolic compounds and may have immunostimulatory properties. Saponins have hypotensive, antihyperlipidemic, and cardio depressive effects.

The purity and quality of the finished products and raw medications are the keys to homoeopathic prescribing success. In a sick person, a low-quality medicine won't have the expected effects. Success in homoeopathic prescribing depends not only on the correct similimum, exact potency and proper repetition but also upon the purity and quality of raw materials and finished products. The medicine of sub-standard quality will not be able to produce desired result in the sick individual.

Materials and Methods

Raw materials Collection: Fresh plant material of *Ocimum sanctum* was acquired from reliable sources, such as the herbal gardens of Bhopal. Only those plants were collected which were fresh and free from all kinds of dust and insect nest. They were collected in fine sunny dry weather in early morning after disappearance of morning dew.

Preparation of sample

The process that will be followed for the preparation of mother tincture is Maceration. Mother tinctures were prepared under the NEW METHOD by Maceration process. This process is used in those substances which have viscid juice, which do not allow menstrum to penetrate rapidly due to the smallness of inter-molecular spaces.

Hard, gummy and mucilaginous drugs of vegetable and animal kingdom are prepared by the process of maceration. The reason for cutting or pounding of the material is to increase the surface for penetration of alcohol.

The sample was prepared in accordance with HPI's standard criteria. Preparation of this tincture was done by the new method of preparation of mother tincture that is maceration. Moisture content of the raw materials is done prior to preparation of the mother tinctures.

Calculation of Moisture content: Initial weight taken is 5 g
Final weight is 1.9g Difference in weight is 3.1 g
So, in 5gms of raw drug, moisture is 3.1 g
So, Moisture content is = $3.1/5 \times 100$
= 62%

Calculation of Mother tincture

Hence in 5gms of fresh *Ocimum* contains 1.9g of dried drug and 3.1g or 3.1 ml of plant moisture. For 1.9g dried drug to be present, the amount of pulp required is 5g.

To prepare 250ml mother tincture, solid is 25g (drug strength 1/10)

So, for 25g dried drug substance, the amount of pulp required is = $\frac{5 \times 25}{1.9}$
= 65g

Therefore, Magma 65g Dried drug 25g Plant moisture 40ml (62% of magma)

Strong Alcohol to be added = 250-40
=210 ml

Water to be added = 7% of 250
=17.5ml

Note: As moisture content is 7% less than the standard formula, 17.5ml of water is added.

Parameters under study:

The following parameters are studied namely, Ash Value

Acid Insoluble ash Water soluble ash pH

Alcohol content Wt./ml

Total solids TLC

Lambda max.

Results

The results of the physicochemical studies of the raw drug and finished products are summarised in Table 1 and Table 2.

Discussion

As per WHO, Homoeopathy has grown enormously in the last decade and is now the second most preferred mode of treatment. This gain in popularity and fame is due to the fact that Homoeopathic Medicines have little or no side effects at all. The quality of medications was another concern for Dr. Samuel Hahnemann, who stated that "a true physician must have authentic medicines in perfect condition and know they are genuine." It is important to obtain medicines from a variety of sources while yet maintaining their therapeutic benefits. The majority of homoeopathic medications come from plants. The medicinal plants are abundant in secondary metabolites (possible drug-sources) and essential oils, both of which have therapeutic value. According to the World Health Organisation, between 70 and 80 percent of the world's population, especially in underdeveloped nations, uses alternative medicine as their primary form of treatment. The

drug substances were collected after proper identification from different nurseries of Bhopal, M.P. Only Healthy, mature and well-developed plants were selected for the purpose of mother tincture preparation. *Ocimum sanctum* whole plants excluding root was used for preparation of mother tincture as per the direction laid down in H.P.I. (vol.1). The Mother tinctures were prepared according to the new method by the Maceration process.

The study was conducted in three stages

- Standardisation of raw materials
- Preparation of Mother tincture
- Standardisation of Mother tincture

Table 1: Parameters of RAW DRUGS

Sl. No.	Parameters	Values
1.	Moisture content	62%
2.	Total ash	21%
3.	Acid insoluble ash	69%
4.	Water soluble ash	11%

Table 2: Parameters of M other Tincture

Sl. No.	Parameters	Values
1.	pH	6.03
2.	Alcohol content	69.78%
3.	Wt./ml	0.897g
4.	Total solids	1.4
5.	Lambda Max	245, 292, 326
6.	TLC (Rf value)	0.96, 0.89, 0.82, 0.41, 0.24, 0.20

Conclusion

According to the WHO, homoeopathy is the second-largest medical system in the world. This is a well-established and acknowledged fact. A significant portion of the populace is aware of and has benefited from homoeopathic medication, which is safe, easy to use, and reasonably priced in comparison to other forms of medicine currently in use. As a result, evaluating the precision and sincerity of the homoeopathic pharmaceutical products' quality criteria is crucial. This highlights the significance of guaranteeing homoeopathic medication and product quality control and assurance, as it will ultimately affect the intended and successful healing process.

This study serves as a foundation for further research and emphasizes the importance of Pharmacognostic evaluation in ensuring the efficacy and safety of herbal drugs derived from *O. sanctum*. It can be concluded that standardisation is necessary for authentication of the drugs.

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