

The Study on Morphology of *Chlorophytum borivilianum* in Akot Taluka of Akola District in Amravati Division

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Abstract: *Chlorophytum borivilianum* (Liliaceae) commonly as Safed musli belongs to the genus *chlorophytum* Ker Gawl. Is one of the potent sources of aphrodisiac medicine in Ayurvedic and Allopathic systems. Morphological studies showed improvements in plant height, flower, fruit, and seed parameter notably the shape and size of roots. In Maharashtra State *Chlorophytum borivilianum* is commonly available in the Forest areas at the altitude of 1200 metres above M.S.L., In the Western Ghat areas as well as in the Melghat areas. The Survey was conducted in Bordi village in Akot Tahsil of Akola. Since *Chlorophytum borivilianum* is normally available in Maharashtra the cultivation techniques, sowing, harvesting, storing and marketing techniques are perfected by the Forest Department as well as some of the N.G.O.s like Mittal Musli Farm in Jalgaon Jamod in the Buldhana district which are discussed elaborately in this paper. Plant morphology needs to be determined to identify the morphological markers that only facilitate large scale screening of germplasm lines, but also helpful in identifying the particular genotype.

Keywords: Morphology, Genotype, Character, Medicinal uses, Akot Tahsil

1. Introduction

The survey of Safed musli is originally found in forest areas in natural form. Its botanical name is *chlorophytum borivilianum*. The species is found in abundance in natural forest areas. The plant is distributed in the subtropical Himalayas from Kumaon eastwards, the Khasia hills, Bengal, Assam, Kokan, Kanara, West peninsula and Madras extending to Kanyakumari. This plant was observed growing in patches in pine in Rani khet and adjoining areas.

It belongs to family Liliaceae. It is a herb with sub erect lanceolate leaves. The flowering period in the month of August and early September. The flowers are white in color. The leaves are dried in the month of Dec./Jan. and it remains dormant during rest of the year early winter till break of monsoon. Safed Musli is a rare herb and hence its preservation and conservation carries lot of Importance. As per the provisions embodied in the Indian Forest Act 1927 Safed Musli and its derived products come under the purview of definition of forest produce.



Plate 1: Map showing Akot Taluka in Akola District (MH)

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Chlorophytum borivilianum



Roots of *Chlorophytum borivilianum*
Plate 2

In the present study observations were made on Safed Musli (*Chlorophytum borivilianum*) with the aim of to morphologically characterize and to assess the variability among different accessions.

Geographical Disribution

Chlorophytum borivilianum (Safed Musli), originally native to subtropical and tropical regions of Africa, was introduced

to India from South Africa, in 1954. *Chlorophytum borivilianum* thrives in various habitats and landscapes, primarily cultivated in forested areas across the globe. It is commonly found at elevations of up to 1500 meters and is distributed in tropical Africa, Australia, and the Americas. The plant's main geographical regions include Western Madhya Pradesh, North Gujarat (specifically the Dang forests), Southern Rajasthan, and the subtropical Himalayas from Chennai, Kumaon, Bengal, Khasia hills, Kokan, Assam, Kanara, the West Peninsula to Kanyakumari (Manjunatha et al.2004). It can also be located in the Himalayan valleys, Satpuda, Aravalli, Vindhya, Haryana, Kolhapur, Pune, and Raigad in Maharashtra. Optimal growth conditions for this plant involve sandy loamy soil, and cultivation typically takes place between April and May (Verma et al. 2020; Acharya et al. 2008 a, b; Grover 2021).

Study Area

The study was conducted in the Akot Tehsil region of Amravati division in Maharashtra, known for its deciduous forest ecosystems. The area is characterized by a wide variety of plant species, adapted to the local conditions, which include a dry season followed by a monsoon period. The forests are predominantly deciduous, shedding leaves during the dry season to conserve water.

Taxonomic characteristics

Kingdom: Plantae Clade: Tracheophytes Clade: Angiosperms Clade: Monocots Order: Asparagales Family: Asparagaceae Subfamily: Agavoidae Genus: *Chlorophytum* Species: *borivilianum*

Morphology

Chlorophytum borivilianum (Safed Musli) is a small perennial herb characterized by a crown of radical leaves, fleshy fasciated tuberous roots, and small white flowers.





Plate 3: Cultivated *Chlorophytum borivillianum* (Safed musli)



Leaves: Plants typically possess 6 to 13 sessile leaves that overlap in a spiral (imbricate) configuration. They are linear to ovate with an acute apex. Studies highlight that the upper leaf surface is devoid of stomata likely an adaptation to arid climates



Inflorescence: The plant produces small white, pedicilate, and bracteate flowers. They usually grow in clusters of three on an erect flowering stalk.



Flowers: Flowers are small, white, bracteate, pedicillate, usually arranged in alternate clusters of each flowers



Roots: Roots are fleshy, fascicled and directly originate from the disc stem. They are cylindrical, 5-20 in number, 10-25 cm, 1-2 cm in dimension

2. Conclusion

The present investigation study on *Chlorophytum borivillianum* is a very important plant for its large number of phytochemical and pharmacological properties as well as medicinally important chemicals. used in ayurveda as well as in Allopathy for curing various diseases. In view of this, also nutritional values are investigated. The rising expenses of healthcare and the frequent negative side effects of allopathic pharmaceuticals have fueled the movement towards a greater understanding of the link between nutrition and health. *Chlorophytum borivillianum* root powder might help with cancer, aging, hypercholesterolemia, hyperlipidemia, diabetes and stress.

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