ETHNOGRAPHY OF THE DRUG SAFED – MUSALI IN INDIA : A REVIEW

D.A. PATIL
Post-Graduate Department of Botany,
S.S.V.P.S’s L. Dr. P.R. Ghogrey Science College, Dhule -424 005, India.

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ABSTRACT: The drug safed-musali’ has always remained the subject of dispute and object of investigations. This paper evaluates comparatively its ethnomedicinal records as also those found in literature on the modern usage in Indian context along with the observations of the present author. The safedmusali belongs to the various species of two different well known liliaceous genera viz., Asparagus L. and Chlorophytum Ker-Gowl., and a least known orchidaceous genus Pachystoma Bl.

It appears that the wide modern usage of safed-musali might have sprung from its ethnomedicinal leads in our country. The plant sources of its procurement although varied should be regarded only as surrogates for each other. The drug itself is a substitute for ‘Salep’ or ‘Salep-misri’. In the light of present investigation, it is surveyed, reviewed and highlighted pertinent. The attempts to cultivate different species which are implicated as safed-musali need a fillip for the betterment of tribal people and Indian societies at large.

Keywords: Safed-musali, Ethnomedicine, Modern Medicine, Asparagus, Chlorophytum, Pachystoma.

INTRODUCTION

A group of social workers of tribal Thakars from pune district, maharashtra, met me in July 1998, with a query about ‘true safed-musali’.

They also showed few live plant specimens collected from Western Ghats. On scrutiny, they turned out to be (i) Chlorophytum tuberosum (Roxb.) Baker, (ii) C. borivilianum Sant. & Fernand and, (iii) C. bhararuchae Ansari, Raghavan & Hemadri.

My probe into the literature revealed that species of two different liliaceous genera viz., Asparagus L. and Chlorophytum Ker-Gawl. Are mostly implicated as ‘safed-musali’. It is similarly equated in Ayurvedic literature (cf. Sivarajan and Balachandran, 1994). The drug although widely documented, still baffles recognition in the minds of users. The literature resume also indicated that safed-musali is a substitute for Salep. The salep itself is also procured from species of different genera belonging to different families. This puzzled me further. I, therefore, thought worthwhile to bring this problem of ‘true safed-musali’ in a clearer focus, which will, in turn, clarify the article of the said drug of commerce as well as of folk uses in our country throughout.

PLAN OF WORK
The present investigation is aimed at finding out the current overall position of the drug viz; ‘Safed-musali’ in Indian context. It has been documented in literature but with some disputes. The present author, therefore, undertook an intensive survey of literature and field works mainly on medicinal and ethnomedicinal lines. The concise, comparative and only explicit information on it, to date has been presented in the tabular form.

**DISCUSSION**

Considerable difference of opinion prevailed regarding the identity of ‘safed-musali’ in the past and still remains in utter confusion is recent times. A delve into the literature on both folk and modern usage in different regions of India along with the observations of present author in Dhule and Nandurbar districts (the erstwhile Dhule district) of maharashtra throes more light on complexity of the problem.

The utility of safed-musali as a tonic, demulcent, galactogogue, aphrodisiac, in treating general debility, weakness, dysuria, diarrhea and dysentery etc. is widely documented as a modern medicine. At the same time, it is deeply rooted as ethno medicine as such alongwith other folk miscellaneous uses. It is worth of note that it is not procured from a single plant source. The different species of two liliaceous genera viz., Asparagus and chlorophytyum form the major sources. According to classic literature, it belongs to asparagus adscendens Roxb. (cf. Anonymous 1950; Watt 1889; Moos 1978; Kirtikar & Kattrak 1984; Duruy 1893; Dymock 1890; Dey 1973; Nadkarni 1976; Chunekar, 1982; Maheshwari & Umarao Singh 1965; Desai 1975). In Indian context, it is substituted by other species of the genus under the same or different local names viz, A. filicinus Ham. (Kirtikar & Kattrak. 1984; Dymock 1890; Drury (1873) and A. racemosus Willd. (Ansari 1991; Peter 1996; Aswal 1996; Satapathy & Girach 1991, 1996; Rana et al 1996; sensarma 1991; Saini 1996; Satapathy & Brahman 1996; Gurach 1992; Ambasta 1986; Hajra & Baish 1981; Nayar et al 1989; Rana et al 1996; Kiritikar & Basu 1981; Dymock et al 1890; Khory & Kattrak 1984; Patil 2000). It is interesting to note that it also finds place in folk medicinal uses (cf. Shah & Joshi 1971, Sen & Batra 1997, Sinha 1996). Aswal (1996) noted it under different local name. It also belongs to Chlorophytum arundinaceum Kaker as per classic literature (cf. anonymous 1950; Nadkarni 1976; Chunekar 19982; Bhattcharjee 1998; Kirtikar & Basy 1935; Desai 1975; Ambasta 1986). It is on record as and ethnomedicine as well in our country for similar used but referred by different local names (cf. Sabena et al 1981; Patter 1996; Jain 1963, 1991; Hajra & Banish 1981; Ambasta 1986; Roy & Chattered 1986). A less known source of safed musali is Pachystoma senie Reichb.f. belonging to Orchidaceous (Anonymous 1878-1976). Under the name of safed-musali for similar medicinal uses the tribal people employ the root tubers of C. borivilianum in Dhule and Nandurbar districts of maharashtra (Patil 2000) and C. tuberosum (Patil 2000; Jain 1991; Singh & Pandey 1998). It appears that whatsoever be the true article of safed-musali, initially, in past they formed bulk of folk uses practiced throughout and this lore has been formulated, documented and eventually passed into the modern or ayurvedic system of medicine. Similar view has been also expressed by Rajasekaran et al 1996).

What (1889), Drury (1873) and Dey (1973) stated emphatically that Asparagus adscendens Roxb. Is the true article of safed-musli to which only this name is applicable.
Although so, the various substitutes current in Indian markets appear to have created chaos about its identity and doubted their efficacy. This is further escalated by the folk utility of the drug in rural and tribal societies. It is also to be noted that the so-called true article itself is a substitute for “Salep” or Salep-misri”. The salep is also not procurable from a sole source. The salep is also not procurable from a sole source. The species of genus Orchis (Orchidaceae) are the sources of Linn., O. mititarsis Linn., O. Laxiflora Lam., O. maculate Linn., O. mascula Linn., O. mititais Linn., O. Morio linn., O. Pyramidalis Linn., O. Sambucina linn., O simian Lam. Other taxa such as Habenaria commelinifolia Wall. ex Lindl., Cymbidium aloifolium Swartz. Eulophia nuda lindl. And few other species also furnish salep. Besides, Slium macleanii Baker is a substitute, usually called ‘Royal Salep’ or ‘Nadshah Salab’. In the past, trans-frontier trade also exited in salep from Afghanistan, Persia, Baluchistan and Bolhara into India. The earliest reference to salep in connection with India is found in the voyages of Ibn Batuda, of date 1340, where amongst the provisions given to the travelers by the Sultan of Delhi, it is mentioned (cf. Watt, 1966).

The different wildly occurring species of asparagus, chlorophytum and Pachystoma so far documented can be regarded as ‘Safed-musli’ vis-à-vis alternative for each other. The best available species in different pockets throughout India, rather than choice, has become the factor for their use as such. Obviously, a difference will lie in their efficacy depending upon their percentage active principle and the therapeutics employed. Etymologically, safed-musli means safed-white and musli/musali-pestle; the characteristic white colour and pestle-shaped root tubers are denoted in the name. The root tubers usually find a place in modern and folk utility of the said drug.

However, leaves and stems are sometimes used (Shah & Joshi 1971: Sen & Batra 1997).

It is evident from the Tables I & II that the various species of the two general have been significant medicinally for human beings, as a vegetable (Anonymous 1950; Ambasta 1986; Shah & Joshi 1971; Vartak 1981; Bedi 1978), as ethnoveterinary medicine (Ansari 1991; Peter 1996; Sensarma 1991; Aminuddin & Girach 1991, Patil, 2000. Personal observation), in rituals and ethnobeliefs (Aminuddin & Girach 1991; Peter 1996).

To my astonishment, in recent visits in Dhule and Nandurbar district forest, Maharashtra, I noted the tribals cultivating chlorophytum borivilianum in spare land around their abodes. However, they simply take out the seedlings in early monsoon from the natural habitats and put in soil in their custody and supervision. This incipient practice of cultivation is indicative of a fact that they now have become aware of its importance. As elsewhere, the forces of anthropogenic disturbances are operating at an alarming rate in this region. The attempts to cultivate it by the aborigines will certainly help redeem the situation. The team of social workers from Pune district, Maharashtra, mentioned earlier are also attempting on the similar lines. The results are said to be promising. This may improvise their economic condition in future. Other species of this genus are also worth growing. Only they should be guided duly. The state Governments, NGOs, and other agencies should motivate the rural/tribunals to cultivate these in the encroached forest treas and spare lands around the abodes. The immense
potentiality of the different species should be tapped for the cause of sustainable development. The high prices, even much higher than the almond and chilgosa, will be certainly fruitful to develop the rural economy in an ecofriendly way. Truly, then the articles of ‘safed-musali’ may pave the way to their better prosperity.

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TABLE –I: Asparagus L. (Liliaceae)

| Botanical Name | Literature Source | Local Name | Occurrence of Plant/Area of Study | Part/s used | Medicinal/Ethnomedicinal or other uses | Remarks, if any |
|----------------|-------------------|------------|-----------------------------------|-------------|----------------------------------------|-----------------|
| (1) Asparagus adscendens Roxb | Anonymous (1950) | Safed-Musli | Afghanistan, India-Punjab and the Himalayas upto 5300 ft. | i) Root tubers ii) Leaves | Posses cooling and demulcent properties. Sometimes as a vegetable | Uses are similar to root tubers of Orchis mascula Lin |
| | Watt (1889) | Safed-Musli (Hindi), Sapheta Musli (Bombay Presidency), Safeda Musali (Marathi) Saphed-Musali (Gujarat) | Rohilkhand and other parts of India. | Root tubers | As a demulcent and tonic; also useful in diarrhea, dysentery, and general debility. | A substitute for Salep, nicer than it, has an agreeable mucilaginous taste, contains no starch. In south India, safed musli is the torn and dried roots of A. sarmentousus. |
| | Kirtikar & Basu (1935) | Sapheta Musli (Bombay Presidency), Saphed-Musali (Gujarat) | Afghanistan, India-Western Himalayas & Punjab to Kumaon up to 5300 ft. | Root tubers | As a demulcent and tonic; also useful in diarrhea, dysentery, and general debility. | - |
| | Nayar et al (1989) | Shakakul | Himalayas | - | Used as a substitute for salad. | - |
| | Drury (1893) | Sufed - mush | -- | Root tubers | -- | Substitute to the salep and better than it. |
| | Dey (1973) | Safed-Musli (Hindi), | Northern India | Root tubers | As a demulcent | Substitute for ‘Salep-misri’ |
| Author(s) (Year) | Location | Plant Parts | Uses | Other Uses |
|-----------------|----------|-------------|------|------------|
| Nadkarni (1976) | Western Himalayas, Punjab, Murree to Kumaon, Gujarat, Bombay Presidency, Rohil Khand, Oudh and central India. | Root tubers or rhizome decorticated | As a tonic, nutritive, galactagogue and demulcent; also in gleet, spermatorrhoea chronic leukorrhoea, diarrhea, dysentery & general debility. | A substitute for ‘Salep’ Asparagus racemosus Willd. Is sometimes substituted for *A. asperrundens* as ‘safed-musli’ |
| Aswal (1996) | Jhangani, Jhirna, Garhwal Himalaya | Root bark, whole plant | As a tonic, aphrodisiac and in dysuria | Whole plants used for dysuria. |
| Ambasta (1986) | Satvar (Marathi) Ujili musli (Gujarat) | (i) Root Tubers (ii) Plant | (i) as a coolant, demulcent & diaphoretic. As a vegetable | Other uses are similar to salep misri Orchis mascula Linn. |
| Maheshwari & Umrao Singh (1965) | Maharashatra and Madhya Pradesh | Root (Root tubers) | As a demulcent, and in diarrhea and dysentery | -- |
| Desai (1975) | Gujarath, Rohilkhand, and central India | Root Tubers | As a tonic | Tastier than the salep ie. *Orchis latifolia* Linn. |
| Shah and Joshi (1971) | Kumaon region of India | (i) Root Bark (ii) Leaves and stems (iii) Stems | As a tonic and galactagogue. In dysentery and as aphrodisiac respectively. As a vegetable | -- |
| Sen and Batra (1997) | Phagi Tehsil, Jaipur district, Rajasthan. | Leaves | For obesity | -- |
| Sinha (1890) | Rajasthan | Root Tubers | For urinary disorder like retention of urine and difficult in passing | Few other drugs were mentioned along with it |
| Authors                         | Species             | Locations                                   | Part Used       | Uses                              | Notes                                      |
|--------------------------------|---------------------|---------------------------------------------|-----------------|-----------------------------------|--------------------------------------------|
| Dymock et al (1890)            | Suffed-musli, Dholi-musali, Ujli-musali | Rohilkhand, Gujarat, parts of Central India | Root Tubers     | Largely as an article of diet.     | Not mentioned in nighantas. It is far nicer than salep |
| Chunekar (1982)                | Musali              | --                                          | Root Tubers     | General debility tonic etc         | --                                         |
| Mooss (1978)                   | Musali              | --                                          | Root Tubers     | General debility tonic etc         | --                                         |
| (2) Asparagus filicinus Ham    | Kirtikar & Basu (1981) | Muslisafed Kashmir to Bhutan, Khasia Hills, Assam, Burma & China | Roots           | As a tonic and astringent          | --                                         |
| (3) Asparagus recemosus Wild.  | Ansari (1991)       | Satavar Pauri Garhwal, (Uttar Pradesh)       | Root Tubers     | To cure stomach ailments in cattle | --                                         |
| Peter (1996)                   | Satavari            | Chotanagpur (Bihar)                         | (i) Entire plant | To induce sleep for children       | --                                         |
|                                |                     |                                             | (ii) Roots       | To remove worms in cattle wounds   |                                            |
| Aswal (1996)                   | Jhima               | Garwhal Himalaya                           | Roots           | For stomach disorder and dysuria   | Only rots used.                           |
| Mohanty et al (1996)           | Satemuli            | Ganjam & Phulbani Districts (Orissa)        | Root Tubers     | To cure blood dysentery            | --                                         |
| Aminuddin & Girach (1996)      | Sibojata            | --                                          | Roots           | To treat hydrocele                 | --                                         |
| Rana et al (1996)              | Kaunta              | Tons Valley (W. Himalaya)                   | Roots           | For importency. Leucorrhoa & menstrual complaints | --                                         |
| Aminuddin & Girach (1991)      | Insungi             | Koraput District (Orissa)                   | (i) Roots       | (i) In post delivery complaints like abdominal pain and body-ache. | --                                         |
|                                |                     |                                             | (ii) Stem        | (ii) On wounds of cattle. Rituals in local festivals. |                                            |
| Sensarma (1991)                | Satanuli            | Garud Purana (Sanskrit Litarature) India    | Roots           | Help to remove diseases of elephants | Decoction of this alongwith some others is to be used. |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
|   |   | Saini (1996) | Satawar | Madhya Pradesh | Roots | As galactorrhoea for women |   |
|   |   | Satapathy & Brahamam (1996) | Balubalua | Sundergarh District Orissa | Tender parts of the plant | For loss of appetite and stomach disorders |   |
|   |   | Girarch (1992) | Ishwar jata Satabri | Phulbani District Orissa | Roots | (i) To check frequent nocturnal emissions.  
(ii) To cure sanity | Fresh roots alongwith black peppers is used. 
Alongwith leaves of Ziziphus and Rauvolfia seperentina. |
|   |   | Ambasta (1986) | Satawar (Hindi) Satawarmul (Marathi) and few other names | India | (i) Plant  
(ii) Fresh roots | (i) Tonic, diuretic & galactagogue  
(ii) For dyspepsia nervous and rheumatic complaints. |   |
|   |   | Hajra & Baishya (1981) | Biokkuchare | Assam | Roots | In stomach troubles |   |
|   |   | Nayar et al (1989) | Painasaperi | Throughout India | Roots | Used in medicine, nots pickled and preserved; fresh roots used for the preparation of ‘Ranu’ |   |
|   |   | Henry et al (1996) | Neeramuthi | Southern Western Ghats | Rhizome | For conception in Women | Alongwith bark of Ficus racemosus and F. hispida |
|   |   | Kirtikar & Basu (1981) | Muslisafed | Kashmir to Bhutan, Khasia Hills, Assam, Burma & China | Roots | As a tonic and astringent |   |
|   |   | Dymock et al (1890) | Satvari, Satamuli | Upper India, Koncan & Deccan | Roots | As a demulcent, galactagogue, tonic, strengthening, to remove bilious and rheumatic humors, blood diseases and swellings. | Mentioned in Nighantas as Dvipika, Dvipasatru, Varaghantika, Narayani, Sata-padi. |
| Authors               | Species          | Locations                                      | Part Used          | Uses                                                                 | Notes                                                                 |
|-----------------------|------------------|------------------------------------------------|--------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
| Khory & Katrak (1984) | Satvari, Sadabori & few other names | Throughout India, Concan, Deccan | Roots            | Tonic, nutritive demulcent, galactagogue, in rheumatism, dyspepsia, diarrhea & biliousness. | --                                                                 |
| Patil (2000)          | Sasadatali, Shatavari  | Jalgaon District, Maharashtra             | Root tubers       | As a galactagogue for manuring animals                              | --                                                                 |
| (4) Asparagus sarmentosus L. | Safed–musli   | Upper India, in Konkan and Deccan        | Roots             | As an aphrodisiac, in debility and emaciation as a cooling and nourishing medicine | Erroneously called ‘Safed-musli’ in some parts of India. |
| Drury (1873)          | Safed Mush       | Southern India                           | Roots             | Nutrient and demulcent                                              | Better than salep. For which it is a substitute.                     |
| Nayar et al (1989)    |                  | Throughout India                         | Roots             | Fleshy roots consumed as food.                                      | --                                                                 |
| Dymock et al (1890)   | Satvari, Satamuli | Upper India, Konkan & Deccan             | Roots             | As a demulcent, galactagogue, tonic strengthening, to remove bilious and rheumatic humors, blood disease and swellings | Mentioned in Nighantas as Bahuputrika, Dagdha and Bhasma-roha.        |
| Khory & Katrak (1984) | Satavari, Sadabori & few other names | Throughout India, Concan, Deccan | Roots            | Tonic, nutritive demulcent, galactagogue, in rheumatism, dyspepsia, diarrhea & biliousness. | ---                                                                 |
| Jain (1963;1991)       |                  | Madhya Pradesh                           | Tubers & Roots    | For impotency by the tribals of Madhya Pradesh                      | --                                                                 |
| Roy & Chaturvedi      |                  | Madhya Pradesh                           | Tubers & Roots    | As a tonic by the tribals of Abj Marh Reserve Area of Bastar District of Madhya Pradesh | --                                                                 |
| Sexena et al (1991)   | Surimusli        | Orissa                                    | Roots             | To treat rheumatism                                                 | --                                                                 |
|   | 2          | 3                        | 4                                      | 5                  | 6                                  | 7                                      |
|---|------------|--------------------------|----------------------------------------|--------------------|------------------------------------|----------------------------------------|
| 1 | Peter (1996) | Pirijadu                 | Chotanagpur (Bihar)                    | Entire Plant       | Mohini (i.e. Love Promoter)        | Believed that when a married couple is estranged due to some differences, this plant, macerated with mustard oil and applied to a garment, has the power to unite them. |
| 2 | Desai (1957) | Safed-Musli or Safet Musli | Gujarat, Rohikhand Central India       | Root tubers        | As a tonic                         | Tastier than the salep (i.e. Orchis latifolia Linn) |
| 3 | Ambasta (1986) | Safed musli              | India                                  | Roots              | As a tonic                         | -                                      |
| 4 | Patil (2000) | Safed musli              | Dhule and Nandurbar Districts Maharashtra | Root tubers and Leaves | Tubers as a tonic and leaves a vegetable | Not referred as an article of safed musli in other parts of Maharashtra. |
| 5 | Vartak (1981) | Kulai                    | Western Maharashtra & Goa.             | Leaves             | As a vegetable                      | --                                    |
| 6 | Vartak (1981) | Kulai                    | Western Maharashtra & Goa.             | Leaves             | As a vegetable                      | --                                    |
| 7 | Vartak (1981) | Kulai                    | Western Maharashtra & Goa.             | Leaves             | As a vegetable                      | --                                    |
| 8 | Patil (2000) | Safed musli              | Dhule and Nandurbar Districts Maharashtra | Tubers              | As a tonic                         | Actually, the tubers of this taxon are mistaken for safed-musali. |
|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Jain (1991) Roy & Chaturvedi (1987, 1986); Saxena & Vyas (1983); Bedi (1978) | Safed musli, Janjari | Madhya Pradesh, Uttar Pradesh, Gujarat | (i) Tubers (ii) Leaves | In leucorrhoea and as a sex tonic, expectorant and also in fever As a vegetable | -- |   |
| Ambasta (1986) | - | India | Roots | Edible | -- |   |
| Nayar et al (1991) | Kulari | Central and peninasalr, India | (i) Leaves (ii) Roots | (i) Used as vegetable (ii) Edible | -- |   |
| Singh & Pandey (1998) | Safed musali | On hills at Jalore, Jhalawar and Mt. Abu (Rajasthan) | Root | Root powder with milk to cure bone fracture. | -- |   |

**TABLE – II : Pachystom BI. (Orchidaceae)**

| Botanical Name | Literature Source | Local Name | Occurrence of Plant/Area of Study | Part/s used | Medicinal/Ethnomedicinal or other uses | Remarks, if any |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| (1) Pachystoma senile Reichb.f. | Anonymous (1948-76) | Safed musli, Kurkutti | Plains of north India, low hills of north and south India. | Rhizomes | Reported to be collected and sold for medicinal purposes | The exact use or properties not known. |