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Medicinal flora of melghat for asthma: A review

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Abstract

The present study documented the traditional knowledge of medicinal plants from Melghat region used for asthma. A systematic literature survey from various sources enlists Melghat region's 128 plants (Climbers (8), Grasses (4), Herbs (51), Orchids (3), Shrubs (31) and Trees (31) belongs to 110 genera from 51 plant families) and it provides traditional knowledge about use of plants and their parts for the treatment of asthma across the globe. Botanical name, families, common name, part used with relevant ethnobotanical citations were documented. This review attempts to explore Melghat medicinal plants used for treatment of asthma and thus offers scope for researchers engaged in herbal drug discovery and development.

Keywords: melghat, asthma, atropine, boswellic acids, ephedrine, noradrenaline etc.

Introduction

Amravati district's north-western compact block of forest nearly 3,075 square kilometers is known as "Melghat" in Maharashtra, India. Melghat is famous for its "Tiger Reserve Project" and have a unique ecological niche. The Melghat region is entirely different from the rest of the districts from climatology, agronomical and floristic point of view. The "Flora of Melghat Tiger Reserve" reported total 650 plant (90 Trees, 66 Shrub, 316 Herb, 56 Climbers, 23 Sedge and 99 Grasses) naturalized species [1]. Among them 200 species was found to have medicinal value [1]. Many forest officers, botanists, taxonomist and researchers explored Melghat region many times and contributed for flora of Melghat. Recently "Checklist of Flora of Melghat: 2018-19" enlists 117 families, 547 genera and 1008 species [2], more than 550 species were reported for ethnobotanical and pharmacological values.

Asthma is a chronic inflammatory disease characterized by reversible airway obstruction, airway hyper responsiveness (AHR), infiltration of inflammatory cells, mucus hypersecretion, and airway remodeling [3]. Among several respiratory diseases affecting man, bronchial asthma is the most common disabling syndrome nearly 7 to 10 percent of the world population suffers from bronchial asthma [4]. Although mortality rates for asthma are relatively low, representing only 1% of all deaths, it is recognized that in many cases that death could have been avoided with better routine care; COPD, however, is the 4th leading cause of death and is projected to rise to the second most common cause of death worldwide by 2020 [5].

A review of phytomedicine in the treatment of Asthma

Phytomedicine is defined as a plant-based traditional medical practice that uses various plant materials in modalities considered both preventive and therapeutic [5]. Asthma was recognized in ancient Egypt and was treated by drinking an incense mixture known as kyphi [6]. *Solanum xanthocarpum* and *Solanum trilobatum* (Family: Solanaceae) as a powder of the whole dried plant or decoction are widely used to treat respiratory disorders by practitioners of the Sidda system of medicine in Southern India [7]. The gum resin of *Boswellia serrata* Roxb (Family: Burseraceae) is known in the Indian Ayurvedic system of medicine as Salai guggal and contains boswellic acids which have been shown to inhibit leukotriene biosynthesis [7].

Atropine, a naturally occurring alkaloid extracted from *Atropa belladonna*, acts on the parasympathetic nervous system and has an anti-muscarinic effect which inhibits the contraction of smooth muscle tissue and reduces mucus secretion [5]. Atropine is found in many members of Solanaceae family (like *Atropa belladonna*, *Datura metel*, *Datura innoxia* and *Datura stramonium*). Other sources include members of the *Brugmansia* and *Hyoscyamus* genera. Ephedrine was developed from traditional Chinese remedy "ma huang" and tea leaves are the herbal origin of theophylline, caffeine related to theophylline has been used to centuries to treat asthma [7]. Ephedrine also reported from *Sida rhombifolia* Linn (Family: Malvaceae) [8]. Acetylcholine, histamine, noradrenaline and barium chloride in four different smooth muscles, prevent antigen-induced release of histamine from mast cells, basophils and also inhibit

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contractions induced by histamine, acetylcholine and prostaglandin E2 (PGE2) - have been reported to have anti-asthmatic activity^[9]. At present, novel and expensive biologic therapies are being developed to address this unmet need. Alternative approaches to address the issue of adverse effects and reduced efficacy include the use of phytomedicines. However progress in this area is hampered by a lack of

compelling evidence. Therefore there is a need for properly conducted scientific research into the effects of safe, plant-based medicines in asthma. The present study is an assessment of the ethnobotanical usage of various Melghat medicinal plants reported in the scientific publications (books, research papers, short notes) for the treatment of asthma.

Table 1: Melghat medicinal plants used for Asthma / Anti-asthmatic activity (Page 4-8)

Plant Name	Plant Family	Common Name	Plant part used	Reference(s)
<i>Abrus precatorius</i> L.	Fabaceae	Ratti, Gunjaa	Bark	1, 4, 8, 9, 11, 12, 13,
<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Indian Mallow, Kanghi	Anti-asthmatic activity	1, 4, 8, 12, 13, 14,
<i>Acacia pennata</i> (L.) Willd.	Fabaceae	Climbing wattle, Agla bel	Bark	1, 4, 8, 11, 12, 13,
<i>Acalypha indica</i> L.	Euphorbiaceae	Indian Nettle	Leaves, Whole plant	1, 4, 8, 9, 12, 13, 14, 15,
<i>Achyranthes aspera</i> L.	Amaranthaceae	Aghada, Chaff-flower	Fruit	1, 8, 12, 13, 14, 16, 18,
<i>Aegle marmelos</i> L.	Rutaceae	Bel, Stone apple	Whole plant	1, 4, 8, 9, 12, 13,
<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	Chaya, Pashanabheda	Aerial parts	1, 9, 14,
<i>Ageratum conyzoides</i> L.	Asteraceae	Goat weed, Jangli pudina	Leaves	1, 9, 11, 14,
<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Mahanimb, Maharukh	Root, Bark	1, 14, 15,
<i>Albizia lebeck</i> (L.) Benth.	Fabaceae	Bhingri, bhandir	Bark	1, 4, 8, 12, 13, 14,
<i>Albizia odoratissima</i> (L. f.) Benth.	Fabaceae	Black Siris, Kala siris	Leaves	1, 4, 12, 13,
<i>Amaranthus spinosus</i> L.	Amaranthaceae	Prickly Amaranth, Chengkruk	Roots	1, 9,
<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Araceae	Elephant Foot Yam, Jangli suran	Tuberous root	2, 4, 8, 12, 13,
<i>Apium graveolens</i> Linn	Apiaceae	Celery, Ajmod	Leaves, Seeds	2, 12, 15,
<i>Argemone mexicana</i> L.	Papaveraceae	Mexican poppy, Satyanashi	Seeds	1, 11, 14,
<i>Artemisia vulgaris</i> L.	Asteraceae	Indian Wormwood, Nagdona	Flowers, Leaves	1, 4, 8, 12, 13, 15,
<i>Bacopa monnieri</i> (L.) Pennell.	Scrophulariaceae	Brahmi, Herb of grace	Whole plant	1, 4, 8, 9, 12, 13, 14, 15, 16,
<i>Baliospermum montanum</i> (Willd.) Müll.Arg.	Euphorbiaceae	Wild croton, Danti	Leaves	1, 4, 8, 12, 13, 15,
<i>Bauhinia racemosa</i> Lam.	Fabaceae	Bidi Leaf Tree, Katmauli	Leaves	1, 4, 8, 12, 13,
<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Spreading hogweed, Raktapunarnava	Root	1, 11, 15,
<i>Bombax ceiba</i> L.	Malvaceae	Silk Cotton Tree, Shalmali, Semal	Bark	1, 4, 8, 12, 13,
<i>Boswellia serrata</i> Roxb.	Burseraceae	Salai, Ashwamutri	Inflanil oil	1, 7, 8,
<i>Buchanania cochinchinensis</i> (Lour.) Almeida	Anacardiaceae	Charoli, Chironji	Fruits	1, 4, 8, 12, 13,
<i>Caesalpinia decapetala</i> (Roth) Alston	Fabaceae	Mauritius thorn, Ralan	Roots	1, 9, 15,
<i>Calotropis gigantea</i> (L.) W.T. Aiton	Asclepiadaceae	Crown Flower, Safed aak	Latex	1, 4, 8, 12, 13, 18,
<i>Calotropis procera</i> (Aiton) W.T. Aiton	Asclepiadaceae	Rui, Aak, Mudar	Bark and leaves	1, 4, 8, 9, 11, 12, 13, 14,
<i>Canavalia gladiata</i> Sensu Robyns.	Fabaceae	Sword bean, Makkhan sem	Seeds, Leaves	1, 4, 8, 11, 12, 13,
<i>Cassia absus</i> L.	Fabaceae	Chaksu, Chaksi	Leaves	1, 4, 8, 11, 12, 13, 14,
<i>Cassia fistula</i> L.	Fabaceae	Indian Laburnum, Amaltas	Fruits	1, 16,
<i>Cassia occidentalis</i> L.	Fabaceae	Coffee weed, Kasunda	Leaves, roots	1, 15,
<i>Cassia tora</i> L.	Fabaceae	Sickle senna, Tarota	Leaves	1, 14, 15,
<i>Centratherum anthelminticum</i> (L.) O. Ketz.	Asteraceae	Black cumin, Kalijiri	Anti-asthmatic activity	1, 4, 8, 12, 13,
<i>Chlorophytum arundinaceum</i> Baker	Liliaceae	Musli safed, India spider plant	Tubers	2, 4, 8, 12, 13,
<i>Chlorophytum laxum</i> R. Br.	Asparagaceae	Siam Lily, Bichetii Grass	Tubers	2, 14,
<i>Chloroxylon swietenia</i> (Roxb.) DC.	Rutaceae	Ceylon Satinwood, Bhirra	Bark	1, 4, 8, 12, 13,
<i>Cleome gynandra</i> L.	Capparaceae	Ajagandha, Hulhul	Whole plant	1, 4, 8, 12, 13,
<i>Clerodendrum serratum</i> (L.) Moon	Verbenaceae	Blue Fountain Bush, Bharangi	Anti-asthmatic activity	1, 9, 14,
<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Jangli Tondli, Gentleman's toes	Fruits	2, 4, 8, 12, 13, 14,
<i>Commelina benghalensis</i> L.	Commelinaceae	Tropical spiderwort, Kana, Kankawa	Whole plant	1, 11,
<i>Convolvulus arvensis</i> L.	Convolvulaceae	Chand Vel, Bhoomi Chakra Poindu	Leaves	1, 4, 8, 12, 13,
<i>Corallocarpus epigaueus</i> (Rottl.) C.B. Clark	Cucurbitaceae	Redfruit Creeper, Akas-gaddah	Tubers	2, 4, 8, 12, 13,
<i>Curculigo orchioides</i> Gaertn.	Liliaceae	Golden eye-grass, Kali Musali	Rhizomes	1, 4, 8, 9, 12, 13, 14, 15,
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Bermuda Grass, Haryali	Whole plant	1, 14,
<i>Datura metel</i> L.	Solanaceae	Devils weed, Datura	Leaves and seed	1, 4, 5, 8, 9, 12, 13, 14, 15, 18,
<i>Dendrophthoe falcata</i> (L.f.) Ettingsh.	Loranthaceae	Honey Suckle Mistletoe, Banda	Whole plant, Stem bark	1, 4, 8, 12, 13, 14, 15,
<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	Sal Leaved Desmodium, Dhruva	Roots	1, 11, 14, 15,
<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	Creeping Tick Trefoil, Kudaliya	Roots	1, 4, 8, 12, 13,

<i>Drimia indica</i> (Roxb.) Jessop	Asparagaceae	Indian Squill, Jangli piaz	Squill bulbs	2, 11,
<i>Drosera indica</i> L.	Droseraceae	Indian Sundew, Davbindu	Whole plant	1, 4, 8, 11, 12, 13,
<i>Eclipta prostrata</i> (L.) L. - false daisy	Asteraceae	Bhringaraj, False Daisy	Leaves	1, 4, 12, 13, 14, 16,
<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Indian gooseberry, Amla, Aonla	Seeds	1, 14, 15, 18
<i>Enicostema hyssopifolium</i> (Willd.) Verdoorn	Gentianaceae	Indian Whitehead, katvinayi	Whole plant	1, 10,
<i>Erythrina suberosa</i> Roxb.	Fabaceae	Corky Coral, Dhaul dhak	Bark, Anti-asthmatic activity	1, 15,
<i>Eugenia jambolana</i> Lam.	Myrtaceae	Jamun, Rose Apple	Fruits	1, 4, 8, 12, 13,
<i>Euphorbia hirta</i> L.	Euphorbiaceae	Dudhi, Cats hair	Whole plant	1, 4, 8, 9, 11, 12, 13, 14, 15,
<i>Euphorbia nerifolia</i> L.	Euphorbiaceae	Indian Spurge Tree, Manasasi	Leaves, Latex	1, 4, 8, 12, 13,
<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	Shankhpushpi, Dwarf Morning Glory	Leaves	1, 4, 8, 12, 13, 15,
<i>Ficus benghalensis</i> L.	Moraceae	Banyan Tree, Barh	Leaves, Anti-asthmatic activity	1, 9, 14,
<i>Ficus exasperata</i> Vahl.	Moraceae	Brahma's Banyan, Karapatra	Roots	2, 4, 8, 12, 13, 14,
<i>Ficus racemosa</i> L.	Moraceae	Cluster fig, Goolar	Bark, Anti-asthmatic activity	1, 14,
<i>Flacourtia indica</i> (Burm. f.) Merr.	Flacourtiaceae	Governor's Plum, Bilangada	Leaves	1, 4, 8, 9, 12, 13,
<i>Garuga pinnata</i> Roxb.	Bursaceae	Grey downy balsam, Kharpat	Leaves	1, 4, 8, 12, 13, 15,
<i>Glinus oppositifolius</i> (L.) Aug. DC.	Molluginaceae	Bitter cumin, Jharasi	Leaves, Whole plant	1, 12,
<i>Habenaria plantaginea</i> Lindl.	Orchidaceae	Kadali habe-amri, Plantain Orchid	Tubers	1, 4, 8, 12, 13,
<i>Hemidesmus indicus</i> (L.) R. Br.	Apocynaceae	Indian Sarsaparilla, Anantamul	Roots	1, 14, 15,
<i>Holarrhena antidysenterica</i> (L.) Wall. ex A. DC.	Apocynaceae	Indrajao, Karva indrajau	Seeds	1, 4, 8, 12, 13,
<i>Hygrophila auriculata</i> (Schumach.) Heine	Acanthaceae	Marsh Barbel, Trikat	Leaves	1, 11,
<i>Indigofera tinctoria</i> L.	Fabaceae	True Indigo, Neel	Leaves	1, 4, 8, 12, 13,
<i>Justicia procumbens</i> L.	Acanthaceae	Water Willow, Karambal	Whole plant	1, 4, 8, 12, 13, 15,
<i>Lanea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Indian Ash Tree, Mohin	Plant gum	1, 14,
<i>Lantana camara</i> L.	Verbenaceae	Kunku, Raimuniya	Roots	1, 4, 8, 12, 13, 18
<i>Leptadenia reticulata</i> (Retz.) Wight	Apocynaceae	Cork Swallow-wort, Jhumka	Whole plant	1, 4, 8, 12, 13,
<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Common leucas, Gophaa	Anti-asthmatic activity	1, 14, 18,
<i>Luffa acutangula</i> (L.) Roxb.	Cucurbitaceae	Chinese okra, Jungle turai	Whole plant	1, 15,
<i>Macrotyloma uniflorum</i> (Lam.) Verdc.	Fabaceae	Kurti Kalai, Dail sumi,	Seeds	2, 4, 8, 12, 13,
<i>Mangifera indica</i> L.	Anacardiaceae	Mango, Aam	Leaves, Seed, Root	1, 4, 8, 10, 11, 12, 13, 14, 15,
<i>Momordica dioica</i> Roxb. ex Willd.	Cucurbitaceae	Teasle gourd, Ban karela	Fruits, Leaves	1, 9, 14,
<i>Mucuna pruriens</i> (L.) DC.	Fabaceae	Velvet bean, Kiwach	Whole plant	1, 9, 14,
<i>Mukia maderaspatana</i> (L.) M. Roem.	Cucurbitaceae	Bristly bryony, Bilari	Anti-asthmatic activity	2, 4, 8, 12, 13,
<i>Nepeta hindostana</i> (Roth) Haines	Lamiaceae	North Indian Catmint, Boya	Anti-asthmatic activity	1, 4, 8, 12, 13,
<i>Nervilia aragoana</i> Comm. ex Gaudich.	Orchidaceae	Aragoa-like Nervilia, Sthalapadma,	Leaves	2, 17,
<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Coral jasmine, Parijat	Leaves	1, 14,
<i>Orthosiphon rubicundus</i> (D.Don) Benth.	Lamiaceae	Red java tea	Leaves	1, 14,
<i>Oxalis corniculata</i> L.	Oxalidaceae	Indian sorrel, Seh-patti	Whole plant	1, 14,
<i>Passiflora foetida</i> L. - fetid passionflower	Passifloraceae	Love-in-a-mist, Jhumka lata	Leaves	2, 4, 8, 12, 13, 15,
<i>Pergularia daemia</i> (Forssk.) Chiov.	Asclepiadaceae	Utaran Vel, Utaran,	Leaves	2, 4, 8, 12, 13, 15,
<i>Phyllanthus amarus</i> Schum & Thonn.	Euphorbiaceae	Black catnip, Jaramla	Aerial parts	2, 11,
<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Chitrak	Root	2, 10,
<i>Pogostemon benghalensis</i> (Burm.f.) Kuntze	Lamiaceae	Bengal pogostemon, Pangli	Leaves	1, 3,
<i>Polygala arvensis</i> Willd.	Polygalaceae	Field Milkwort, Sanjivani,	Leaves	1, 4, 8, 12, 13,
<i>Polygala elongata</i> Klein ex Willd.	Polygalaceae	Narrow-Leaved Milkwort, Perianankai	Roots	1, 14,
<i>Portulaca quadrifida</i> L.	Portulacaceae	Chival, Chicken weed	Whole plant	1, 14,
<i>Pseudarthria viscida</i> (L.) Wight & Arn.	Fabaceae	Viscid pseudarthria, Salaparni	Roots	1, 4, 8, 12, 13,
<i>Psoralea corylifolia</i> L.	Fabaceae	Bawchi, Psoralea seed	Seeds	1, 3,
<i>Rhynchosia minima</i> (L.) DC.	Fabaceae	Turel	Seeds	1, 4, 8, 12, 13,
<i>Rhynchosyris retusa</i> (L.) Blume.	Orchidaceae	Foxtail Orchid, Draupadi mala	Whole plant	2, 4, 8, 12, 13, 17,
<i>Rivea hypocrateriformis</i> (Destr.) Choisy	Convolvulaceae	Common Night Glory, Phang, Sanjvel	Whole plant	1, 14,
<i>Rorippa indica</i> (L.) Hiern.	Brassicaceae	Yellow cress, Chamsuru	Leaves	2, 12, 15,
<i>Securinega leucopyrus</i> (Willd.) Müll.Arg.	Euphorbiaceae	Indian snow berry, Shinar	Whole plant	2, 4, 8, 12, 13,
<i>Semecarpus anacardium</i> L.	Anacardiaceae	Malacca bean, Bhilawan	Fruits	1, 4, 8, 12, 13, 14,

<i>Sesamum indicum</i> L.	Pedaliaceae	Til, Ginger oil plant	Roots	1, 4, 8, 12, 13,
<i>Sida acuta</i> Burm. f.	Malvaceae	Morning mallow, Baraira	Whole plant	1, 11, 18
<i>Sida rhombifolia</i> Linn	Malvaceae	Arrow leaf sida, Cuba jute, Cuban jute	Leaves, Roots	2, 4, 8, 12, 13, 18,
<i>Solanum incanum</i> L.	Solanaceae	Dorli, Grey bitter-apple	Whole plant	1, 9,
<i>Solanum nigrum</i> L.	Solanaceae	Kamuni, Black nightshade,	Fruits	1, 14,
<i>Solanum surattense</i> Burm. f.	Solanaceae	Bitter brinjal, Sundaka	Whole plant	1, 4, 7, 8, 12, 13, 14, 18,
<i>Solanum torvum</i> Sw.	Solanaceae	Turkey Berry, Bhurat	Whole plant	2, 4, 8, 12, 13,
<i>Sorghum bicolor</i> (L.) Moench	Poaceae	Jowar, Sudan Grass, Jar	Seed	2, 10,
<i>Sphaeranthus indicus</i> L.	Asteraceae	Indian sphaeranthus, Gorakmundi	Whole plant	1, 4, 8, 12, 13, 14,
<i>Spondias pinnata</i> (L. f.) Kurz	Anacardiaceae	Wild mango, Ambara	Seed	1, 14,
<i>Stereospermum personatum</i> (Hassk.) Chatterjee	Bignoniaceae	Yellow Snake Tree, Paral	Roots	1, 4, 8, 12, 13,
<i>Tamarindus indica</i> L.	Fabaceae	Chinch, Imli	Bark	1, 4, 8, 12, 13, 14,
<i>Telosma pallida</i> (Roxb.) Craib	Asclepiadaceae	Telosma vine, Surkilla	Leaves	2, 4, 8, 12, 13,
<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Fish poison, Sarphonk	Roots	1, 14, 15, 16,
<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Anjan, Arjun	Leaves	1, 4, 8, 12, 13,
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Beach almond, Bahera	Fruits	1, 14, 15,
<i>Terminalia chebula</i> Retz.	Combretaceae	Hirda, Harra, Harad	Fruits	1, 4, 8, 12, 13, 14, 18,
<i>Tinospora cordifolia</i> auct. non (DC).	Menispermaceae	Gulvel, Heart-leaved moonseed	Whole plant	1, 12, 14,
<i>Trema orientalis</i> (L.) Blume	Ulmaceae	Indian Charcoal Tree, Gio, Jivan	Bark and leaves	1, 4, 8, 12, 13,
<i>Trianthema portulacastrum</i> L.	Aizoaceae	Horse-Purslane, Sabuni, Salsabuni	Roots	1, 4, 8, 12, 13,
<i>Uria picta</i> (Jacq.)DC.	Fabaceae	Prishniparni, Dabra	Roots	1, 4, 8, 12, 13,
<i>Vetiveria zizanioides</i> (L.) Nash	Poaceae	Khus, Khas, Khas-khas	Anti-asthmatic activity	2, 4, 8, 12, 13,
<i>Vigna radiata</i> (L.) R. Wilczek	Fabaceae	Golden gram, Mung	Anti-asthmatic activity	1, 14,
<i>Vitex negundo</i> L.	Verbenaceae	Chaste tree, Nirgundi	Leaves	1, 14,
<i>Waltheria americana</i> L.	Sterculiaceae	Sleepy Morning, Velvet leaf	Flowers, buds, leaves and bark	1, 4, 8, 12, 13,
<i>Xeromphis spinosa</i> (Thunb.) Keay	Rubiaceae	Mainphal, Mountain Pomegranate	Fruits	1, 4, 8, 12, 13,
<i>Zea mays</i> L.	Poaceae	Corn, Maka, Bhutta	Root	2, 10,
<i>Ziziphus xylopyrus</i> (Retz.) Willd.	Rahamnaceae	Ghoti, Ghunta	Root bark and fruit	1, 4, 8, 12, 13,

Conclusion

Ethnobotanical plants used for asthma were explored, biological treasure hidden in the Melghat's flora was least known to the world. All the traditional medicinal plants discussed in the review have exhibited significant ethnobotanical, clinical and pharmacological values. Despite gaps in our knowledge of how phytochemicals interfere with cellular functions, several natural plant products are utilized to prevent or treat a wide range of diseases. Despite the remarkable achievements about herbal treatment for asthma during the past several years, several points should be addressed or be kept in mind in future studies. The basic ethnobotanical information collected for Melghat medicinal plants will serve a platform for chemists and pharmacologist to further research regarding active compounds isolation and testing for therapeutic compounds for treating asthma.

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