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Exploration of Some Medicinal Plants Used in Saudi Arabia and Their Traditional Uses

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ABSTRACT

Since ancient times, medicinal plants (MPs) have been used globally for the treatment of various diseases especially in traditional medicine. In the Arab world, MPs are crucial healthcare sources due to they are salient elements of prophetic medicine and long history of MPs research in the Arabian Peninsula. In Saudi Arabia, people have been using MPs to heal several human and livestock diseases. The current review discussed 20 species that are reported in Saudi Arabia for traditional uses. This study also reported the medicinal significance of some of these species in the treatment of various diseases. However, more studies should be accomplished for the pharmacological, phytochemical screening and toxicological in order to assure their toxicity profile and biological activity. This study aims to discuss the traditional uses of some medicinal plants that grow in different regions of the kingdom.

Keywords: Medicinal Plants; Traditional Uses; Saudi Arabia; Biological Activity

Introduction

Since ancient times, medicinal plants (MPs) have been used globally for the treatment of various diseases especially in traditional medicine [1]. MPs are a part of folk medicine and various parts of the plant are used such as flowers, leaves, barks, roots and seeds [2,3]. It has been suggested that MPs are the greatest source to obtain different drugs and approximately 80% of developed countries' populations use traditional medicine [4]. In the Arab world, MPs are crucial healthcare sources due to they are salient elements of prophetic medicine and long history of MPs research in the Arabian Peninsula [2]. In Saudi Arabia, people have been using MPs to heal several human and livestock diseases [5]. Additionally, folk medicine is a remarkable aspect of people's cultural heritage of Saudi Arabia and was utilized even before the introduction of biomedicine [2]. Geographically, Saudi Arabia is characterized by a variety of habitats for instance, valleys, meadows, mountains, lava fields and rocky deserts [5]. The southwestern region of Saudi Arabia is the richest in both species diversity and the number of endemic species compared to other regions [5]. The flora of Saudi Arabia contains many MPs with more than 2250 species and a high proportion (24.57%) of these species have been used for medicinal purposes (Figure 1) [6]. These plants have been documented in two volumes named "Medicinal Plants of Saudi Arabia" and published in 1987 and 2000 [2]. The usage of these plants in the treatment of various diseases such as asthma, cancer, hepatic and neurological diseases was reported as 80%, 55%, 90% and 42.3% respectively [7]. Most of the MPs of Saudi Arabia are belonging to various families involving *Labiatae, Compositae, Polygonaceae, Euphobiaceae, Leguminosae, Amaranthaceae, Capparidaceae* and *Solanaceae* (Table 1) [8]. This study aims to discuss the traditional uses of some medicinal plants that grow in different regions of the kingdom.

Figure 1: Photograph of some medicinal plants [7].

Table 1: Number of traditionally reported species per family in Saudi Arabia [9].

Family Name	Number of Species	Family Name	Number of Species	Family Name	Number of Species
Labiatae (Lamiaceae)	33	*Adiantaceae*	1	*Brassicaceae (Cruciferaceae)*	17
Polygonaceae	8	*Aizoaceae*	4	*Cactaceae*	1
Euphorbiaceae	26	*Annonaceae*	1	*Cannabaceae*	1
Amaranthaceae	13	*Apocynaceae*	10	*Caryophyllaceae*	2
Capparaceae (Capparidaceae)	8	*Aristolochiaceae*	1	*Chenopodiaceae*	15
Solanaceae	20	*Asphodelaceae*	4	*Cleomaceae*	6
Acanthaceae	5	*Boraginaceae*	13	*Commelinaceae*	1
Convolvoulaceae	9	*Moraceae*	4	*Rubiaceae*	1
Cupressaceae	2	*Myrtaceae*	5	*Salvadoraceae*	1
Cynomoriaceae	1	*Plantaginaceae*	4	*Tamaricaceae*	3
Fabaceae (Leguminosae)	49	*Zingiberaceae*	4	*Verbenaceae*	2
Fumariaceae	1	*Zygophyllaceae*	7	*Papavaraceae*	3
Graminae (Poaceae)	13	*Liliaceae*	4	*Nyctaginaceae*	2
Malvaceae	5	*Portulacaceae*	2	*Menispermaceae*	2

Traditional and Ethnomedicinal Uses of Medicinal Plants of Saudi Arabia

Traditionally, various MPs have been used widely in Saudi Arabia for instance, Juniperus procera belongs to Cupressaceae family used for treating gastrointestinal disturbances, hepatic diseases, anti-rheumatism, jaundice and various inflammatory conditions [9]. Moreover, Rumex nervous is one of the major genera of *Polygonaceae* family reported by native people as anti-rheumatic, anti-pyretic, diuretic, anti-hypertensive, anti-scabies, aphrodisiac, anti-rabies, anti-hemorrhoids, anti-emetic, anti-tussive, and to heal leprosy, gonorrhea and lung tuberculosis [10]. Additionally, Ziziphus spina-christi is locally known as "Sidr" that belongs to the

Rhamnaceae family and the leaves of it this plant used to treat skin diseases, sore, wounds and as antipyretic and antiulcer [11]. In the Bedouin, the fresh fruits and decoction of the stem bark of Ziziphus spina-christi are used to treat tuberculosis, bronchitis and to cure fresh wounds [12]. For more information about the traditional uses of MPs grow in Saudi Arabia see (Table 2) [13-20].

Table 2: List of some MPs recorded in Saudi Arabia and their traditional uses.

Scientific Name	Family	Parts used	Medicinal uses	Utilization Method	References
Abutilon figarianum Webb	*Malvaceae*	Whole plant	Relieving muscle pain and healing wounds.	Not reported	[13]
Blepharis ciliaris (L.)	*Acanthaceae*	Leaves, seeds and roots	Fever, astringents, appetizer, cough, asthma, wounds, sores and pruritic.	Decoction of leaves, roots and seeds is taken orally	[5]
Allium cepa L.	*Amaryllidaceae*	Bulb	Respiratory, skin and throat infections.	Infusion, decoction, juice in food.	[2]
Cinnamomum zeylanicum	*Lauraceae*	Bark	Uterine and ovarian diseases, cough, catarrh, diuretic, laxative and blurred vision pimples.	Not reported	[14]
Acacia arabica	*Fabaceae*	Whole plant	Haemorrhae, diarrhoea, scurvy, dysentery scurvy, and colds	Not reported	[7]
B. edulis (Forssk.) Pers.	*Acanthaceae*	Flowers	Upper respiratory tract infection.	Infusion	[15]
A. javanica (Burm. f.) Juss. ex J.A. Schultes	*Amaranthacea*	Leaves and roots	Healing wounds and as hemostatic.	Powder applied topically	[15]
Ajuga bracteosa Wall. ex Benth	*Lamiaceae*	Leaves and fruits	As antiseptic and for teeth pains, diuretic and in treatment of Rheumatism, palsy, amenorrhea, gout and malaria.	Not reported	[16]
Blepharis ciliaris	*Acanthaceae*	Roots, leaves and seeds	Astrignent, Leukoderma and wound.	Decoction	[17]
Allium sativum	*Aliaceae*	Not reported	Gastrointestinal disorders.	Not reported	[8, 18]
Abutilon pannosum (G. Forst.) Schlecht.	*Malvaceae*	Whole plant	Antimicrobial	Not reported	[9]
Tamarix aphylla (L.)	*Tamaricaceae*	Leaves and roots	Wound infection and Stomachache.	Decoction of the leaves and roots	[19]
Asphodelus fistulosus (L.)	*Liliaceae*	Seeds, bulk and flowers	Swellings, Anthelmintic Stomachache	Not reported	[20]
Salvadora persica	*Salvadoraceae*	Roots	Teeth cleansing, good vision, deodorant, antihelmintic, blood tonic, diuretic, and deobstruent.	Decoction	[14]
A. obesum (Forssk.)	*Apocynaceae*	Milky latex mixed with cool	Skin disease.	Topical	[15]
Caralluma quadrangula (Forssk.)	*Asclepiadaceae*	Leaves	For diabetes, stomachic ulcer and smallpox.	Not reported	[16]
Adiantum capillus-veneris	*Adiantaceae*	Whole plant	Fever, cough, diuretic, emmenagouge, expectorant, colds and pulmonary catarrh.	Decoction, juice and infusion	[17]

Conclusion

The current review discussed 20 species that are reported in Saudi Arabia for traditional uses. This study also reported the medicinal significance of some of these species in the treatment of various diseases. However, more studies should be accomplished for the pharmacological, phytochemical screening and toxicological in order to assure their toxicity profile and biological activity.

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