

## Aromatic Plants from Southwestern Saudi Arabia and Their Importance in the Local Folklore

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**Abstract.** Many aromatic plants were found amongst the wild and cultivated plants of the southwestern region of Saudi Arabia. Twenty-four aromatic plants are commonly used by local people for their pleasant smell alongside their folk medicinal importance. In the present study the usage, morphological and ecological aspects of these plants were evaluated. These plants are: *Achillea biebersteinii*, *Anethum graveolens*, *Artemisia judaica*, *Conyza incana*, *Eucalyptus rostrata*, *Foeniculum vulgare*, *Jasminum grandiflorum* var. *floribundum*, *Jasminum sambac*, *Lavandula atriplicifolia*, *Lavandula dentata*, *Lavandula pubescens*, *Melilotus alba*, *Mentha longifolia*, *Mentha piperita*, *Nepeta deflersiana*, *Ocimum basilicum*, *Origanum majorana*, *Otostegia fruticosa*, *Pandanus odoratissimus*, *Pelargonium radula*, *Plectranthus tenuiflorus*, *Psidium punctulata*, *Ruta chalepensis*, and *Tagetes minuta*.

### Introduction

The southwestern region of Saudi Arabia is characterized by a mosaic environment resulting in a relatively high diversity of plants that include a reasonable number of aromatic ones.

Such documentation of the folklore plants would participate positively in the process of preserving the knowledge on the traditional uses of the aromatic plants in Saudi Arabia.

The chemical components and usage of many of these aromatic plants have been reported in a number of articles [1-6]. In the present survey an attempt was made to throw some light on 24 wild and cultivated aromatic plants commonly occurring in southwestern Saudi Arabia alongside their usage by local people.

### General Features of the Region

The southwestern region of Saudi Arabia is characterized by varied topography (Fig. 1) and climate. The lowland, which is located east of the Red Sea, is characterized by its flat to undulating landscape and elevation ranges between sea level to approximately 1000 m. The climate in the Red Sea coastal plains is characterized by mild winters (December, average daily minimum and maximum air temperature are: 20°C and 26°C) and hot summers (July, average daily minimum and maximum temperatures are: 27°C and 38°C). The highland, on the other hand, is characterized by ragged mountains

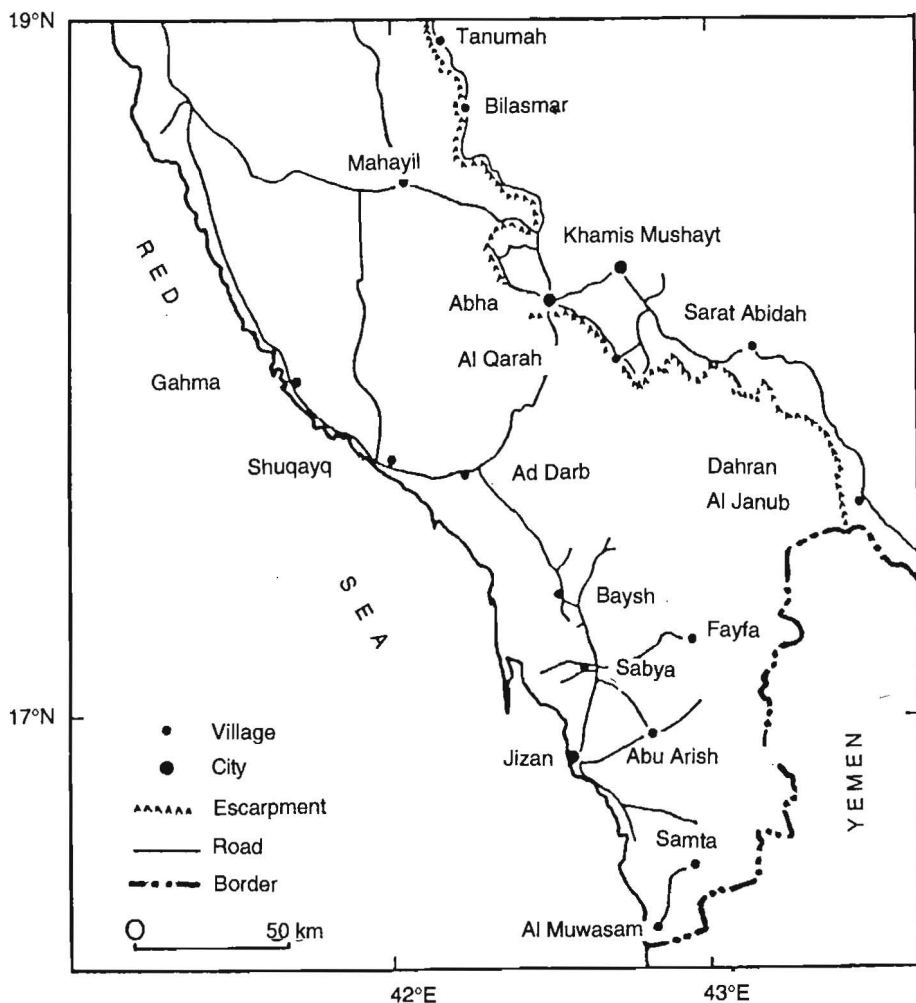


Fig. 1. Map showing the southwestern region of Saudi Arabia, where aromatic folk plants were studied.

and valleys, reaching in some places up to 3000 m. The climate in general is known by cold winters (December, average daily minimum and maximum air temperature are: 10°C and 16°C) and moderate summers (July, average daily minimum and maximum temperature are: 17°C and 32°C). In the southwestern region rain is of the monsoon type and can be expected throughout the year. Approximately 50 to 150 mm and 200 to 600 mm of annual rain have been recorded in the lowland and in the highland respectively. Temperatures in the region seldom drop to zero degrees centigrade. The prevailing wind is southwesterly. Climatic information was extracted from the climatic atlas of Saudi Arabia for the years 1975-1984 [7].

### Results

Twenty-four aromatic plants are reported in this paper. The species are arranged alphabetically under their families. Brief note on the colloquial names, aromatic parts used, habits, average plant height, means of reproduction, whether the plant is wild or cultivated, habitats, and range of distribution is given. Plant identification were based upon a number of publications [8-12]. These aromatic plants were deposited in the Herbarium of the College of Education, at King Saud University, Abha Branch, Saudi Arabia. Detailed information on each taxa is given below:

#### Compositae (Asteraceae)

*Achillea biebersteinii* Afanasier; Thfeera'a; leaves used as perfume, a decoction of leaves is used to treat itching, while chewing fresh leaves relieve toothache; found in moist places near cultivated grounds; an erect leafy herb; 35 cm high; reproduces by seeds and runners; wild and widespread.

*Artemisia judaica* L.; Beathran or Birk; leaves and flowers are aromatic; twigs wrapped around the head for their scent; boiled leaves drunk to allay headache; fume of burning leaves inhaled to allay headache; planted inside the house to repel mosquitoes and bugs; people used to stuff pillows with the leaves; found in moist organic soil; shrublet; 40 cm high; reproduces mostly by cutting; cultivated and an indoor plant and widespread.

*Conyza incana* Wild.; Arafat; leaves are aromatic; used as perfume, heated leaves are applied externally to relieve muscles and joints pain, fume of burning branches are used to repel insects; found in sand pan; bushy shrublet; 30 cm high; reproduces by seeds; wild and widespread on highlands.

*Psiadia punctulata* Vatke; Erka; flowers and leaves are aromatic, used as perfume; found in rocky places; a bushy leafy shrublet; 40 cm tall; reproduces by seeds; wild and widespread on highlands.

*Tagetes minuta* L.; Bardaghoush or Dardaboush; leaves and flowers are aromatic, used as perfume; leaves and flowers drunk with tea to treat cold and constipation problems; found in loamy soil, perennial herb; 80 cm high; reproduces by seeds; cultivated and an indoor plant and widespread.

## Geraniaceae

6. *Pelargonium radula* L. Herit.; Etr or Meramiyah; leaves are aromatic; used as perfume; leaves added to tea for better flavor; found in loamy organic soil; perennial herb; 100 cm high; reproduces by cutting and seeds; cultivated and an indoor plant.

## Labiatae (Lamiaceae)

*Lavandula atriplicifolia* Benth.; Mughaibra or Bayadh; leaves are aromatic; used as perfume; perennial herb; 40 cm high; reproduces by seeds; wild and found in rocky places on highlands.

*Lavandula dentata* L.; Dhurum, Jithjith or Fix; leaves and flowers are aromatic, used as perfume; steam of boiled leaves when inhaled helps to cure cold ailment; found in mostly rocky habitats; a bushy shrublet; 60 cm high; reproduces by seeds; wild and widespread on highlands.

*Lavandula pubescens* Decne.; Thafra'a or fix; leaves and flowers are aromatic, used as perfume; found in rocky places; perennial herb; 60 cm high; reproduces by seeds; wild and widespread on highlands.

*Mentha longifolia* (L.) Huds.; Habak; leaves are aromatic, used as perfume; leaves added to tea for better flavor and to help curing sore throat, headache, menstrual cramps, and stomach problems; the plant contains menthol, menthone, limonine phellendrine and pipene; found on moist banks of wadis; perennial herb; 70 cm high; reproduces by runners; wild and widespread on highlands.

*Mentha piperita* L.; Nana'a or Nina'a; shoot is aromatic, scented; leaf extract drunk with tea to allay headache and stomach ache; eaten with salad; found in loamy moist soils; perennial herb; 20 cm high; reproduces by cuttings and seeds and cultivated.

*Nepeta deflersiana* Schweinf.; Reeh Fatimah or Shaya'ah; flowers and leaves are aromatic, used as perfume, mashed leaves applied externally as a remedy for burns; found on rocky hills; perennial herb; 45 cm high; reproduces by seeds; wild and widespread on highlands.

*Ocimum basilicum* L.; Rayhan; leaves and flowers are aromatic; used as perfume; wrapped around the head for its scent; its juice used as a hair tonic; found in loamy organic soils; perennial herb; 30 cm high; reproduces by runners; cultivated and an indoor plant and widespread.

*Origanum majorana* L.; Wazzab or Doush (other species could fall under the name Wazzab); the shoot is aromatic, used as perfume; wrapped around the head; shoot extract used as a hair tonic, also drunk as tea to allay stomach ache; leaves used to heal wounds; found on moist loamy soils; perennial herb; 30 cm high; reproduces by seeds and runners; cultivated and an indoor plant and widespread especially over the highlands.

*Otostegia fruticosa* Miller; Sharmah; leaves are aromatic, used as perfume; leaf

infusion used to cure irritated eyes of cows, goats and sheep; found on rocky-bouldery hills; shrub; 150 cm high; reproduces by seeds; wild and widespread on highlands.

*Plectranthus tenuiflorus* (Vatke) Agnew; Shar; leaves are aromatic, used as perfume, and eaten to cure cough and throat problems; drops of leaf extract are used to treat infected ears; found on clay soils; perennial herb; 50 cm high; reproduces by runners and seeds and wild and cultivated; widespread on escarpments.

### Leguminosae (Fabaceae)

*Melilotus alba* Medik.; Etr; leaves are scented and used with tea for their good flavor and taste; found on edges of wadis and farms; perennial herb; 40 cm high; reproduces by seeds; cultivated and wild and widespread on highlands.

### Myrtaceae

*Eucalyptus rostrata* Schlecht.; Kafour, Keen or Keenah; leaves are aromatic; steam of boiled leaves used to cure breathing problems; planted around farms for its aesthetic value and as a wind breaker; cultivated; grows well on frequently watered soils; a tree; 12 m high and reproduces by seeds.

### Oleaceae

*Jasminum grandiflorum* L. var. *floribundum*; Yasmeeen or Alwak; flowers and leaves are aromatic, used as perfume; scrambling through bushes on rocks; a leafy weak-stemmed shrub, with stems 3 m long; reproduces by seeds; cultivated and wild; and widespread on highlands.

*Jasminum sambac* (Soland. in) Ait.; Ful or Radeem; flowers aromatic, used as perfume; found on loamy organic soils; shrublet; 1 m high; reproduces by seeds; cultivated and often used during wedding ceremonies.

### Pandanaceae

*Pandanus odoratissimus* L.; Kadi or Kathi; flowers are aromatic, used as perfume; found along moist sandy wadi edges; shrub; 2-3 m high; reproduces by rhizomes and offshoots; wild and cultivated; often used during wedding ceremonies and widespread in lowlands.

### Rutaceae

*Ruta chalepensis* L.; Shathab, Sadab or Sathab; leaves and flowers are aromatic, used as perfume; mashed leaves are applied externally to relieve snake-bite, headache, sore ears, wounds and swellings; it is believed that wrapping twigs around the head helps curing psychological problems and keep the demon away; found in loamy soils; shrublet; 70 cm high; reproduces by seeds; and wild and cultivated.

### Umbelliferae (Apiaceae)

*Anethum graveolens* L.; Scannout; leaves and stems are aromatic, used as perfume;

twigs used as substitutes for tooth brushes; leaves can be mixed with tea for good flavor; eating fresh plant may treat cough, sputum and intestinal problems; found on edges of dry wadis, on organic-rich soils; a thick feathery-leaved herb; 40 cm high; reproduces by seeds; wild and cultivated; and widespread.

*Foeniculum vulgare* (L.) Mill.; Sheeh; leaves and stems are aromatic; twigs used as substitutes for tooth brushes; leaves can be mixed with tea for good flavor; the decoction of seeds and leaves is used to relieve cough and stomach problems; found on banks of dry wadis and on organic-rich soils, perennial herb; 100 cm high; reproduces by seeds; wild and widespread.

### Discussion

The variation in topography and climate of the region allows a large number of plant species to thrive. Several of them are aromatic and attractive on grounds of their pleasant scent. Such plants fall under three categories: wild, cultivated, or both wild and cultivated.

In the present survey the author tried to shed some light on the usage of twenty -four aromatic species.

It was found that these aromatic plants are often sold as vegetable products throughout the region. These plants have specific usages: in diet for their good flavor, in folk medicine and in hair decorating. Many of these plants are grown in pots and treated as indoor plants for their smell and aesthetic value. The price of a bouquet or a bundle of such plants varies with species and marketing area. However, the most expensive plants include the exotic *Jasminum sambac* "Ful", and *Pandanus odoratissimus* "Kadi", where a handful of "Ful" flowers is sold for five Saudi Riyals, and a flowering branch of "Kadi" plant is sold for SR 20. The present study showed that a relatively high percentage of the aromatic species came from the family Labiatae, while other families were represented by fewer species. It is well known that most plants which belong to the labiatae family are aromatic, and many species are being cultivated worldwide for the flavor, odor, or for aesthetic, and medicinal purposes.

The cultivation of aromatic plants should be encouraged, and it is hoped that some private or state agencies will be invited to establish the proper industry for perfume or pharmaceutical products from the plants which proved so far useful.

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## نباتات عطرية من الجنوب الغربي للمملكة العربية السعودية وأهميتها الشعبية

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(سُلم في ٦ ربيع الآخر ١٤١٤هـ؛ وقُبل للنشر في ١٣ شوال ١٤١٦هـ)

**ملخص البحث.** تمَّ خلال هذه الدراسة التعرف بشكل جيد على ٢٤ نوعاً من النباتات العطرية التي يتداولها السكان بشكل مستمر، لما فيها من عطور فوّاحة جميلة، وفوائد طبية وعلاجية، في الجنوب الغربي من المملكة العربية السعودية.

وتشتمل هذه المجموعة على نباتات برية ومنزرعة، وهي: شفياء، بعيثران أو برك، عرفج، عركة، بردكوش أو بردبوش، عطر أو ميرامية، مغيرة أو بياض، ضرْم أو جثجث أو فكس، ثفراء أو فكس، حبق أو شمطري، نعناع، ريح فاطمة أو شايعة، ريحان، وزاب أو دوش، شربة، شار، عطر، كافور أو كين أو كينة، ياسمين أو علوق، فل أو رديم، كادي أو كاذي، شذاب أو سذاب أو سداب، شيح وسنوت.

حاولت خلال هذا المسح المبدئي للنباتات العطرية إلقاء الضوء على طبيعة النباتات واستعمالاتها وبيئاتها بأمل أن يكون هذا العمل محفزاً للباحثين لإجراء المزيد من البحوث في مجالات الصناعات العطرية وصناعات العقاقير.