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Morphological features and Phyto-constituents of *Meriandra bengalensis* (J. Koenig ex Roxb.) Benth.

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Abstract

Meriandra bengalensis (Konig ex Roxb.) Benth. is an annual herbaceous and aromatic plant belonging to the Lamiaceae family and is scented plant. The leaves of this plant are used to treat lethargy and sore throat in North East, India. Fresh leaves are used to treat high blood pressure and are also used as a tonic, carminative, astringent, and antibacterial. Tonsillitis is treated using an extract from inflorescences. The oil obtained from the leaves comprised mostly (+)-camphor (82%) and 30 minor chemicals. Sesquiterpenes, diterpenes, triterpenes, and flavones have been identified from its aerial portions and roots. The present paper highlights the morphological features and phyto-constituents of the plant.

Key-words: *Meriandra bengalensis*, Botanical information, Chemistry

Introduction

Meriandra dianthera (Roth ex Roem. & Schult.) Briq., synonym *Meriandra abyssinica* F.Muell., *Meriandra bengalensis* (J.Koenig ex Roxb.) Benth., *Salvia bengalensis* J.Koenig ex Roxb., *Salvia dianthera* Roth ex Roem. & Schult., *Salvia stachydea* Klein ex Schult. often known as Bengal sage or Bengal salvia (hi:), is a mint-flavored herb that is grown for medicinal purposes. It is a type of angiosperm (Dicotyledon) Lamiaceae is a family of plants. Miriandra is a genus of plants. Benth's Species: bengalensis Aromatic undershrub with a tall stature. Leaf and blossom are the parts that are used. Fresh leaves are utilised as a condiment in this dish. For decoction, the leaves are crushed. Infusion of leaves soaked in water.

Application methods: Decoction, Fresh, and Local Ingredients. [1-3]

Meriandra oil is an essential oil produced by the plant. Treatment for the ailment: Fresh leaves are used as a carminative, astringent, and antibacterial in addition to lowering blood pressure. Tonsillitis is treated with an inflorescence extract gargle. In the event of dizziness, leaf paste is applied to the forehead. Cough and dyspepsia are treated with a leaf decoction. A leaf infusion can be used to treat lethargy and a sore throat. [4]

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Morphological features

Shrub with an aromatic, camphor-like, odour. Stems woody and leafless below, up to 1 m, above leafy and with an indumentum of short dendroid hairs only. Leaves regularly ovate-oblong to elliptic, 5-11 x 1-3 cm, thickish-textured, very finely crenulate, cuneate, rounded or cordate, acute, rugulose on adaxial side; indumentum denser on abaxial side, whitish; petiole up to 12 mm; clusters of young leaves sometimes present in axils. Inflorescence spike-like, of distinct, clearly separated or almost so, verticillasters. Bracts equal to or shorter than calyces. Calyx in flower c. 2-3 mm, in fruit to c. 7 mm, with a dense indumentum of eglandular branched hairs; upper lip subentire; lower lip with 2, c.1-15 mm lobes. Corolla 6-7 mm, white or pale lilac, with spreading lobes; tube with a dense annulus. Stamens 2, exserted; thecae separated by a short connective, parallel; small staminodes usually present. Nutlets c. 1.8 x 1 mm, brown, not mucilaginous on wetting. [1]

Description

There are four species in the genus Meriandra (family Lamiaceae) that are found in Asia, Africa, and India. Meriandra dianthera (Roth ex Roem. & Schult.) Briq. [synonym: Meriandra bengalensis (Konig ex Roxb.) Benth.] is a perennial much-branched, upright, aromatic undershrub that grows up to a height of 3–6 ft and thrives on rocky slopes between 2000 and 2800 m in Saudi Arabia, Yemen, and Eritrea. M. dianthera has been used as an antibacterial, astringent, carminative, and antirheumatic agent in numerous cultures. This plant's aerial parts and roots are commonly utilised in Saudi and Yemeni folk medicine.

The plant's infusion is used to treat wounds as an antibacterial and to treat urinary tract infections. M. dianthera is used in Eritrean traditional medicine to treat hypertension, malaria, hepatitis, infections, and diabetes. Volatile oil, sesquiterpenoids, abietane diterpenoids, triterpenoids, and flavonoids have previously been found in the leaves and roots of this plant. Furthermore, previous research on the roots of Meriandra dianthera (Meriandra bengalensis) obtained in Yemen revealed intriguing cytotoxic, antibacterial, and antioxidative properties, leading to the extraction and characterisation of four abietane diterpenoids. [3-4]

Fig. 1: Plant: *Meriandra dianthera* (Roth ex Roem. & Schult.) Briq.

Chemical Profile

Meriandra benghalensis (Meriandra benghalensis) is a plant (Roxb.) Benth (Lamiaceae) is a branching, scented shrub that grows up to 2 metres tall. The plant has a distinct liniment odour and has been used as a carminative, antirheumatic, astringent, and antiseptic for centuries. Sesquiterpenes, diterpenoids, triterpenes, and flavones have been discovered in M. benghalensis. The oil of M. benghalensis from Italy was high in camphor (80%), whereas the oil from Indian M. benghalensis was high in linalool (68.4%), 1,8-cineole (17.4%), and terpineol (2.7%). *M. dianthera* essential oil (MDEO) was characterized by a high content of oxygenated monoterpenes (76.2%). Camphor (54.3%) was the major constituent in the volatile oil followed by 1,8-cineole (12.2%), camphene (10.4%), and borneol (3.1%) [5-8]

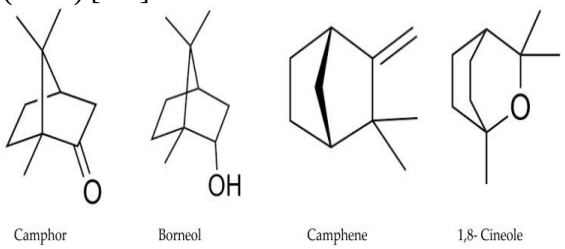

Fig. 2: Some important chemicals constituents of *Meriandra bengalensis*

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