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A REVIEW STUDY ON ACACIA TORTILLIS

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ABSTRACT

The genus *Acacia* belongs to the family Mimosaceae. Several acacia species are important economically. *Acacia tortilis* is one of the important species of genus *Acacia* belonging to family Leguminaceae. The various part of *Acacia tortilis* plant say leaves, pods, gum exudates and bark is found to be beneficial for the purpose of commercially as well as medicinally. The survival of this plant in arid zone is due to its ability to endure harsh condition and it is also help full to prevent soil erosion. In this review article the main focus is on the botanical characters, Taxonomy, chemical composition and ethnomedicinal uses of *A. tortilis.*

Key words: Arid zones, soil erosion, ethnomedicinal, economic.

INTRODUCTION

Acacia is the largest genus in the Leguminosae-Mimosoideae with approximately 1200 species distributed mainly in tropical and subtropical regions [9]. Species of Acacia have an ability to flourish under adverse conditions. They can tolerate salinity and seasonal waterlogging and are adapted to environments with little and unreliable rainfall. Moreover, they are adapted to anthropogenic pressures [2], [5]. *A. tortilis* is a drought-resistant species [1]. The generic name 'Acacia' derived from the Greek word 'akis', meaning a point or a barb. The name 'tortilis' means twisted and refers to the pod structure. It is also known as umbrella thorn due to it umbrella like structure and in India it is commonly known as Israeli babool (Orva).

TAXONOMY STATUS

Kingdom : Plantae
Phylum : Tracheophyta
Class : Magnoliopsida
Order : Fabales
Family : Fabaceae
Genus : Acacia
Species : tortillis

Synonymes : *Vachellia tortillis*

ECOLOGY

This species ranges from subtropical desert to dry through tropical desert to very dry forest life zones. The umbrella tree is reported to tolerate annual precipitation of 10-100 mm, an estimated annual temperature of 18-28 ºC and pH of 6.5-8.5. This species bear hot, arid climates with temperatures as high as 50 ºC [3].

BOTANICAL DESCRIPTION

A. tortillis tree that may reach 20 in height with an umbrella-shaped and flat top canopy. Stem and branches are dark brown in the mature and reddish brown with grey lenticels in the young. Leaves are smooth to densely pubescent, 1-7 cm long, with 2-14 pinnae each with 6-22 pairs of leaflets. Flowers white or pale yellowish-white, fragrant, in round heads, solitary or in fascicles. Bark are grey-brown-black, rough and fissured. The spines are in pairs, some short and hooked up to 5 mm long, mixed with long straight slender spines up to 10 cm long. a contorted or spirally twisted pod, yellowbrown, 5-15 cm long, with longitudinal veins and slightly

constricted between the seeds. There are 5- 18 seeds/pod. Semi-dehiscent, i.e. the ripe pods open but remain on the tree without releasing the seed.

CHEMICAL CONSTITUTES

Fatty acid: 19% oleic acid, 72% linoleic acid, 60% linoleic acid [12].

Tannin: The leaves, and to a lesser extent the bark, of many species contained between 1 and 8% hydrolyzable tannins [12]. ***Gum:*** A. tortilis contain Uronic acid 8, Galactose 23, Arabinose 66, Rhamnose, Mannose [13], nitrogen 0.99%, protein content 6.18%, pH 6.46 [7]. ***Flavenoid****:*Apigenin-6,8-bis-C-β-d- lucopyranoside (vicenin)8 Rutin (quercetin 3-O-rutinoside) [12].

Figure 1
[A] Tree of Acacia tortilis [B] Twig with spine [C] Leaves [D] Pod

ETHNOMEDICINAL USES

Flower: 90% of the flowers abort and drop to the ground, providing additional important forage [14]. ***Gum:*** Gum obtained from Acacia tortilis and other species of acacia has been used as a food additive and for medicinal purpose [4]. ***Wood:*** Used for planking, boxes, poles,moisture proof plywood, gun and rifle parts, furniture, house construction and farm implements. [6]. ***Bark:*** The bark is reported to be a rich source of tannin so it is used as a dye [6]. Acacia tortilis root bark possesses antimalarial activity but would not be considered for follow up as an antimalarial candidate [10]. In cattle Tannins form protective layers on the skin and mucous membranes so it proves useful in cattle suffering from diarrhoea. In A.tortilis due to presence of tannins it is beneficial in diarrhoea in cattle [8].

CONCLUSION

Acacia tortilis is very important plant of arid and sub arid zone, it consist of numerous medicinal as well as commercial value. *Acacia tortilis* traditionally used in dysentry, pharyngitis, diarrhea, cough, cold, inflammation, gastric irritation, tuberculosis, hemorrhage, relief from pain in burn etc. But study on this valuable plant is limited.

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