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A review on ethnomedicinal plant *Acacia nilotica* (Linn.) wild

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Abstract

Acacia nilotica Linn. (Mimosaceae) indigenously known as 'Babul' or 'Kikar' is a proverbial, medium sized tree and is broadly scattered in tropical and subtropical countries. Almost all its parts such as leaves, bark, root, flower, pods, gum, etc. are used in medication. This article briefly reviews the ethanobotanical as well as medicinal uses of *A. nilotica* with plant description.

Keywords: ethnomedicinal plant, *Acacia nilotica* (Linn.)

1. Introduction

Life and diseases are related, where there is life, diseases are will also be present. Man and animal depends on plants food, fibers and shelter, but also plants have been used to control and ease diseases, therefore the use of plants as medicines is an ancient and reliable practice. Indigenously different plants have been found which are used to cure diseases at a time. Over three quarters of the world population relies mainly on plants and plant extracts for healthcare. More than 30% of the entire plant species at one time or other was used for medicinal purposes. The Ayurveda system of medicine uses about 700 species, Unani 700, Siddha 600, Amchi 600 and modern medicine around 30 species [6]. Plants are used medicinally in different countries and are a sources of many potent and powerful drugs. A wide range of medicinal plant parts is used for extract as raw drugs and they possess varied medicinal properties. The different parts used includes root, stem, flower, fruit, twigs exudates and modified plant organs. While some of these raw drugs are collected in smaller quantities by the communities and folk healers for local used, many other raw drugs are collected in larger quantities and traded in the market as the raw material for many herbal industries.

Acacia nilotica Linn. Is also known as Gum Arabic tree, Babul, Egyptian thorn, or Prickly Acacia is multipurpose nitrogen fixing legume tree (Figure 1). It occurs from sea level to over 2000 m and withstand at extreme temperature (>50 °C) and air drying, but sensitive to frost when it is young [1]. It is widely spread in subtropical and tropical Africa from Egypt to Mauritania southwards to South Africa, and in Asia eastwards to Pakistan and India.

Plant description

Acacia nilotica is a medium-sized, thorny tree, evergreen tree with a short trunk and having round spreading crown with feathery foliage, found in the whole drier parts of India. *Acacia nilotica* is a single stemmed plant, grows to 15- 18 m in height and 2-3 m in diameter. The leaves are fine and densely hairy with 3-6 pairs of pinnate consisting of 10-20 pairs of leaflets that are narrow with parallel margins and are rounded at the apex with a central midrib closely crowded. [9]. Thorns are thin, straight, light grey exist in axillary pairs (usually 3-12), 5-7.5 cm long in young trees. Flowers bloom from June to September, and also in December to January. Flowers are globular heads, 1.2-1.5 cm in diameter of a bright golden yellow colour, develop either in axillary or whorly pattern on peduncles 2-3 cm long located at the end of branches [1]. Pods ripen in the months of May to June. Pods are 7-15 cm long, green and tomentose (when immature) or greenish black (when mature), indehiscent, deeply constricted between the seed giving a necklace appearance. Seeds are 8-12 per pod, compressed, ovoid, dark brown shining with hard testa [8]. The gum exudes from the cuts in the bark in form of ovoid tears. The tears are glossy and marked with minute fissures and are brittle in nature. The colour of the gum varies from pale yellow to black. It is soluble in water [12].

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Fig 1: [A] *A. nilotica* tree [B] Flowering branch [C] Single flower

Ethnomedicinal uses

Acacia nilotica is a pioneer species, relatively high in bioactive secondary compound and are important for a variety of functions is economically used as a source of tannins, gums, timber, fuel and fodder [4]. Babul plant is therapeutic used as anti-cancer, anti tumours, antiscorbutic, astringent, anti-oxidant, natriuretic, antispasmodial, diuretic, intestinal pains and diarrhea, nerve stimulant, cold, congestion, coughs, dysenter, fever, hemorrhages, leucorrhoea, ophthalmia and sclerosis [14]. *A. nilotica* is the most important tree and almost all its parts are used in medicine, including leaves, bark, root, flower, pods, gum, etc.

Leaves: The leaves are astringent, tonic to the liver and the brain, antipyretic, enriches the blood. The tender leaves infusion used as an astringent and remedy for diarrhoea and dysentery [12, 13].

Bark: Decoction of bark is largely used as an astringent douche in gonorrhoea, cystitis, vaginitis, leucorrhoea, prolapse of the uterus and piles [7].

Root: Powder of the root is useful in leucorrhoea, wound healing, and burning sensation [3].

Flowers: It use as in diarrhoea and dysentery, premature ejaculation and seminorrhoea.

Pods: The pods are used for impotency, urino-genital disorder and in a dry cough. The seeds and leaf extracts are used for general body vigour [11].

Gums: The gum is said to be very useful in diabetes mellitus [2].

Phytochemistry

Plant compounds have interest as a source of safer or more valuable substitutes than synthetically created antimicrobial agents. These procedures have shown that many substances originally thought to be rather rare in occurrence are of almost universal distribution in the plant kingdom [10]. The phytochemicals are divided chemically into a number of groups among which are alkaloids, volatile essential oils, phenols and phenolic glycosides, resins, oleosins, steroids, tannins and terpenes. The phytochemicals alkaloids and glycosides detected in the crude extracts of *A. nilotica* roots [5]. *A. nilotica* is a medicinal plant from which the polyphenolic compounds kaempferol has been reported for the first time. Another compound umbelliferone has been reported from *A. nilotica* [15].

Conclusion

A. nilotica plant is rich in phytochemicals and has been in use since ancient times to treat a wide range of diseases in traditional system medicine. The present article is would be helpful to create awareness among people for taking control measures based on, herbal plants against infectious diseases. Further more detail clinical researches are needed to explore its medicinal value in order to establish it as a standard drug.

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