wjpmr, 2019,5(3), 69-70

SJIF Impact Factor: 4.639

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Review Article

ISSN 2455-3301

WJPMR

BABOOL - ACACIA NILOTICA: A PLANT OF MULTIPURPOSE MEDICINAL USES

Dr. Vikram Sidh*[1] and Dr. Omprakash Sharma[2]

[1]PG Scholar Deptt of Dravyaguna.
[2]Professor Deptt of Dravyaguna.

***Corresponding Author: Dr. Vikram Sidh**

PG Scholar Deptt of Dravyaguna.

Article Received on 24/12/2018 **Article Revised on 14/01/2019** **Article Accepted on 04/02/2019**

ABSTRACT

Acacia nilotica Lam (Mimosaceae) indigenously known as 'Babul' or 'Kikar' is a proverbial, medium sized tree and is broadly scattered in tropical and subtropical countries. It has an inspiring range of medicinal uses with potential anti-oxidant activity. This plant contributes a number of groups among which are alkaloids, volatile essential oils, phenols and phenolic glycosides, resins, oleosins, steroids, tannins and terpenes. *A. nilotica* is a medicinal plant acknowledged to be rich in phenolics, consisting of condensed tannin and phlobatannin, gallic acid, protocatechuic acid, pyrocatechol, (+) -catechin, (-) epi- gallocatechin-7-gallate and (-) epigallocatechin-5, 7-digallate. Different parts of this plant such as the leaves, roots, seeds, bark, fruits, flowers, gum and immature pods act as anti-cancer, antimutagenic, spasmogenic, vasoconstrictor, anti-pyretic, anti-asthamatic, cytotoxic, anti-diabetic, anti-platelet agregatory, anti-plasmodial, molluscicidal, anti-fungal, inhibitory activity against Hepatitis

KEYWORDS: *Acacia nilotica*, phytomedicine, multipurpose plant, different parts, medicinal uses, pharmacological properties.

INTRODUCTION

Acacia nilotica (L.) Del. syn. ***Acacia arabica*** (Lam.) Willd. (Mimosaceae) is an imperative multipurpose plant (Kaur et al., 2005). *A. nilotica* is a plant 5 to 20 m high with a thick spherical crown, stems and branches usually sinister to black colored, grey-pinkish slash, fissured bark, exuding a reddish low quality gum. The plant has straight, light, thin, grey spines in axillary pairs, usually in 3 to 12 pairs, 5 to 7.5 cm long in young trees, mature trees commonly without thorns. The leaves are bipinnate, with 3 to 6 pairs of pinnulae and 10 to 30 pairs of leaflets each, rachis with a gland at the bottom of the last pair of pinnulae. Flowers in globulous heads 1.2 to 1.5 cm in diameter of a bright golden-yellow color set up either axillary or whorly on peduncles 2 to 3 cm long located at the end of the branches. Pods are strongly constricted, white-grey, hairy and thick (baravker et al., 2008). A. nilotica is a pantropical and subtropical genus with species abundant throughout Asia, Australia, Africa and America. A.nilotica occurs naturally and is imperative in traditional rural and agro-pastoral systems (Shittu, 2010).

A. Nilotica is recognized by the following names: Acacia, Acacia Arabica,
B. Babhul - **Hindi and Napalese**,
C. Babla - **Bengali,**
D. Babool - **Unani,**
E. Babool Baum - **German,**
F. Babhoola - **Sanskrit,**
G. Babul, Babul Tree,

Medicinal Uses and Pharmacological Effects

A. nilotica also has numerous medicinal uses. The medicinal traits and pharmacological activities endorsed to various parts of *A. nilotica* are detailed as follows.

Anti-hypertensive and anti-spasmodic activities

A decrease in arterial blood pressure is reported by use of methanolic extract of *A. nilotica* pods and provides evidence of anti hypertensive activities independent of muscarinic receptor stimulation. In the *in vitro* studies, *A. nilotica* has inhibitory effect on force and rate of spontaneous contractions in guinea-pig paired atria and rabbit jejunum. *A. nilotica* also inhibits K^+ induced.

Antibacterial and antifungal activities

The assays of the stem bark extracts confirms the antimicrobial activity against *Streptococcus viridans*, *Staphylococcus aureus*, *Escherichia coli*, *Bacillus subtilis* and *Shigella sonnei* using the agar diffusion method. *A. nilotica* could be a potential source of antimicrobial agents (Banso, 2009).

Antiplasmodial activities

The ethyl acetate extract holds the highest activity on *Plasmodium falciparum*. Phytochemical analysis indicated that the most active phase contained terpenoids and tannins and was devoid of alkaloids and saponins

(El-tahir et al., 1999). Crude methanolic root extracts of *A. nilotica* reveals significant activity against chloroquine sensitive strain of *Plasmodium berghei* in mice (Jigam, 2010).

Antioxidant activity

Water extract/fractions of *A. nilotica* (L.) in lipid peroxidation assay possess the peroxyl radical scavenging capacity and results prove the anti-oxidant activity of plant.

The bark powder of the plant extracts with different solvents found the scavenging activity using maceration extraction (Del, 2009). Another study reveals that *A. nilotica* is easily accessible source of natural antioxidants, which can be used as supplement to aid the therapy of free radical mediated diseases such as cancer, diabetes, inflammation, etc (Amos et al., 1999).

Acetylcholinesterase inhibitory activities

Acetylcholinesterase is a basic aim in the treatment of Alzheimer's disease. It has been found that *A. nilotica* has effect on central nervous system activities due to potent Acetylcholinesterase inhibitory activities. More investigations are required in the treatment of Alzheimier's (Crowch and Okello, 2009).

Anti-diabetic activities

Studies have confirmed anti-diabetic activities. However, pods and tender leaves are considered very beneficial in folk medicine to treat diabetes mellitus (Gilani et al., 1999).

Chemopreventive, cytotoxic and anti-mutagenic activities

It has been reported, that the antimutagenic and cytotoxic activities exhibited by acetone extract may be due to the presence of gallic acid and other polyphenols (Kaur et al., 2005). It is reported that the leaf extract of *A. nilotica* had significant chemopreventive and anti-mutagenic activity than the other parts (Kalaivani and Mathew, 2010a). The chemopreventive activity of *A. nilotica* gum, flower and leaf aqueous extracts, on 7,12– dimethylbenz (a) anthracene (DMBA) induced skin papillomagenesis in male swiss albino mice has been found.

The chemopreventive and anti-mutagenic activity of the leaf extract of *A. nilotica* was the most significant, followed by the flower extract and then by gum (Meena et al., 2006).

REFERENCES

1. Agrawal S, Kulkarni GT, Sharma VN (2010). A comparative study on the antioxidant activity of methanol extracts of acacia. Adv. Nat. Appl. Sci., 4(1): 78-84.
2. Amos S, Akah PA, Odukwe CJ, Gamaniel KS, Wambede C (1999). The pharmacological effects of an aqueous extract from *Acacia nilotica* seeds. Phytother. Res., 13: 683-685.
3. Asres K, Seyoum A, Veeresham C, Buca F, Gibbons S (2005). Naturally derived anti-HIV agents. Phytother. Res., 19: 557-581.
4. Badshah L, Hussain F (2011). People preferences and use of local medicinal flora in District Tank, Pakistan. J. Med. Plants Res., 5(1): 22-29.
5. Banso A (2009). Phytochemical and antibacterial investigation of bark extracts of *Acacia nilotica*. J. Med. Plants Res., 3: 082-085.
6. Baravkar AA, Kale RN, Patil RN, Sawant SD (2008). Pharmaceutical and biological evaluation of formulated cream of methanolic extract of *Acacia nilotica* leaves. Res. J. Pharm. Technol., 1(4): 481-483.
7. Crowch CM, Okello EJ (2009). Kinetics of acetylcholinesterase.