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BIO EFFICACY OF EPIPREMNUM AUREUM: A REVIEW

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ABSTRACT
Epipremnum aureum belonging to the family Araceae are most commonly known as Money plant. Epipremnum aureum species is one of the most popular houseplant and generally used for a ornamental purposes. It is a common indoor plant and has air purifying properties which removes air pollutants such as xylene, formaldehyde and benzne.. In this article, we review origin, distribution, morphological characters, Qualitative screening, ethnomedicinal uses and medicinal properties of Epipremnum aureum. Every part of the E.aureum possess antioxidant and antibacterial properties. It can also contain anti-malarial, anti-cancerous and wound healing etc properties. There are many more hidden properties in Epipremnum species that need to be exposed through using the scientific investigation to make it useful for the human health and environment.

Keywords: *Epipremnum aureum, Qualitative screening, Medicinal properties*

INTRODUCTION

Epipremnum aureum, belongs to the family Araceae and it is belongs to class monocotyledonae. *E.aureum* is a climber climbing plant which means aerial roots of *E.aureum* hook over other tree branches and it is a evergreen plant. It is a perennial plant and one of the most commonly used as indoor plants in India. *E.aureum* has a multitude of common names including golden pothos, money plant, house plant, marbel queen,silver vine, devil's vine or devil's ivy. It is native to southeastern asia and New Guinea. *Epipremnum* comprises 110 genera and 2500 species in the world. *E.aureum* and *E.pinnatum* are the most widely cultivated and best known species than the other species.(Srivastva *et al.*,2017*)*

Classification:

Taxonomical classification of *E.aureum* according to the system of Bentham and Hooker.
Kingdom: Plantae
Subkingdom: Phanerogames
Division: Angiosperm
Class: Monocotyledonae
Series: Nudiflorae
Family: Araceae
Genus: *Epipremnum*
Species: *aureum*
(Rita Himanshu Mehta *et al.*,2013)

Epipremnum aureum is an evergreen, perennial and grown as either trailer or a climber. *Epipremnum aureum* has a shiny heart shaped, dark green, flat and plump leaves. Young plants comprises 8-20cm long heart shaped leaves. Leaves are generally small and leaf surface is waxy. If they are grown under favourable condition it grows longer and big in size. Their leaves shows variety of colours such as white, cream, yellow and various shades of green in different cultivars according to lighting conditions and other cultural factors. *E.aureum* rarely produces flowers even its native habitat and do not produce flower under greenhouse condition. Flowers of this plants are produced in a spathe upto 23cm long. Stem produces trailing stems when it climbs trees. *E.aureum* propagated easily through stem cutting.It climbs tree trunks by aerial rootlets and trundle along the ground as a ground cover, reaching upto 40' or even more in length(Anju Meshram *et al.*, 2014). All parts such as leaves, roots, stems of *E.aureum* are used as a medicinal properties.

2. Phytochemicals

Table-1.Review of Qualitative screening of leaves (*E.aureum)* in different solvent by different scientists.

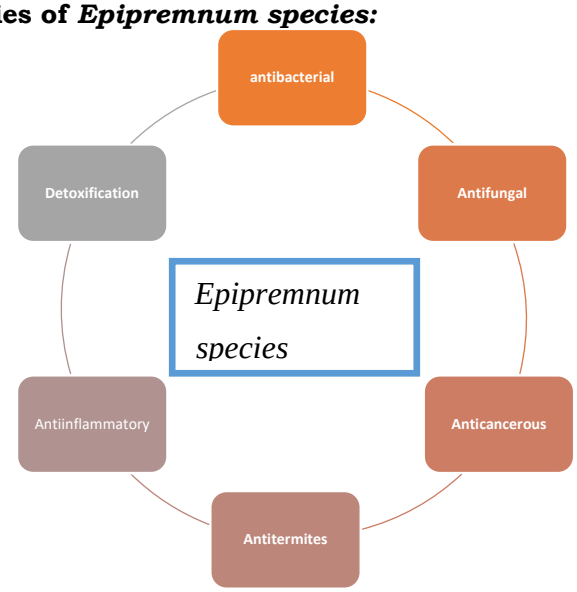
SR NO.	PLANT SPECIES	PLANT PART	SOLVENT	SECONDARY METABOLITES	AUTHOR
1	*Epipremnum aureum*	leaves	Hot methanolic extract	Alkaloids, Flavonoids, Cardiac-Glycosides Deoxy sugars Tannins Phenolic-compounds Steroids Proteins Reducing sugars	Rita Himanshu Mehta *et al.*,2013
2	*Epipremnumaureum*	leaves	Cold methanolic extract	Alkaloids Flavonoids Tannins Phenolic-compounds Proteins Reducing-sugars	Rita Himanshu Mehta *et al.*,2013
3	*Epipremnum aureum*	leaves	Ethanol	Alkaloids Flavonoids Glycosides Sterols Terpinoids Tannins Phytosterols	Sreemoy kanti Das *et al.*, 2015
4	*Epipremnum aureum*	leaves	Acetone	Alkaloids Flavonoids Glycosides Terpinoids Fixed oils and fats	Sreemoy Kanti Das *et al.*,2015

5	*Epipremnum aureum*	leaves	Chloroform	Alkaloids Flavonoids Glycosides Fixed oils and fats	Sreemoy Kanti Das *et al.*,2015

Table-2 Important reported Phytochemicals

SR NO.	Explant	Phytochemicals	Author
1	Leaves	Tannins, Cardiac glycosides, Alkaloids, Saponin, Steroidal terpenoids, Saponins, Saponin glycosides, phenol, Anthraquinones	Srivastava *et al.,* 2011
2	Roots	Tannins,Cardiac- glycosides, Steroidal terpenoids, Saponins, Anthraquinones, Flavonoides, Alkaloids	Srivastava *et al.*,2011

3. Medicinal properties of *Epipremnum species:*



Extract of various parts such as leaves, roots of E.aureum used as medicine for the treatment of different diseases.

Anti-bacterial and Anti-fungal activity:

Differentextract of solvent of *E.aureum* leaves and roots disclose anti-bacterial and anti-fungal activity against various microorganisms. Leaf extract was prepared in methanol *E.aureum* showed Antibacterial activity against *Escherichia coli* and *staphylococcus aureus*. Leaf extract was prepared in methanol *E.aureum* showed antifungal activity against *candida albicans*. When aerial root extract was prepared in ethyl *Raphidophora aureum* showed anti-bacterial and anti-fungal activity. Extract of *E,aureum* in different solvent such as Ethanol, Acetone and petroleum ether shows antibacterial activity against *S.aureus* and *E.coli.(*Mehta *et al.*,2015*)*

Anti-inflammation activity:

Aerial parts of Epipremnum pinnatum showed anti-inflammatory activity in rats(Wistar albino) and showed inhibition of rat paw oedema which is induced through carrageenan. This plant also shows analgesic effects and anti-lipid peroxidation effect.(Srivastava *et al.*,2015)

Anti-termite activity:

Every part of *Epipremnum aureum* plant was more potent according to early research. Specially root extract in ethanol solvent was highly potent. Ethanol extract shows

Approximately 96 to 100% anti-termite activity. Alkaloids isolated from *E.aureum* to show the in vitro antitermite effect aginst *Odontotermes* Indian white termites. Compared to stem and roots alkaloids isolated from leaves show highest mortality rate. Thus helpful in development of herbal formulations and used in to overcome termiticides borne problems.(Srivastava *et al.*,2015)

Cinnamic acid and quercetin dehydrates are more commonly present in leaf and root explants. In root explants p-coumeric acid, caffeic acid, and sinnapic acid are identified.(Ravi Shankar *et al.,* 2011)

Anti-cancer activity:

E.pinnatum Extract was prepared in chloroform solvent showed notable growth inhibition aginst T-47D carcinoma cells of breast. Cell death mechanism indicate that the extract educe both non-apoptotic and apoptotic cell deaths.(Srivastava *et al.,* 2011)

Anti-oxidation activity:

Antioxidant activity testing of Aerial root extract prepared in different solvent of *pothos aurea* interwined over on Areca catechu and *Lawsonia inermis* carried out by radical scavenging assay 1, 1-diphenyl-2-picryl hydrazyl (DPPH) and reducing test show greater antioxidant properties of the extract.(Mehta *et al.,* 2013*)*

Leaves and aerial roots extract of *Epipremnum aureum* also have its antioxidative properties. Superoxide dismutase (SOD), Peroxidase (PX), and catalase (CAT) activity of leaf extract show positive result. This activity have also been used for industrial application and in pharmaceutical actions.(Srivastava *et al.*, 2015)

Detoxification:

Epipremnum aureum is the most significant plant in removing carbon monoxide and benzene. Removal of air pollutant potential of E.aureum has been exposed, leaf surface absorb nicotine without entering in mesophyll and it is taken through roots.*E.aureum* has detoxification properties for removing formaldehyde and nicotine. This property used for indoor air purification through self-regenerating bio-filter system.(Anju Meshram *et al.,* 2015)

CONCLUSION

Epipremnum aureum is multipurpose plant. All the parts of the plant have various types of secondary metabolites which have different types of medicinal properties like antibacterial, antifungal, anti-inflammatory, anticancer, anti-termite activity. With all the research and data available it can be said that this plant is highly valuable and can be further explored for its medicinal value.

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