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A REVIEW ON ANNONA SQUAMOSA

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ABSTRACT

Annona squamosa linn is a multipurpose tree with edible fruits and is a source of medicinal and industrial purpose. Commonly known as custard apple or sugar apple in English, Sitaphal in Hindi is a native of west indies and is now cultivated throughout India, mainly for its edible fruit. The Preliminary Phytochemical studies revealed for the presence of Alkaloids, Carbohydrates, Proteins, Amino acids, Fixed oils, and Phenolic compounds. It has been used Traditionally in Diarrhea, Dysentery, cold, as Abortifacient, Insecticidal drug etc., so would be suitable to evaluate the drug .This plant was reputed to contain several medicinal properties and the plant posses Analgesic activity, Anti inflammatory, Anti microbial, Anti oxidant, Anti convulsant activity, Anti Head lice activity, Antilipidimic, Anti ulcer, Anti tumors, Anti diabetic activity, Insecticidal etc.

KEYWORDS: *Annona squamosa* **,** custard apple Abortifacient, Dysentery, Antilipidimic activity.

INTRODUCTION

Annona squamosa linn is a multipurpose tree with edible fruits and is a source of medicinal and industrial purpose. Commonly known as custard apple or sugar apple in English, Sitaphal in Hindi is a native of west indies and is now cultivated throughout India, mainly for its edible fruit.[1]

This plant was reputed to contain several medicinal properties and the plant posses Analgesic activity, Anti inflammatory, Anti microbial, Anti oxidant, Anti convulsant activity, Anti Headlice activity, Anti lipidimic, Anti ulcer, Anti tumour, Anti diabetic activity, Insecticidal etc.

The Preliminary Phytochemicalstudies revealed for the presence of Alkaloids, Carbohydrates, Proteins, Amino acids, Fixed oils, and Phenolic compounds. It has been used Traditionally in Diarrhea, Dysentery, cold, as Abortifacient, Insecticidal drug etc., so would be suitable to evaluate the drug.[2]

PLANT PROFILE

SCIENTIFIC CLASSIFIACTION

KINGDOM	Plantae
CLADE	Angiosperms
ORDER	Magnoliales
FAMILY	Annonaceae
GENUS	Annona
SPECIES	Squamosa

Synonym

custard apple, sugar apple.[2]

Biological source

It is a small, well branched tree or shrub from the family Annonaceae that bears edible fruits called sugar apple.

Geographical source

It is a native of West Indies and is now cultivated throughtout India.

Macroscopical characters

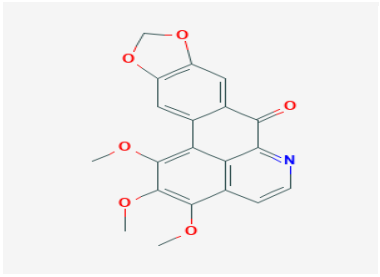
CHARACTERS	SEEDS	LEAVES	FRUITS
COLOUR	Black	Green	Greenishoutside Whitishpulpy outside
ODOUR	Odorless	Characteristics	Sweetish
TASTE	Tasteless	Bitter	Sweetish

Traditional Uses

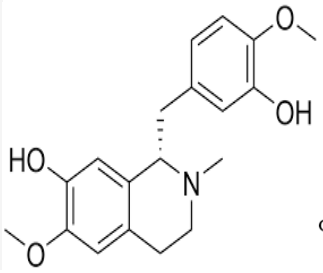
*Leaves are used in a decoction to treat Dysentery and Urinary Tract Infections. They are also crushed and applied to wounds. Seeds were mainly used to treat various digestive disorders. It is used as insecticidal agent. It is used in the treatment of lung cancer. Seeds have been used as folk medicines. Bark used to stop diarrhea in children and adults. Fruits are used to make hair tonic. Leaves decoction is used in the treatment of cold and cough.

Chemical constituents

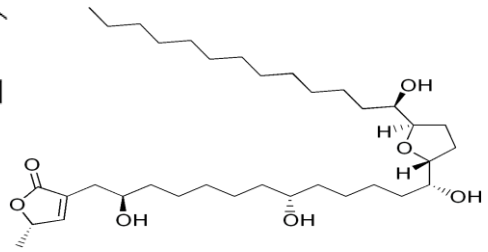
It consists of Alkaloids, Flavonoids, Saponins, Tannins, Carbohydrates, Proteins, Phenolic compounds, phytosterols and Amino acids. The diterpenoid alkaloid is the most abundant alkaloid in the root.Other constituents include Cyclosquamosa A, cyclosquamosa B, Cycosquamosa G, Squamtin, Annosqamosin and Annonacin. Also include the alkaloids Oxophoebine, Reticuline, Isocorydine and Methyl corydaldine and the flavonoid Quercetin-3-O-glucoside. It contain Isomerichydroxylketones from leaf, Acetogenin, Samaquasine, Annonacin and Annonastatin from seeds, Acetogenin, Squamone from bark.[3]



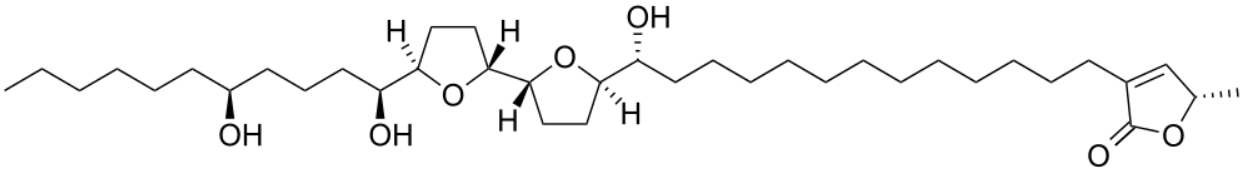
Oxophoebine



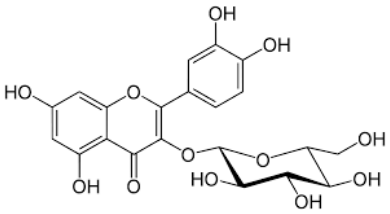
Reticuline



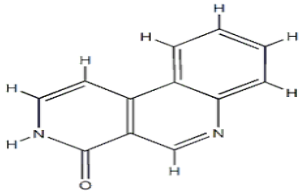
Acetogenin



Annonacin



Isoquercetin



Samoquasine

It contain 28% sugar in which sucrose 25.3%, dextrose 5.05% and laevulose 0.04%.The analysis of leaf yield 59 compounds.

PHARMACOLOGICAL ACTIVITIES

ANTI TUMOUR ACTIVITY

Aquous extract of Annona Squamosa seeds possessed significant Anti tumour activity in vivo against AD-5 tumour.

ANTI DIABETIC ACTIVITY

Anti diabetic activity of Annona Squamosa root extract in STZ-induced hyperglacemia in rats.SIZ induced diabetes mellitus and insulin deficiency lead to increased blood glucose level.It has been reported that using medicinal plant extract to treat STZ induced diabetic rats results in activation of β –cells and insulinogenic effects.[5]

ANTI BACTERIAL ACTIVITY

Extracts of Annonasquamosa inhibit the growth of all test strains, except salmonellatyphimurium.

Bacillussubtilis, Staphylococcusepidermidis, Staphylococ- cusaureus, and Vibrio alginolyticus were the most sensitive bacterial strains.Annona Squamosa had strong antibacterial activity against these bacterial strains.

HEPATOPROTECTIVE

Annona Squamosa exerted hepatoprotective effect and the plant extract could be an effective remedial for chemical-induced hepatic damage.

INSECTICIDAL

Annona Squamosa extract showed potent activity against sitophilus oryzae pest.[The reason of using natural insecticides is that these are active or highly acceptable levels,biodegradable and do not leave toxic residues while the commonly used phosphorus and chlorinated insecticides contaminate the environment.[4]

VASORELAXANT ACTI VITY

Vasorelaxant effect by cyclosuamosin B might be attributed mainly to inhibition of Ca+2 influx from extracellular space through voltage dependent calcium channels.

ANTIVIRAL ACTIVITY

Annona squamosa linn were investigated for their activity against HIV virus. The 16β, 17, dihydroxyent kauran -19-oic acid showed significant activity against HIV replication in H9 lymphocytic cells.

ANTI OXIDANTS

Annona squamosa leaves extract as a source of antioxidants that can be used to prevent food spoilage.Due to the phenolic compound present in Annona Squamosa they were found to be major contributors for their antioxidant activitie.[6]

ANALGESIC ACTIVITY

Annona squamosa exhibits Analgesic properties against thermal and chemical stimuli as evidenced by the significant reduction in the number of acetic acid – induced writing and increase in the reaction time by the thermal stimuli.

ANTI INFLAMMATORY ACTIVITY

Annona squamosa exhibited anti inflammatory properties against carrageenan and histamine induced oedema.

ANTI HEAD LICE

The extract of custard apple seeds in coconut oil at the ratio of 1:2 can kill 98% of head lice within two hours.

ANTI CONVULSANT

Anti convulsant effect of Annona squamosa leaves against PTZ and PTX induced convulsion may be mediated, at least partly, through $GABA_A$-benzodiazepine receptor complex.[7]

ANTIHELMINTIC ACTIVITY

The Anthelmintic activities of Annona squamosa and its leaf extract have been studied using various models.The Hexane, Ethyl acetate, Ethanolic extracts of crude drug at different concentration were tested which involve determination of paralysis time and death time.

ANTI MALARIAL ACTIVITY

In the recent studies, on Annona Squamosa all compounds showed moderate activity against a chloroquine-sensitive strain and a chloroquine – resistant strain of plasmodium falcifarum.

ANTI GENOTOXIC EFECT

Studies on the Genotoxicity of Annona squamosa has shown that the plant extract treatment significantly altered serum enzyme levels in oxidative stress conditions.

USES

It is used to control Blood pressure. It is also protect Heart from Cardiac diseases. Used as insecticide. Good source of fire wood. Bark is used locally for cordage. It is used to make ice creams, jellies etc. It is used to treat asthma. Excellent for diabetics.It is used to prevent Heart attacks. Also used for healthy hair and eye sight.[10&11]

CONCLUSION

This Annano squamosa was reputed to contain several medicinal properties and it posses Analgesic activity, Anti inflammatory, Anti microbial, Anti oxidant, Anti convulsant activity, Anti Headlice activity, Anti lipidimic, Anti ulcer, Anti tumour, Anti diabetic activity, Insecticidal etc. Further evaluation need to carried out on A. squamosa in order to explore concealed areas and their practical clinical application, which can be used for the welfare of the mankind.

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