A REVIEW ON ANTI-HEADLICE ACTIVITY OF ANNONA SQUAMOSA SEED EXTRACTS

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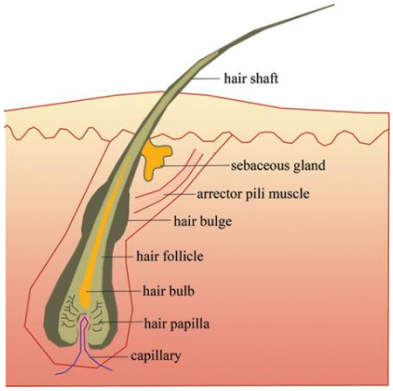
Abstract

ANNONA SQUMOSA is also known as custard apple and sitaphal. It has known active ingredient that kills Hadlice. Various parts of ANNONA SQUMOSA are use or different purpose, such as the seed extract being applie as a cream, oil, powder to kill Headlice and other parts likes leaves and bark being utilized for treating arrange of element. The present study focused on efficacy and stability of seed extract formulated as a cream.

INTRODUCTION

ANNONA SQUAMOSA is also known as custard apple, sugar apple and sitaphal. it has active ingredient that kills HEADLICE (pediculus humanus capitis). Various parts of ANNONA SQUAMOSA are use for different purposes such as the seed extract being applied as a cream, oil ,powder to kill headlice and other parts like leaves and bark being utilized for treating a range of ailment .The present study focused on efficacy and stability of seed extract formulated as a cream. sugar apple is commonly found in forest and it cultivated throughout the world such as west india, America and brazil. Every parts of plant has medicinal properties. A. squamosa leaves contain actie substances such as flavonoids, glycosides, phenolics, tannins, phytosterols, alkaloids and saponins. This compounds show therapeutic effects such as antioxidants, antiviral, anticancer, antimicrobial, antimelanogenic and anti-inflammatory activities. Ayurveda describes that fruit are good hair tonic, increase blood and muscle strength. In this review we summarize phytochemical, qualitative and quantitative analysis and pharmacology of ANNONA SQUAMOSA Linn.

Structure and Function



The scalp serves as a physical barrier to protect the cranial vault from physical trauma and potential pathogens that can cause infection.[1] In addition to its physical defenses, the scalp is important aesthetically. Hair grows on the skin of the scalp to not only aid in heat conservation

but to also plays a role in an individual's appearance and sexual signaling. The first layer is the skin, which is thick and contains hair follicles and sebaceous glands.

The hair follicles can extend into the dense connective tissue layer, where the nerves, lymphatics, and the vascular supply of the scalp reside. The galea aponeurotica, also called the epicranial aponeurosis, is a strong and immobile connective tissue layer continuous with the occipitofrontalis muscle. It is firmly attached to the subcutaneous dense connective tissue layer and serves to prevent stretching of the scalp, especially during surgery, which beneficially prevents complications. The loose connective tissue is important to the mobility of the scalp.

About Head Lice:

Key points

- Head lice are parasitic insects that usually live on your scalp.
- Symptoms include itching, tickling, or sores on your scalp.
- Both prescription and over-the-counter medications treat head lice infestations.

Head lice, or pediculus humanus capitis, are parasitic insect that feed on human blood. You can find them mostly on your head. Peope with head lice may have symtoms, particulary with a first infestation or when an infestation is light. Itching (pruritus) is the most common symptom of head lice infestation. It is caused by an allergic reaction to louse bites. It may take four to six weeks for itching to appear the first time a person has head lice.

Other symptoms may include the following:

- A tickling feeling or a sensation of something moving in the hair
- Irritability and sleeplessness
- Sores on the head caused by scratching, which can sometimes become infected with bacteria normally found on your skin
- Head lice do not transmit any disease and therefore are not considered a health hazard.

PLANT DESCRIPTION:

Synonyms: Sharifa (hindi), Sitappalam (tamil), Sitaphala (kannada), Sita phalamu (telugu).

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Magnoliales

Family: Annonaceae

Genus: Annona L.

Species: Annona squamosa

Biological source: Annona squamosa is a small and well branched three belonging to Annonaceae that gives edible fruits known as sugar apple.

BOTANICAL DESCRIPTION:

The height of tree is 6 m. leaves are oblong-lanceolate, subacute, globous above where lateral nerves 8 to 11 pairs, petioles are 12 mm long. Sepals are minute, triangular and pubescent. Fruits are globose with aglaucous bloom on the surface, occurs yellowish-green when ripe and breaks easily. Seeds are smooth and brownish-bark. A. squamosa beings to bear fruit when it is 3-4 years old. In India, usually A. squamosa bear fruit around july-august. Custard apple has a sweet taste like sugar, their ripe fruit is indicated by the sweet aroma of the fruit. Generally 30-40 seeds can be found in one fruit.

VARIOUS USAGE OF PLANT PARTS:

Leaves- When crushed to powder, leaves can be used to eliminate cattle lice and to extract guinea worms from soil. It is only frequently used in perfumery.

Hysteria, anal prolapse, and fainting spells can always be treated using sitaphal leaves (sudden and temporary lose of consciousness).

Fruit-Fruits from the Annona squamosa are quite healthy, and a tumor can be treated with crushed ripe fruit mixed with salt. Formulas work as an expectorant, astringent, and a cooling agent, and they also treat anemia and searing pain..

Bark-Strongly astringent and poisonous, bark. Bark extract has been used for decades to stop diarrhea, and a decoction of bark has been used to provide a toxic anti-cancer.

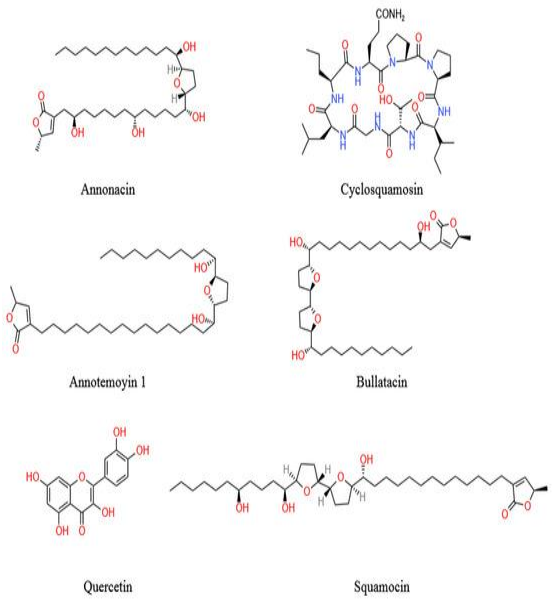
The seeds of Annona squamosa are used as fish poison and have hypotensive and anti-inflammatory properties. Additionally, the seed extract exhibits RBC hemolysis and anti-tumor

Seeds-analgesic action. If seeds are combined with gramme flour, they can be used to remove lice from hair, and seeds also make an excellent hair wash.

Root-Annona squamosa roots are used as a purgative to treat diabetes, spinal marrow disease, and diarrhea.

Tree-A useful and essential source of firewood is the Annona squamosa tree. Insects that excrete milk need trees as a host. As attractive trees, trees flourish in gardens.

Chemical constituent of ANNONA SQUAMOSA:



Structure of important compounds found in seeds of A. SQUAMOSA.

PLAN OF WORK:

1. Collection of annona squamosa ripe fruits.
2. Separation and collection of annona squamosa seeds.
3. Extraction of A. squamosa seeds oil.
4. **Methodology:**

1. **Preparation of the Seed Extract**
2. **Drying and Powdering:** Fresh seeds are washed, oven-dried (e.g., at 55°C for 24 hours), and then ground into a fine powder.

- **Maceration and Extraction:**The powder is macerated (soaked) in an organic solvent, typically petroleum ether or hexane, at room temperature (around 25°C) for a period (e.g., 2 days).
- **Filtration and Concentration:** The mixture is filtered, and the solvent is removed from the filtrate using an evaporator or water bath until a crude, constant-weight extract is obtained.

3. **Preparation of the Cream (O/W Emulsion)**

- **Oil Phase Preparation:** The oil-soluble excipients (Vaseline, mineral oil, etc.) are combined and heated above a water bath until melted and homogeneous.
- **Water Phase Preparation:** The water-soluble excipients (water, TEA, gums, etc.) are heated separately to approximately 70°C.
- **Emulsification:** The water phase is slowly added to the oil phase while mixing vigorously to form an emulsion. The mixture is then cooled.
- **Incorporation of Extract:** The crude A. squamosa seed extract is then incorporated into the cooled cream base to achieve the target concentration (e.g., 20% w/w).

CONCLUSION:

Many people suffer from hair disorders such as dandruff,alopecia,dermatitis,The need for hair treatment with the herb is on the rise and it is strongly believed that these products are safe and free from side effects. The present review focus on the use of the herbal ingredients in place of synthetic ingredients as we have to use custard apple seeds as an main ingredient along with other herbal plant extracts to provide a conditioning effects.

REFERENCE:

1. *Tiangda et al. (2000): Anti-headlice activity of a preparation of Annona squamosa seed extract*
2. *IJRPR (2021): A Review on Custard Apple Having Anti-Headlice Property*
3. *MDPI (2022): Seed Waste from Custard Apple (Annona squamosa L.): A Comprehensive Insight*
4. *Shehata et al. (2023): Pharmacological properties of Annona squamosa*
5. *Yao et al. (2019): Bioactive compounds from Annona squamosa*
6. *Agrawal et al. (2012): Phytochemical and HPTLC studies of various extracts, highlighting the presence of active constituents.*
7. *Intaranongpai et al. (2006): Studied the anti-head lice effect of Annona squamosa seeds.*
8. *Kosalge and Fursule (2009): In-vitro screening of pediculicidal activity of ethanolic seed extracts, comparing A. squamosa to Azadirachta indica.*
9. *Arabit et al. (2011) (as cited by Cutamora et al., 2019): Research on using Annona squamosa leaves extract as an alternative to commercial synthetic pesticides, finding comparable efficacy.*
10. *Boonyaprapasara (1998) (as cited by Thavara et al., 2004): Earlier work on the traditional use and potential of A. squamosa for lice control.*
11. *Thavara et al. (2004): Published on the anti-head lice activity of a A. squamosa seed extract prepared as a cream, demonstrating high efficacy and stability over 12 months.*
12. *Leatemia and Isman (2004) (as cited by Thavara et al., 2004): Noted that aqueous seed extracts were toxic to various insect pests, supporting broad insecticidal activity.*
13. *Champapong et al. (2011): Focused on isolating the active compounds, identifying a triglyceride with one oleate ester as a key active agent with rapid killing time.*
14. *Suresh et al. (2006) (as cited by Cutamora et al., 2019): Noted that different parts of the plant are used in folkloric medicine for various diseases, including anti-lice effects.*
15. *Pathak et al. (2025): A recent study focusing on the phytochemical analysis and evaluation of pediculicidal activity of several herbal plants including A.*