

Anti lice oil from  
guyabano (annona  
muricata l.) essay  
sample



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Soursop, also known as guyabano in the Philippines is prominent three times a year; every summer, rainy season and even during Christmas. This kind of fruit is eaten but the tendency of some people is throw away the seeds of it. There are instances that these seeds are used to plant such trees. Some people think that these are useless though it can be used as a treatment for lice since it contains resin that irritates lice. Every summer, some people especially teenagers, experience having lice on their head. These pests live on their head and gives itchy feeling that can irritate the person. Having lice is a problem experienced by the children, teenagers and sometimes, even adults. How will the seed of guyabano be useful to man and how will lice be killed/lessen, lead the researchers to conduct the research study and experiment?

General Statement:

The main purpose of the study is to make Anti-lice oil from guyabano (*Annona muricata* L.) seed extract. Specific Questions:

1. Is it possible to make an anti-lice oil form guyabano (*Annona muricata* L.) seed extract? 2. Can the anti-lice oil from guyabano (*Annona muricata* L.) seed extract eliminate/lessen the production of head lice? 3. Can the anti-lice oil from guyabano (*Annona muricata* L.) seed extract be effective?

Statement of the Hypotheses

1. It is possible to make an anti-lice oil form guyabano (*Annona muricata* L.) seed extract. 2. The anti-lice oil from guyabano (*Annona muricata* L.) seed extract can eliminate/lessen the production of head lice. 3. The anti-lice oil from guyabano (*Annona muricata* L.) can be effective.

## Significance of the Study

The study will be important to the following:

\* To the environment, this will help lessen those wastes in a way that some guyabano seeds are mixed with non-biodegradable wastes. \* To the people concern, which has lice, this will serve as treatment, for their problems specifically in their hair. Another is that they can save money because either people at home can do this alone, especially to the students who have head lice. This will help boost their performance at school in a way that they will gain confidence and they will not be bothered by these head lice.

## Scopes and Delimitations

This study aims to make an anti-lice oil from guyabano (*Annona muricata* L.) seed extract and to determine the effectiveness of the product against lice. Guyabano seeds weighing 20 grams will be gathered within the vicinity of Palingon and Banlic as well as the mineral oil that the researchers will be using to make an anti-lice oil from guyabano (*Annona muricata* L.) seed extract. The researchers will be limiting the population to 5 respondents exclusively for girls with lice only. The selected respondents in Palingon and Banlic specifically in Banlic Elementary School and Palingon Elementary School will be testing the anti-lice oil in three days. The researchers will conduct a survey in which the five respondents will approve or disapprove the product. The study limits itself to guyabano seeds and its effectiveness from being an anti-lice only and not in its different parts and its side effects.

## Definition of Terms

The following terms are defined either conceptually or operationally for better understanding of the study.

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- \* Annonaceous acetogenins
- \* Chemicals found only in the Annonaceae family which are anti-parasitical
- \* Head Lice (sing. Louse)
- \* A wingless tiny insects that live on the skin covering the top of the head called scalp
- \* Mineral Oil
- \* Oil from minerals; includes petroleum, baby oil, cosmetic oils and etc.
- \* Resin
- \* Thickened and sticky substance that oozes from certain plants that can irritate lice

## CHAPTER II

### REVIEW OF RELATED LITERATURE AND STUDIES

#### A. Review of Related Literature

##### Guyabano(*Annona muricata* Linnaeus)

Habit is a small tree or shrub, evergreen/deciduous, 4 m to 9 m high, or even 15 m. The stem ramifies near its base. This stem emits an ugly odor when crushed. Its branches are cylindrical, wrinkled, rough, reddish-coffee-colored, and with numerous lenticels; young branches are ferruginous-sericeous. The external bark is brown-colored, more or less smooth; the internal one is pink colored and insipid. Fruits are syncarpic (constituted by conrescence of carpels and receptacle), ovoid, ovoid-ellipsoid, or oblong-ovoid, 15 cm to 20 cm long and even 30 cm, 10 cm to 15 cm wide, fleshy, dark-green, with flexible and curve aculea on the surface. The pulp is white, cotton-like, juicy, and bitter. Numerous seeds (from 30 to 200) are present in each fruit,

although only one is present in each carpel. Seeds are 1. 25 cm to 2 cm long, <https://assignbuster.com/anti-lice-oil-from-guyabano-annona-muricata-l-essay-sample/>

oval or oblovoid, flattened, black, and smooth. Seed cover is dark and bright. Frequently, these fruits reach up to 4 kg in weight or more. There exist some varieties that have no seeds, although they tend to be fibrous. (Source: <http://www.family-content.com/health/herbs/graviola>)

### Guyabano Fruit

Guyabano are good in checking insect pests. Pulverizing the guyabano seeds and mixing it with soap and water can be used as an effective spray against caterpillars, armyworms and leafhoppers on plants. The petroleum ether and chloroform extracts of guyabano are toxic to black carpet beetle larvae. The seed oil kills head lice. (Source: <http://www.agribusinessweek.com/guyabano-the-fruit-that-heals>)

### Chemical constituents

The extract also yielded a dark-green resin containing: myricyl alcohol, sitosterol, fatty acids (oleic, linolic, and stearic acids, together with a higher fatty acid, possibly lignoceric acid) and a diphidric alcohol, anonol. Bark yielded an amorphous alkaloid, found to be poisonous, causing tetanus-like convulsions when injected to mice. Seed contains a non-poisonous alkaloid. Recent studies isolated three acetogenins: annonacin, annonacin A and annomuricin A.

### Properties

Fruit is reported antiscorbutic and astringent. Seeds are emetic. Recent studies suggest a potential for antiviral, anti-parasitic and anti-cancer properties.

## Folkloric

Unripe fruit are used for dysentery. Seeds and green fruit are astringent.

Decoction of leaves used of head lice and bedbugs. Pulverized seeds and seed oil effective for head lice. (Source: <http://www.stuartxexchange.org/Guyabano.html>)

Plant Chemicals

Many active compounds and chemicals have been found in graviola, as scientists have been studying its properties since the 1940s. Most of the research on graviola focuses on a novel set of chemicals called Annonaceous acetogenins. Graviola produces these natural compounds in its leaf and stem, bark, and fruit seeds. Three separate research groups have confirmed that these chemicals have significant anti-tumorous properties and selective toxicity against various types of cancer cells (without harming healthy cells) publishing eight clinical studies on their findings. Many of the acetogenins have demonstrated selective toxicity to tumor cells at very low dosages—as little as 1 part per million. Four studies were published in 1998 which further specify the chemicals and acetogenins in graviola which are demonstrating the strongest anti-cancerous, anti-tumorous, and antiviral properties. In a 1997 clinical study, novel alkaloids found in graviola fruit exhibited anti-depressive effects in animals.

Annonaceous acetogenins are only found in the Annonaceae family (to which graviola belongs). These chemicals in general have been documented with anti-tumorous, anti-parasitic, insecticidal, and antimicrobial activities. Mode of action studies in three separate laboratories have recently determined that these acetogenins are superb inhibitors of enzyme processes that are only found in the membranes of cancerous tumor cells. This is why they are <https://assignbuster.com/anti-lice-oil-from-guyabano-annona-muricata-l-essay-sample/>

toxic to cancer cells but have no toxicity to healthy cells. Purdue University, in West Lafayette, Indiana, has conducted a great deal of the research on the acetogenins, much of which has been funded by The National Cancer Institute and/or the National Institute of Health (NIH). Thus far, Purdue University and/or its staff have filed at least nine U. S. and/or international patents on their work around the anti-tumorous and insecticidal properties and uses of these acetogenins. (Source: <http://rainforest-database.com/plants/graviola.htm>)

#### Traditional Medicinal Use of Guyabano

Concoction prepared from pulverized guyabano seeds used as skin astringent, treat muscle spasms, and treat dysentery, to purge parasites such as bedbugs and head lice. (Source: <http://www.medicalhealthguide.com/herb/guyabano.htm>)

#### Head lice (*Pediculus humanus capitis*)

The human pediculosis is a parasitic infection that occurred in the developed countries and most especially in the developing countries like the Philippines. *Pediculus humanus capitis* is the source of this infection, that usually known as head louse. It was found that the oldest fossil of pediculosis was aged for 10, 000 years. According to Buxton (1946) the head lice has great medical importance and appear to be the greatest nuisance, particularly among school children, where their presence cause itching, different skin reaction, and secondary infections. Head louse has the ability to crawl deep into the hair to the scalp for 6 to 30 cm. in one minute. It has the ability to make itself camouflage according to the hair and scalp of the person. They depend on the warmth of the heads and suck the blood of the <https://assignbuster.com/anti-lice-oil-from-guyabano-annona-muricata-l-essay-sample/>

infected person. When the louse was out of the head of an infected person, it will only survive for one to two days. Louse doesn't have the ability to crawl into a glass and plastics, they were transmitted through the combs and soft fabrics especially towels wherein they lay eggs once they reach the fabric. Head lice can plague people from all walks of life, but they obviously prefer children.

There is a shampoo, however, that exploits the anatomy of lice to put an end to the little bloodsuckers, eliminating lice infestations within about two weeks. After that, those who are still scratching their heads are only doing so as a displacement activity while thinking. (Source: [http://magazine.merck.de/en/LifeandAssiatance/lice/Apaisyl.html? wt. srch= 1](http://magazine.merck.de/en/LifeandAssiatance/lice/Apaisyl.html?wt.srch=1)) Adult head lice are roughly two to three millimeters long. Head lice infest the head and neck and attach their eggs to the base of the hair shaft. Lice move by crawling; they cannot hop or fly. Head lice infestation, or pediculosis, is spread most commonly by close person-to-person contact. Dogs, cats, and other pests do not play a role in the transmission of human lice. Both over-the-counter and prescription medications are available for treatment of head lice infestations. (Source: <http://www.cdc.gov/parasites/lice/index.html>)

In the United States, infestation with head lice (*P. humanus capitis*) is most common among preschool and elementary school-age children and their household members and caretakers. Head lice are not known to transmit disease; however, secondary bacterial infection of the skin resulting from scratching can occur with any lice infestation. Head lice are mainly spread by direct contact with the hair of an infected person. The most common way to get head lice are by head to head contact with a person who already has



head lice. Such contact can be common among children during play at school, home or elsewhere.

The transmission could occur by: wearing clothing such as hats, scarves, coats, sports uniforms or hair ribbons worn by an infected person; using infested combs, brushes or towels, or lying on a bed, couch, pillow, carpet, or stuffed animal that has recently been in contact with an infected person.

Reliable data on how many people get head lice each year in the U. S. are not available; however, an estimated 6 million to 12 million infestations occur each year in the U. S. among the children 3 to 11 years of age. Some students suggest that girls get head lice more often than boys, probably due to more frequent head to head contact. (Source: <http://www.cdc.gov/parasites/lice/head/epi.html>)

## B. Related studies

Annonaceous acetogenins: recent progress

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## Abstract

The Annonaceous acetogenins are promising new anti-tumor and pesticidal <https://assignbuster.com/anti-lice-oil-from-guyabano-annona-muricata-l-essay-sample/>

agents that are found only in the plant family of Annonaceae. Chemically they are derivative of long chain fatty acids. Biologically, they exhibit their potent bioactivities through depletion of ATP levels via inhibiting the NADH oxidase of plasma membranes of tumor cells. Thus, they thwart ATP-driven resistance mechanisms. This review presents the progress made in the chemistry, biology, and development of these compounds since December 1995. (Source: <http://www.ncbi.nlm.nih.gov/sites/entrez?cmd=PubMed&listuids=1009671&dopt=AbstractPlus#>)

Phytochemical and Pharmacological Review on *Annona squamosa* Linne Anti-head lice activity of *Annona squamosa* Linne (fam. anonaceae) International Journal of Research in Pharmaceutical and Biomedical Sciences Review Paper

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#### Abstract

The past study focused on the separation and identification of the active compounds against head lice from the hexane extract of sugar apple (*Annona squamosa* L.) seed. Chromatographic and spectroscopic techniques revealed that two major compounds of the hexane seed extract were oleic acid and triglyceride with one oleate ester. The yields of these compounds were 13.25% and 7.74% dry weight, respectively. The compounds were tested in vitro against head lice, comparing to the crude hexane extract diluted with coco nut oil 1:1. These compounds were found to kill all tested head lice in 49, 11, and 30 minutes, respectively. The triglyceride ester can

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be used as a marker for quantitative analysis of the active compound for quality control of the raw material *A. squamosa* seed and its extract. This first finding will be useful for the quantity assessment and the chemical stability of the anti-head lice preparation from this plant.

(Source: <http://www.ijrpbsonline.com/files/RV2.pdf>)

#### Anti-head lice Effect of *Annona squamosa* L. Seeds

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#### Abstract

The present study focused on the separation and identification of the active compounds against head lice from the hexane extract of *Annonas quamosa* L. seed. Chromatographic and spectroscopic techniques revealed that two major compounds of the hexane seed extract were oleic acid and triglyceride with one oleate ester. The yields of these compounds were 13.25% and 7.74% dry weight, respectively. The compounds were tested in vitro against head lice, comparing to the crude hexane extract diluted with coco nut oil 1:1. These compounds were found to kill all tested head lice in 49, 11, and 30 minutes, respectively. The triglyceride ester can be used as a marker for quantitative analysis of the active compound for quality control of the raw material *A. squamosa* seed and its extract. This first finding will be useful for the quantity assessment and the chemical stability of the anti-head lice preparation from this plant.

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## CHAPTER III

### METHODOLOGY

Materials and methods are presented in this section. The researchers will compare the results and observations of the respondents through descriptive analyses.

#### A. Gathering of Materials

The researchers will gather the materials needed in making anti-lice oil. The guyabano seeds will be collected from eaten guyabano fruit weighing 20 grams of it. The oil that will be used is a mineral oil. The researchers will also prepare some laboratory apparatuses such as mortar and pestle for pounding the seeds, graduated cylinder for measuring the amount of oil and weighing scale to measure the amount of seeds. A filter setup will be made to filter the oil from the seeds after boiling it. The filter setup will consist of the following materials: iron stand, iron ring, filter paper, funnel and beakers.

#### B. Production of Anti-lice Oil

The materials will be prepared. After preparing, the seeds will be pounded by the use of mortar and pestle. The pounded seeds will be mixed with the mineral oil and will be boiled until bubbles are formed. The mixture will be cooled for several minutes. After cooling it, the mixture will pass through a filter paper to filter those pounded seeds. The product then will be placed into a container.

#### C. Conducting a Survey

The researchers will be conducting an observation for three days within the vicinity of Banlic and Palingon Elementary School. Five elementary girl

students will be chosen to test the product. The researchers will ask first permission to the parents of the respondents. After the observation, the researchers will conduct a survey and then interpret the data.

### Survey Form

Name:

#### A. Initial Data

1. What is the brand of your shampoo?

(Anong brand ang gamit nyong shampoo?)

2. Amount of lice?

\* Few

\* Many

\* Too many

#### B. Observations

Record your observations in the following days.

(Pakitala ang mga pagbabagong nangyari sa mga sumusunod na araw.)

Day(araw)| Observations(Mga Pagbabago)|

First day(Unang araw)| |

Second day(Ikalawang araw)| |

Third day(Ikatlong araw)| |

#### C. Questionnaire

1. After using the product, is your lice gone?

(Pagkatapos gamitin ang langis, ang mga kuto ba ay nawala?)

\* Yes (Oo)

\* Some of it (Konti lang)

\* Many of it but there are few left (Marami ang natanggal pero may natira pa) \* No (Hindi)

2. Is the product effective?

(Ang langis ba ay nakakapagpatanggal ng mga kuto?)

\* Yes (Oo)

\* Yes, but not effective enough (Oo, pero hindi pa kasing galing ng iba)

\* No (Hindi)

## CHAPTER IV

### RESULTS AND DISCUSSION

The researchers collected the data after conducting a survey.

The following are the data and results' discussion for better understanding of the research process. Data Presentation

Table 1. Materials used to create anti-lice oil.

MATERIALS| WEIGHT/VOLUME|

Mineral oil| 80 ml|

Guyabano seeds(pounded)| 20 grams|

Table 1 details the materials used to create the anti-lice oil from guyabano seed extract. Twenty (20) grams of dried, pounded guyabano seeds was mixed with eighty (80) milliliters (ml) of mineral oil then boiled. Out of the materials listed, fifty (50) ml oil was created. The oil was divided into five and distributed to 5 respondents with ten (10) ml of oil each. The oil will be used by the selected respondents for three days.

Table 2. The summarized results of the three-day observation after applying 10 ml anti-lice oil each to five respondents. Day| Observation|

1| Nothing happened.|

2| The itchiness on the heads of the respondents was lessened and their hair became softer.| 3| The lice on the heads were lessened and some find their hair softer.|

The table 2 shows the summary of the daily observations of the respondents for 3 days. This tells that on the first day, nothing happened when they apply the oil on their head. On the second day, they experience less itchiness on their head and their head and their hair became softer. After the third day, the respondents comb their hair to see the effect of the oil in their head. They found out that the lice on their heads were lessened. Also, they find their hair softer than before.

Table 3. The results of the number of lice that are gone after applying the anti-lice oil for three days. No. of lice that are gone| No. of people|

Totally gone| 0|

Many of it are gone| 2|

Some of it are gone| 3|

None of it are gone| 0|

Total| 5|

Table 3 shows the number of lice gone after combing the hair on the third day. The researchers found out that 3 out of 5 respondents said that many of their lice were gone after 3 days. The other 2 said that only some of their lice were gone. Through this observation, it shows that there is a significant result in applying the anti-lice oil.

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Table 4. The results of the effectiveness of the anti-lice oil according to the five respondents. Effectiveness| No. of people|

Effective| 2|

Not effective| 3|

Total| 5|

Table 4 shows the results of the effectiveness of the anti-lice oil. The majority of the respondents said that the anti-lice oil is not effective enough and the minority said that the anti-lice oil is effective. It can be noted that 3 out of 5 respondents were not really convinced about the anti-lice oil. There is a difference between the respondents that are convinced and those who were not really convinced. It was also noted that none of the five respondents were convinced about the effectiveness of the anti-lice oil. It can be of value to find a way how to increase the effectiveness of the anti-lice oil.

## CHAPTER V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Head Lice, one of the problems among students, is a common parasite in humans. Many factors can cause this problem, including improper hygiene and lack of self-confidence. This infestation starts during a man's childhood. It is common among children especially in girls. Surveys were done and proved that these parasites have great impact in students in their studies. This fact made many of the researchers around the world to invent a product which can help to decrease this infestation.



The researchers conducted this study to make an anti-lice oil from guyabano (Anona muricata L.). This study aimed to make an effective product but do not cost so much. Different methods were done to make an effective anti-lice oil. The result of the tests showed that the product made was not really successful, but without any harm or side-effects to the hair and scalp.

After conducting the study, the researchers concluded that the anti-lice oil produced out of guyabano seeds helps lessen head lice but do not totally removes all of it. The researchers also conclude that there are no bad effects in using anti-lice oil from guyabano seed extract, since the respondents didn't stated any bad observation.

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