

Insecticidal property of acacia (samanea saman merill) seeds and bark against ter...



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The researchers would like to find out if the Acacia seeds and bark decoction is an effective alternative to the commercial pesticides in killing termites.

The use of Acacia seeds and bark as insecticide has killed several number of termites which destroy the foundations of establishments especially wooden houses and others. Using acacia seeds and bark extract, it can help households to lessen their duties on getting off termites time after time.

Gather all the materials that are needed in the study. First, the tripod should be placed above the Bunsen burner and there should be wire gauze on top of the tripod. Heat will be added to the beaker by placing it on the tripod and light the burner until the seed reaches its boiling point. pour the solution in a sprayer with the use of funnel that comes with a filter paper.

INTRODUCTION

I. Statement of the Problem

This research will try to find out whether Alkaloid which is the substance present in the bark and seeds of Acacia has the capacity of killing small insects like termites. And it also tries to find out if there is an effect to the organism where Acacia seeds and bark extract applied to. Specifically tries to answer the following questions: 1. Is there any significant effect of acacia seeds and bark extract insecticide to termites?

2. Is there any significant difference of acacia seeds and bark extract insecticide to the commercial insecticides?

II. Statement of Hypothesis

Null Hypothesis:

Ho1:

There is no significant effect of acacia seeds and bark extract insecticide to termites. Ho2:

There is no significant difference of acacia seeds and bark extract insecticide to the commercial insecticides.

III. Significance of the Study

The use of Acacia (*Samanea saman merill*) seeds and bark as insecticide has killed several number of termites which destroys the foundations of establishments especially wooden houses and others. Using Acacia seeds and bark extract, it can help households to lessen their duties of getting off termites time after time. They will not spend money for this insecticide because it is found anywhere in the environment. Acacia (*Samanea saman merill*) which is one of the abundant trees in our country with several species has different parts which can be used. Some of these are the bark and seeds. The barks, which have no use, can be another source of insecticide. It contains the substance Alkaloid as long as the seeds. This study is a big help for home owners who want to have houses which are free from termites. The researchers admits that only few now a days have houses made of wood because some people are now living in subdivisions where all the houses aren't made of wood and some are living in buildings. But still, there are ones who live in wooden houses like those who settled in the province.

IV. Scope and Limitation

This study is limited only on determining the effect of Acacia (*Samanea saman merill Merill*) seeds and bark extract as insecticide on termites.

This study is just an experiment. The researchers do not promise to have a successful project. They are not saying that their project will have a good result. They are only limited to use acacia seed and need to refrain from using other parts of the plant. There is a limitation in the use of materials and time management.

V. Definition of Terms

Insecticide- A chemical substance used to kill insects.

Acacia-Any of various often spiny trees or shrubs of the genus *Acacia* in the pea family, having alternate, compound leaves or leaves represented by flattened leafstalks and heads or spikes of small flowers.

Termites-Any of numerous pale-colored, usually soft-bodied social insects of the order Isopteran that live mostly in warm regions and many species of which feed on wood, often destroying trees and wooden structures. It is also called white ant.

Review of Related Literature

Acacia is a genus of many trees and shrubs that belong to the family of *Fabaceae*. The plants of these genus show characteristics like pod bearing with sap and leaves typically bearing large amount of tannins, and have thorns. The word *acacia* is derived from the word *akakia*, which is the name given by a Greek botanist. The name is derived from the Greek word *akis* means thorn. *Acacias* are also known by many other names; thorn trees, wattles, yellow fever acacia, whistling thorns and umbrella acacias. Here, are various acacia tree facts regarding its origin, types and its uses.

There are many types of acacia trees. These trees belong to the great family of *Leguminosae*, the pea and bean tribe. Some of the true acacia trees have thorns, but are hollowed out by the tribes of ants which protect the shrub

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from herbivorous animals. The African acacia has adapted in such a way that it prevent animals from eating its leaves. The acacia tree adaptations show that the tree has long and sharp thorns, and a symbiotic relationship with stinging ants. These ants live inside the acacia thorns which they have hollowed out, and feed on the nectar produced by the tree. If an animal takes a bit of the leaves, it will also get angry stinging ants with it. This tree also have dome shape because of giraffes grazing on top of the tree.

Acacia has been valued as timber trees in USA, in Virginia and New England, that was used for making shipbuilding because the wood from this tree is hard, strong, durable and inelastic. It was also used for fuel, and even cultivated for its green forage for cattle. Today the tree is used in shipbuilding, for agricultural purposes, for making furniture and toys. This wood is heavier, harder, tougher and more rigid than English Oak wood. Good qualities of this timber are well-known in America as the red locust.

Reticulitermes Flavipes, commonly known as termites are insects which are mostly hated by people. Because of the desire to get rid of these insects, insecticides are being designed. Insecticides are products to kill insects and to get rid of them. But there is a possibility that the chemicals which compose that certain insecticide can harm other living organisms such as human. And there is a said characteristic of Acacia, common name for Acacia confuse that it has an insecticidal material which can help people away from termites.

The researchers conduct a study about the capability of Acacia as an insecticidedesigned to kill termites. This study will focus on the usage of its

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seed in making an insecticide to prove that there is an effect on the termites. This effect may be positive or negative. They came up with this study while looking for an investigatory project. An article caught their attention and with this, the researchers decided to make up further investigations about the acacia insecticide. (<http://www.buzzle.com/articles/acacia-tree-facts.html>)

Schematic Diagram

Dependent Variable Independent Variable

Termite Killer

Acacia Seeds and bark

Extraneous Variable

Type of plant used

Temperature

Figure 1

The diagram shown above shows the Termite Killer as the Dependent Variable, Acacia seeds and bark as the Independent Variable, and the Type of Plant used and temperature as the extraneous variables used in this study.

METHODOLOGY

I. Materials

In this research, the researchers should need to create an insecticide through the process of decantation and it will need 15 acacia seeds and 3

acacia barks. Those seeds will be placed in a 250mL beaker with 100mL water. The beaker will then be placed above the tripod which is the testing of the insecticide; they need a container with at least ten termites that is covered with screen. They first need to drain the seeds, get the extract with the use of funnel and then transfer the extract to a sprayer.

II. Procedure

First, the tripod should be placed above the Bunsen burner and there should be wire gauze on top of the tripod. The researcher will then put 100mL of water into the 250ml beaker and follow it with theseeds. Heat will be added to the beaker by placing it on the tripod and light theburner until the seed reaches its boiling point. Let it cool for a while andthen pour the solution in a sprayer with the use of funnel that comes with a filter paper. After that, the insecticide is now ready to be tested and be sprayed on the termites. The researcher will now record the observations.

III. Flowchart

IV. Prepare the termites inside a container and to be sprayed with the acacia bark and seeds extract After the decoction is cool, pour it inside a spray bottle and it is ready for observation Let the decoction cool for a while

Wait for the water with seeds and bark to reach its boiling point Light the Bunsen burner and heat the beaker with medium amount of fire

Put the acacia seeds and pieces of acacia bark into the beaker with 100mL of water

Put 100ml of water into the 250mL beaker

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Place the tripod with wire gauze over the Bunsen burner

Place the wire gauze above the tripod

Prepare the materials for decoction