

# Essay on analysis of variance

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The green moss bio-insecticide was extracted by means of pounding and squeezing. The insecticide was tested by the researcher by applying it to 10 termites in three trials with three different concentrations. The first setup was applied with the 100% moss extract, the second setup with the 50%, the third setup with the 25% concentration gradient of the moss extract. The last setup was applied with commercial insecticide.

With the given results that were computed from the gathered data, the researcher concludes that the alternative hypothesis, which states that the green moss extract would be an effective bio-insecticide on dry wood termites versus the commercial insecticide by means of their mortality, is accepted the reason given that the F value is higher than the degrees of freedom. If the green moss extract, compared to commercial insecticide, would be an effective insecticide against drowsy termites.

Termite, common name for numerous species of social insects that can damage wooden structures, such as furniture or houses, or other materials containing cellulose while other species obtain a special fluid secreted by beetles. Control is obtained also by using wood treated with creosote or some other poisonous chemical. Because most worker termites cannot live without moisture, the territories should be exposed to dry air.

Insecticides induced to termites are of the following: The soil where a structure is standing would be treated with an insecticide to discourage termite incursions; wooden parts of a structure would be treated with creosote or some other poisonous chemical for control thus making the termites live outside the wood but the workers cannot live without moisture,

thus being exposed to dry air. Commercial insecticides are very harmful not only for the common health of the insects but also for humans and the environment.

Unstable chemicals that kill other lives will most potentially kill others. In conclusion, commercial insecticides which contain harmful chemicals are widely ranged in the country but must not be thus having the study. Moss is used in this study as an insecticide to drowsy termites due to the Bryophytes isolated location; moist, wet, and out of reach. Green moss is not contacted by termites, thus the idea of making the Bryophyte to be an insecticide.

**General Statement of the Problem** The problems of the research are the following: The possibility of the green moss extract to be a potential insecticide to drowsy termites; the comparison of the green moss extract as an insecticide and the commercial insecticide to its effectiveness over drowsy termites. **Specific Questions** 1. Is there a significant difference between the different proportions of the green moss extract and commercial insecticide in terms of killing termites? 2. Will there be a high mortality rate on the termites when the green moss extract is used.

**Statement of the Hypotheses** The null hypothesis of this study is that the Green moss extract would not be an effective insecticide over drowsy termites versus the commercial insecticide by means of mortality while its alternative hypothesis is that the Green moss extract would be an effective insecticide on droopy termites versus the commercial insecticide by means of mortality.

**Significance of the Study** The aim of the study is to use the abundance of green moss extract in the research's location for use as an alternative for an insecticide over commercial products due to its chemical value. And also, to find what substance does the green moss extract contain which has insecticidal properties over the termites, if ever. Most Filipino families will benefit from the study due to its abundance in any place which is damp; virtually, everywhere. It may also be mass produced and may be a source of income to the Philippines; export to other countries.

**Scope and Limitation** The study will be dealing with the production of the bio-insecticide made out of the pure extract gathered from the green moss given the reason of the countless chemicals found in the commercial insecticide and that the bio-insecticide is to lessen the usage of it by proving that the product has better mortality rate over pests, in this case, drowsy termites. The study will be limited on what type of tests shall the green moss extract bio-insecticide undergo. The study is also limited on using just the green moss as the resource for the study.

**Definition of Terms** Bryophyte - a botanical division (phylum) of small, soft plants. Drowsy termites - creates colonies in wood, with no connection to the ground necessary. Green moss - A plant which may grow in all types of climate and grow on a variety of substrates. Insecticide- a chemical used against insects. **REVIEW OF RELATED LITERATURE** The potentiality of Nonage bark extract as an insecticide was conducted by Sheer Ann Alarming, Erectile Guessers, and Shannon Mayo through Photochemical Analysis and Screen-House Experiment.

For the Screen-House Experiment, four nonsectarian were constructed with them applied Treatment A (pure extract), B (extract with essential oil), C (Bacon), and D (Raid). Mortality rate and effectiveness of the extract were observed for two minutes by the researchers and the results were subjected to One-way Analysis of Variance (NOVA). As a result, in terms of the treatments effectively on mosquitoes, the pure extract is the most effective. On the other hand, Treatments A, C and D were effective against termites' and cockroaches.

The researchers had bought to a conclusion that Nonage Bark Extract is effective and could be tapped as an alternative bio-insecticide in eliminating insects. In another research, by Amman Bengal, tackling on the Insecticidal effect of Thebe on common house mosquitoes, he stated that developers have had discovered that thebe oil contains insecticidal qualities as well although no toxicity as been reported present. He then made an experiment by introducing the concoction to twenty(20) common house mosquitoes to test the effectively of it and was then observed for twenty(20) minutes.

The results brought the researcher to the conclusion that thebe contains an insecticidal effect on mosquitoes. Lastly, the researchers Gaylord and Clement had pondered over the effectiveness of cassava extract insecticide against termites and how it could be a substitute for the commercialese insecticides. The extract was then gathered and applied to twenty(20) termites inside a beaker; sprayed twice. After several trials and times measured, they used T-test to tabulate the data of the Cassava extract against the commercialese insecticide.

They then concluded that the two have no significant difference and that the Cassava extract is effective and may be a substitute for the commercialese insecticide. **METHODOLOGY** **Location of the Study** The study was conducted inside the vicinity of the researcher's school, Calm CityScienceHigh School. **The moss was gathered from Callahan, Laguna.** **Data Gathering Process** The data was gathered after the application of the 100%, 50%, and 25% gradient incineration of the green moss extract, and the commercialese insecticide to the drowsy termites.

The researcher had observed if there was a significant difference between the four (4) substances to the mortality rate of the drowsy termites.

**Statistical Analysis** The data gathering technique to be used in the study by the researcher is the One-way analysis of variance that it may be used to two or more samples, by using the F-test, and must be numerical data. Since the samples are independent, they have equal variances, and that the insecticides are virtually distributed by the same assure, the study is applicable for a One-way NOVA.

**Instruments** The researcher used the following materials to make the bio-insecticide made out of green moss extract. The raw materials that were used to create the product was green moss and water (for the concentration of the extract). The other instruments used were mortar and pestle, to pulverize the moss and get the extract easier; beaker, as both a container and measurement tool for both the extract and commercialese insecticide; filter paper, in order not to get impurities to the extract; terrorized containers as where the drowsy termites would be put to; and sprayer for the distribution of the extract.

A stopwatch will be used to measure the duration of the mortality of the drowsy termites. Procedure The researcher would first collect the materials for the experiment going with: 500 grams of moss; a beaker; a stirring rod; mortar and pestle; filter paper; patisseries; commercialese insecticide. The researcher would then be extracting the moss using the mortar and pestle and then be contained on a beaker through filter paper and funnel. After a short hill, the extract and the commercialese insecticide will then be applied to 3 set- ups each and having the extract decreased from 100% concentration to 50% and then to 25%.

The results will then be gathered and tabulated after twenty(20) minutes using the " One-way analysis of variance" or the " One-way NOVA". Summary and Conclusion This study was conducted to develop a bio-insecticide made out of green moss extract that may kill drowsy termites. The data was gathered by applying the different concentration of the green moss extract which was 100%, 50%, and 25%, including the commercialese insecticide to three (3) trials each containing ten (10) drowsy termites.

With the given results that were computed from the gathered data, the researcher conclude that the alternative hypothesis, which states that the green moss extract would be an effective bio-insecticide on dry wood termites versus the commercialese insecticide by means of their mortality, is accepted the reason given that the F value is higher than the degrees of freedom thus stating that the alternative hypothesis is accepted. In addition, the researcher has tested and concluded that the extraneous arable of the moss extract to be acidic and that may have affected the termites' mortality is faulty.

The green moss extract has a level of 8 pH which concludes that it is a basic substance and not an acidic substance. Recommendation The researcher recommends finding what exact content that the green moss extract has that had killed the drowsy termites. He recommends that when the specific content of the green moss extract that has a pesticides effect is found, use another type of moss. The researcher also recommends using the same type of moss but in another location having the reason of different nutrition of the moss.