

SAMPLE STUDENT-MADE BACKGROUND OF THE STUDY

Background of the Study

Flooding is one of the major problems in the Philippines during rainy seasons. Polystyrene or styrofoam are known as one of the major contributors of clogged drainages leading to floods on lowland areas. They are classified as non-biodegradable wastes and needs hundreds of years before it is fully degraded. Studies reported that styrofoam products make up approximately 25 to 30 percent of space in landfills around the world (Cartmell, 2012). Polystyrene is estimated to yield about 200 tons of waste per month where 140 tons or 70% comes from Metro Manila. Most of the wastes come from commercial establishment like fast-food restaurants. These restaurants use packaging materials that are 90% polystyrene (Garcia, 2006).

Proper waste management has been a long issue in environmental conservation. Different institutions are in search of effective ways to lessen the wastes created by human. There is now a need to find ways to recycle wastes, especially styrofoams. Kiyuhara et al. (2001) demonstrated a technique in recycling styrofoam waste by transforming it to a glue for bonding wood materials using hot-melt method.

Citrus are common fruit for Filipinos. It is characterized by its aroma due to the presence of chemical known as limonene (Penecilla et al., 2011). Utilizing this chemical constituent to the development of techniques in recycling is now a query for most researchers.

This study was conducted to find out the feasibility of local citrus to be used as a solvent in dissolving styrofoams. Three citrus oils were extracted from suha, dalanghita, orange and calamansi. Also, dissolved styrofoam was processed to become a useful adhesive for different paper materials.

**from Determination of the Efficiency of Dissolving Styrofoam Using Extracts from Four Citrus Fruits (Salme et al., 2012)*

Background of the Study

Blood loss is one of the common problems encountered during accidents. Many victims suffer from pain as a result of internal or external bleeding. In order for them to stop the bleeding, they use first aid treatments such as applying direct pressure, cold applications and tourniquet. But using those methods are very complicated and may lead to more serious damage if not properly handled. Alternative medication can be used to prevent blood loss caused by wounds, and this is by using plant extracts. Plants have great potential of managing and treating wounds due to the presence of wound healing properties such as flavonoids, terpenoids and other phytochemical constituents (Thakur, et.al. 2011). Those properties are evident in the plants like asters, which are traditionally used by the Native Americans to treat arrow wounds (Nuffler, 2008).

With existing information on the ability of plants to be used as a remedy for blood coagulation, very few literature cites and compares the different weeds and plants of the Philippines as a potential alternative. This study attempts to determine the reaction times to blood of three members of Family *Asteraceae* that is common in the Philippines (*Tridax procumbens* and *Cosmos caudatus*).

**from Anti-Thrombolytic Effect of Tridax procumbens and Cosmos caudatus Extracts as Inferred from Human Blood Coagulation Time (Mariano et al., 2012)*

Background of the Study

Transportation is a non separable part of the society as it plays an important role for the economic development of each country (Matthew and Rao, 2003). Different scientific principles like Law of Motion and Chemical Reaction have developed machines and equipments to improve the quality of transportation. Biefeld-Brown Effect's electrogravitational phenomena can be indispensably linked to all forms of commercial and other types of transportations (Naudin, 2001).

Creation of a device that operates with the concept of Biefeld-Brown Effect is the primary concern of this study. Information gained from the created device and its mechanism can be used as one of the sources in producing efficient and environmental-friendly transportation system with the possibility of frictionless motion and lesser fuel consumption.

**from Understanding the Underlying Principles of the Infamous Biefeld- Brown Effect by Creating an Anti-Gravity Lifter (Yap, 2012)*

Background of the Study

Food spoilage is the damage on the original features of food caused by temperature, bacteria and various enzymes. One of the widespread causes of food spoilage is the contamination of various fungi that often form a fuzzy growth on the surface of organic matter. Food technologies are in continuous search of ways to control the growth of fungi including molds, to different foods.

Recent studies showed that, at least in *Penicillium*, the production of contamination-causing chemicals in fungi varies during the dark and light conditions (Schmidt-Heydt et al., 2010). With this prior information on the growth and development of molds, influence of light on food relevant fungi can contribute to the preservation of food.

This study focuses on the response of molds to the primary colors of light. Addressing this problem with food contamination due to molds will be of immense help in improving the quality of life nowadays.

**from Influence of Varying Wavelengths and Distance of Light on Food Relevant Microorganisms (Palustre et al, 2012)*

My notes:

RESEARCH PLAN

Questions being Addressed

This study will address the household problem of food contamination due to molds by developing a potential food incubator utilizing varying wavelengths of light (red, blue, green and white). This study specifically seeks to find answer to the following questions:

1. What will be the effect of blue (B), red (R), green (G) and white (W) lights to the number of microbial colonies that will be formed in a gelatine medium?
2. Is there any significant difference on the growth size of the microbial colonies when exposed with varying wavelengths of light?
3. Which color and distance of light is an effective inhibitor of microbial growth?

Goals, Expected Outcomes and Hypotheses

This study primarily deals with the determination of microbial response to primary colors and varying distance of light. It is expected that after conducting this study, an effective incubator that can lengthen the shelf life of foods will be developed. Specifically, this study aims to:

- create a food incubator, using varying colors of light, that can inhibit the growth of microbial organisms;
- determine the number of fungal colonies in the set- ups created;
- compare the growth size of colonies in each set- ups; and
- identify which color and distance of light inhibits the growth of microorganisms.

Procedure

Preparation of Growth Media. 24 grams (g) gelatin powder, 6 g chicken broth cube and 250 millileters (mL) water will be boiled in a steel pot for 10 minutes. Petri dishes will be sterilized by heating it in an oven toaster for 45 minutes for aseptic reasons. After cooling down, the prepared gelatin media will then be poured in eight petri dishes as high as two millimeters from the bottom and will be covered.

Creation of light set ups. Light set ups made up of boxes (15.5"×8.75" ×10.75") with compact fluorescent lamp, two meter cord and cellophanes (red, blue, and green) will be created. The setups will be created by attaching six carton boxes together. Holes will be placed on top of each set up to house the 18-watt compact fluorescent lamp. Different colors and distance of light will be placed in each setup. A total of eight set ups (incubators) will be created. Table one shows the condition of each setups.

Table 1. Set ups under study and corresponding conditions.

Set up	Color of light	Distance of light (ft)
1	Red	2 ft
2	Red	4 ft
3	Blue	2 ft
4	Blue	4 ft
5	Green	2 ft
6	Green	4 ft
7	White	2 ft
8	White	4 ft

Exposure of agar to varying color and distance of light. The created media will be placed in the light set ups for three days. On a 24 hour interval, the number of colonies formed, growth size and color will be noted. Every set up will be replicated three times. Temperature will be monitored every hour to ensure that the heat coming from the bulb is not affecting the growth of microorganism.

Data Analysis. The data will be entered in the computer program PAST version 1.42 (Hammer et. al., 2001). Analyses of Variance (ANOVA) will be carried out for all measured parameters to determine if there is significant difference on the number and size of microbial colonies formed in the improvised media prepared.

Bibliography

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SAMPLE STUDENT-MADE STATEMENT OF THE PROBLEM

Statement of the Problem

This study primarily deals with the determination of mosquito-response to varying amounts of *Pandanus amaryllifolius* leaves as an additive to ovitrap. Specifically, this study aims to:

- determine the number of larvae and mosquitoes collected in the set-ups created;
- compare the number of larvae and mosquitoes collected in the set-ups; and
- identify which amount of *Pandanus amaryllifolius* leaves is effective in controlling mosquitoes.

**from Utilization of Fermented Pandanus amaryllifolius (Pandan) Leaves in Controlling Dengue-Carrying Mosquitoes*

Statement of the Problem

Creation of a device operated through the principle of Biefeld-Brown Effect that can be used as a model for developing a transportation system is the primary aim of this study. Specifically, it seeks to find answers to the following questions:

1. Is there any difference in the height of levitation of the device with varying amount of material subjected inside?
2. What is the effect of changing the dimensions of the device to the levitation start time and height of levitation?

**from Understanding the Underlying Principles of the Infamous Biefeld- Brown Effect by Creating an Anti-Gravity Lifter (Yap, 2012)*

Statement of the Problem

This study aims to determine the acceptability of papers with *Azedarachta indica* (neem) leaves, and *Piper betle* (betel) leaves, *Lansium domesticum* (lanzoness) peelings, *Euphorbia millii* (euphorbia) stem, *Allium sativum* (garlic) cloves and *Capsicum frutescens* (siling labuyo) fruit or collectively known as BLEGS to be used as alternative materials for creating mosquito-repelling charcoal. Specifically, this study aims to:

- determine the repelling ability of the created charcoals through the number of mosquitoes it can repel;
- compare the created charcoals in terms of its longevity, time to boil water and time to fry a specimen; and
- determine which ratio of the charcoal components is effective in repelling mosquito and in using as a cooking material.

**from Acceptability of BLEGS, Neem Leaves and Waste Papers in the Creation of Mosquito-Repelling Charcoal (Rosales, 2012)*

Statement of the Problem

The general purpose of this study is to determine the blood coagulation time in different plant extracts from Family *Asteraceae* such as *Tridax procumbens* and *Cosmos caudatus*. Specifically, it seeks to find answers to the following questions:

- a. Do *Tridax procumbens* and *Cosmos caudatus* have the ability to hasten the formation of fibrin in blood?
- b. Is there significant difference on the blood coagulation time in these plant extracts?
- c. What are the components of the plant specimen that contributes to the effectiveness of the plants as a pro-coagulant?

**from Anti-Thrombolytic Effect of Tridax procumbens and Cosmos caudatus Extracts as Inferred from Human Blood Coagulation Time (Mariano et al., 2012)*

SAMPLE STUDENT-MADE SIGNIFICANCE OF THE STUDY AND SCOPE AND LIMITATIONS

Significance of the Study

With the increasing number of dengue cases reported, utilization of an ovitrap can be of great help in lessening it. The created ovitrap from pandan leaves can be utilized by household, school and barangay community as a way of preventing the spread of mosquitoes in their locality.

Firstly, household can create their own ovitrap at home which does not cost too much. With this ovitrap, they can be assured that their house is safe from any disease-carrying mosquitoes.

Secondly, school can develop this ovitrap and distribute it to the school premises as part of the school's campaign to make students safe from diseases caused by mosquitoes.

Lastly, barangay can also replicate this ovitrap in their community and be of great help in mitigating the mosquitoes in the locality.

**from Utilization of Fermented Pandanus amaryllifolius (Pandan) Leaves in Controlling Dengue-Carrying Mosquitoes*

Significance of the Study

Determination of the influence of primary colors of light to the growth of microorganisms will be of great help to different members of the society:

Household. This study can be used by family members, particularly housewives, on choosing the color of lights for their food storage. Choosing the correct color of light can increase the shelf life of their foods at home.

Canteen, Restaurant and other Food Services. They will gain practical information on the effect of primary colors to food spoilage in their place. This study can be used to obtain safeties on foods and to prevent food toxication of their customers.

Microbiologists. This study will serve as additional information about microbial growth and development and as a baseline for future studies on food science.

**from Influence of Varying Wavelengths and Distance of Light on Food Relevant Microorganisms (Palustre et al, 2012)*

Scope and Limitations

The primary concern of the study is to determine the blood coagulation time of extracts from asters. The plant species used in this study is limited to the following species: *Tridax procumbens* and *Cosmos caudatus*. The plant specimens were collected in open-fields in Cavite City. The blood samples used in this study were taken from students, who willingly participated in the study. Effectiveness of the plant extracts in promoting blood coagulation was assessed through the blood clotting time recorded on the tests performed.

Chemical analyses of the extracts and the microscopic analyses of the extracts effect to blood were beyond the scope of the study. The study was conducted from June until August 2012 at Cavite National High School, Cavite City.

**from Anti-Thrombolytic Effect of Tridax procumbens and Cosmos caudatus Extracts as Inferred from Human Blood Coagulation Time (Mariano et al., 2012)*

Scope and Limitations

This study covers the identification of the feasibility of water lilies, specifically the stems, to treat waste water. The extent of the effect of water lily to waste water is only limited to its physical characteristics such as turbidity, pH and conductivity. Phytochemical analysis of the plant specimen and microbiological testing of the treated water were beyond the scope of the study.

The study was conducted from June until August 2012. The treatment of wastewater with water lilies was done at Cavite City while the analyses of the water characteristics were carried out by Mach Union Laboratory at Las Pinas City, Metro Manila.

**from Determination of the Hygienic Effects of Nymphaea sp. (Water Lily) to Waste Water (Baloy et al., 2012)*