

# Investigatory projects



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The problem, however, is that these chemicals are expensive and pose harm to the environment. This study aims to develop an environment friendly, safe, and effective yet cheap mosquito repellent by using weeping willow leaves and pine cones. The activity is not successful but it shows the different scientific processes to be followed in doing an experiment. Mosquitoes are one of the most harmful creatures in the world, not only to humans but also to other land vertebrates as well. They carry viruses that are sometimes fatal when transmitted to humans.

Diseases transmitted by mosquitoes are common in the tropics (Merit Encyclopedia, 1969). Mosquito-borne diseases are transmitted to the body of the host through mosquito bites and contaminated food. The saliva of the mosquito is sometimes infected with pathogens. These pathogens are transmitted to the hosts when they are bitten by the mosquitoes. Common viral infections caused by mosquitoes are more pronounced in the larval stages and can result from the ingestion of contaminated food. Mosquito-borne diseases include malaria, dengue or break bone fever, typhoid, yellow fever, and H- fever (Melts, et.

Al., 1971). Insecticides are recommended to combat these disease-carrying pests and "trouble makers." Insecticides are widely used as chemicals in controlling pests, which are either organic or chemically synthesized. The plant kingdom is a vast source of naturally occurring and selective insecticides. Portions of plants such as the flower, leaves, stem, or roots (Colliers, 1972). Insecticides include nicotine, rotenone, pyrethroids, and sabbatical. Some have been used by humans for a long time. As early

assess, nicotine was used as an insecticide in the form of a crude extract from tobacco.

Nicotine's alkaloid can be obtained from the leaves and stems of Nicotine Tobacco (Inupiat, 1976). Nicotine is harmful to humans though it doesn't effect the plants when applied . Rotenone, the most active of the six alkaloids , is harmful to man but a very effective poison against various insects (Abbey, 1972). On the other hand , essential oils from eucalyptus and psychophysical were use as effective mosquito insecticide or repellent (Smith. 1996). A research made on the subject found that weeping willow (Saliva Babylonian) leaves contain essential oils similarly found in eucalyptus (Antonio, 1984).

Pinups Insular, commonly known as Shaky pine, is found in Khakis hills and Motorman, in the hills of Burma and in Central Luzon. It is a valuable source of resin turpentine. It grows up to 15 m (1 50 feet) and has very fine, grass-like needles (Tree of the World). It contains alkaloid, which is an ingredient in most insecticides. A. Materials Half a kilogram of weeping willow leaves were gathered from the PhilippineScienceHigh School (SSH) campus. Two and Half kilograms of pine cones came from Baggie. B. Methods 1. Extraction and Distillation

Forty grams of weeping willow leaves were extracted five times for 10 hours using the sloshes apparatus and titleholder as the solvent. Then two kilograms were extracted in five occasions for 10 hours each using the same apparatus and Covent as the extraction for the weeping willow leaves. After each extraction, the solution was gathered, and distilled for an hour to obtain

the extract. The extract was then stored in a cold place. 2. Culture of Wiggler  
Stagnant water was collected from the creek and from the SSH fish pond.  
The water was placed in basins and was left for two to three weeks.