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2023

### Green and Non-Green Extraction of Eugenol from Cloves Using Steam Distillation

Bek Yuldashbaev

bek.yuldashbaev@pop.belmont.edu

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#### Recommended Citation

Yuldashbaev, Bek, "Green and Non-Green Extraction of Eugenol from Cloves Using Steam Distillation" (2023). *Science University Research Symposium (SURS)*. 34.

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## Green and Non-Green Extraction of Eugenol from Cloves Using Steam Distillation

### **Abstract**

Eugenol is commonly found in many plants such as cloves. It is one of the most used natural anesthetics in dentistry. Indonesia is one of the places indigenous to clove trees. Its people take advantage of the pain numbing properties in cloves to aid their tooth pain. The extraction of eugenol itself can be performed through steam distillation. With the process of distillation, the steam carries the oils extracted from the clove buds and recondenses into a cloudy distillate containing polar and non-polar molecules. To separate the eugenol from the distillate, green and non-green solvents were used. The green solvent was a ratio of 3:1 ethyl acetate ethanol and the non-green solvent was dichloromethane. Both types of solvents had the same role of separating the clove oil from a polar liquid. The green solvent was predicted to do just as well as the non-green variant in separating the oils from cloves and this research provided valuable information about the effectiveness of green solvents.