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Green and Non-Green Extractions of Eugenol from Betel Leaves Using Steam Distillation

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Abstract:

Eugenol is one of the most widely used natural anesthetics in the field of dentistry. It can be extracted from betel leaves with a process called steam distillation. After the steam distillation, the eugenol has to be isolated from the other oils found in the leaf, so a set of green and non-green solvents are used. The green solvent is MTBE, and the non-green solvent is dichloromethane. Both of these solvents were used in the same role which was to distill the eugenol from the remaining oils in the distillate. The research done has shown both the solvents are highly effective in the isolation of eugenol. However, the non-green solvent leads to a higher percentage of eugenol isolated from the distillation. Aside from eugenol, many other oils still remained in the final distillate as their melting points were higher than that at which the distillations occurred. Further steps can be carried out in future research to completely isolate the eugenol from the remaining oils after this entire procedure.