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Download date	2026-05-11 16:31:39
Link to Item	https://hdl.handle.net/20.500.14694/7644

TITLE: Antimicrobial Activity of *Eupatorium Capillifolium*

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Introduction: Various medical plants have been used for many years to treat countless diseases all over the world and although many of those will remain folklore, others will be verified by researchers. According to the world health organization or WHO, there are currently nearly 20,000 medicinal plants used for pharmaceutical purposes. Besides their medicinal usage, many medicinal plants have antimicrobial properties that could benefit the human population. By investigating the antimicrobial properties of medicinal plants researchers will help lead the way to the development of new or improved drugs. *Eupatorium capillifolium* which is commonly known as dog fennel is an herbaceous perennial weed which belongs to the family *Asteraceae* and native to the southeastern part of North America where it is one of the most problematic weeds. It is commonly found in clearing fields, borders of woods, and even on the roadside. *Eupatorium capillifolium* has been used to treat reptile and insect bites through topical application, as a repellent towards mosquitos by extracting the essential oil, and Native Americans have even used the plant to treat epilepsy as well as sore throats.

Purpose: The goal of our research is to extract and isolate the active compound of dog fennel that shows antimicrobial activity.

Method: The three techniques which will be used to isolate the compound are TLC Bioassay, disk diffusion assay, and column chromatography.

Results/ Conclusion: Initial results from the disk diffusion assay showed antimicrobial activity against *Staphylococcus aureus* through the presence of an inhibition zone.