Disinfectant Properties of Nuphar advena: An Ethnopharmaceutical Approach

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Increasing pharmaceutical options will help develop diverse individualized healthcare plans (GLIFWC Commission, 1993). Ethnopharmaceutical studies can provide pathways for diversification. Yellow water lilies have been traditionally used as antiseptics globally. Eurasian studies on Nuphar lutea report favorable antimicrobial properties, but there are no documented studies on Nuphar advena, a yellow water lily specific to North America. This study tests the efficacy of Nuphar advena dried in the sun, shade, and mechanically and diluted to various concentrations against Micrococcus luteus and Staphylococcus epidermidis overgrowth in comparison to chlorhexidine gluconate 4% solution. It aimed to show that different dilutions of Nuphar advena rhizomes applied to these bacterial strains using the disc diffusion method will have a measurable zone of inhibition with the highest concentration being most effective and the rhizome dried in the sun having the greatest impact. Data was analyzed using SPSS, an ANOVA was run to determine significance. Results were mixed. 10% and 20% dilutions performed similarly to chlorhexidine gluconate 4% solution when applied to Staphylococcus epidermidis. All dilutions regardless of concentration underperformed chlorhexidine gluconate 4% solution when applied to Micrococcus luteus. The sun drying method performed well against Staphylococcus epidermidis, and both the sun and mechanical drying methods outperformed the shade drying method in the Micrococcus luteus study. The results in this study support traditional Ojibwe healers who have utilized Nuphar advena as an antibacterial agent since time immemorial. Further research is warranted to determine if Nuphar advena can be a suitable pharmaceutical option commercially.

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