Disinfectant Properties of Nuphar advena: An Ethnopharmaceutical Approach

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Increasing pharmaceutical options assists diversified and individualized healthcare plans (GLIFWC Commission, 1993). Study compares sustainability of traditionally prepared Nuphar advena rhizomes to environmentally hazardous antibacterials like chlorhexidine. Questions were: What impact does shelf time have on antibacterial properties of Nuphar advena?, How does Nuphar advena rhizome interact with Chloride, Nitrate and Phosphate anions?, What effect does dried and powdered Nuphar advena rhizome have on gram negative stain bacteria Proteus mirabilis? Hypotheses were: If antibacterial properties of Nuphar advena rhizome harvested in 2019 and 2022 are compared using the disk diffusion method, then rhizome from 2022 will have a larger zone of inhibition., If a solution of powdered Nuphar advena rhizome and Chloride, Nitrate and Phosphate anions is made with deionized water, then there will be no anion adsorption into Nuphar advena rhizome. If concentrations of Nuphar advena rhizomes are applied to Proteus mirabilis using the disk diffusion method, then the rhizome will have a measurable zone of inhibition. Two hypotheses were disproved, one was partially supported. Rhizomes prepared and harvested in 2019 had larger zones of inhibition, especially when prepared a week prior. When solutions of Chloride, Nitrate, and Phosphate anions and Nuphar advena rhizomes were made, rhizomes had no notable adsorption of Nitrate and Phosphate anions. When Chloride adsorption was measured, higher levels of anions than the spike amount was noted. Nuphar advena had no impact on Proteus mirabillis when measured with the disk diffusion method, supporting the traditional usage statements. This study shows the sustainability of Ojibwe antibacterials.

Awards Won:
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