

Review Form 1.7

Journal Name:	South Asian Journal of Research in Microbiology
Manuscript Number:	Ms_SAJRM_118809
Title of the Manuscript:	Determining the phytochemical properties and antibiogram of different chewing stick plants on selected streptococcal species isolated from the oral cavity
Type of the Article	Original Research Article

Review Form 1.7

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory</p> <p>REVISION comments</p> <p>1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)</p> <p>2. Is the title of the article suitable? (If not please suggest an alternative title)</p> <p>3. Is the abstract of the article comprehensive?</p>	<p><u>The following points have been deemed acceptable by the scientific community through review*****.</u></p> <p>Dental caries is a common oral infection caused by acids from fermenting food particles on teeth. Bacteria like <i>Staphylococcus aureus</i> and <i>Streptococcus mutans</i> create dental plaque, leading to tooth decay. Traditional teeth cleaning methods and toothpaste with fluoride are essential for proper dental health. Chewing sticks, made from plants like <i>Massularia acuminata</i>, <i>Phyllanthus muellerianus</i>, <i>Vernonia amygdalina</i> and <i>Jatropha curcas</i>, contain natural components that support oral hygiene and are used in toothpaste. Investigating the phytochemical properties and antibiogram of diverse chewing stick plants on specific streptococcal species isolated from the oral cavity resulted in substantiated scientific findings that had a discernible impact within the community.</p> <p>Ok</p> <p><u>50% Good. I request the author to reframe the abstract using the following abstract to better capture the comprehensive status of the research.</u></p> <p>Abstract:</p> <p>Chewing sticks are small twigs obtained from plant stems, measuring 12-25cm long and tied in bundles of 5-10. These twigs have been used for oral hygiene for many years, even before the invention of toothpaste, mouthwash, and mouth sprays. This study aims to determine the phytochemical properties and antibiogram of different chewing stick plants on two streptococcal species isolated from the oral cavity. <i>Streptococcus pyogenes</i> and <i>Streptococcus mutans</i> were isolated from oral swabs of patients at Rivers State University Teaching Hospital and identified to the species level. The pure isolates were further tested against the antimicrobial effects of the aqueous and ethanolic extracts of four chewing stick plants: <i>Vernonia amygdalina</i>, <i>Jatropha curcas</i>, <i>Massularia acuminata</i>, and <i>Phyllanthus mullerianus</i>. Qualitative phytochemical screening and quantitative analysis were carried out on the plant stems to determine the presence of antimicrobials. The percentage of antimicrobials present in the plant stems ranged from 33.3% to 66.7%, with <i>Jatropha curcas</i>, <i>Massularia acuminata</i>, and <i>Vernonia amygdalina</i> exhibiting the highest percentages, and <i>Phyllanthus mullerianus</i> the lowest. The antibiogram of the isolates to conventional gram-positive antibiotics was determined by the disc diffusion method. <i>Streptococcus pyogenes</i> showed 75% sensitivity and 25% resistance to the antibiotics, while <i>Streptococcus mutans</i> displayed 50% sensitivity, 16.7% intermediate, and 33.3% resistance to the antibiotics. The investigation found that the ethanolic extract of <i>Massularia acuminata</i> has the highest zone of inhibition of 15.5 ±0.71mm at 100mg/ml, while <i>Phyllanthus mullerianus</i> exhibited the least inhibition at 8 ±0mm. The ethanolic extract of <i>Jatropha curcas</i> and <i>Vernonia amygdalina</i> showed little effect on the test isolates, with a range of 0-9.5±0.71mm. The aqueous extract ranged from 8±5.7 - 9.5±0.71mm at 100mg/ml, with <i>Massularia acuminata</i> exhibiting the highest and the lowest zones of inhibition. This finding indicates that <i>Massularia acuminata</i> has the ability to suppress the growth of dental plaque-forming <i>Streptococcus mutans</i> and <i>Streptococcus pyogenes</i>. Chewing sticks are more affordable and easily accessible, so they could be recommended in community oral health programs.</p> <p>Yes</p> <p>Yes</p>	

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<p>4. Are subsections and structure of the manuscript appropriate?</p> <p>5. Do you think the manuscript is scientifically correct?</p> <p>6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</p> <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<p>Author requested to add research articles published in 2020 to 2024 related to this research in the introduction section, discussion part and also reference section.</p> <p>Additional Suggestions**** Important****</p> <p><u>Please ensure the following points are taken into consideration:</u></p> <p>1. It is essential for the author to underscore the significance of the research study in the introduction section.</p> <p>2. The utilization of tables alone to present the research findings is insufficient. It is imperative for the author to articulate the results corresponding to each table and incorporate graphical figures to elucidate the outcomes. Additionally, each result should be accompanied by the respective table and figure number.</p> <p>3. Upon the completion of the manuscript, it is advised to include visual representations of the antibiogram plating as well as photographs depicting chewing sticks derived from the plant species <i>Massularia acuminata</i>, <i>Phyllanthus muellerianus</i>, <i>Vernonia amygdalina</i>, and <i>Jatropha curcas</i>, Phytochemical Screening test result & biochemical test photos. These visuals will serve to enhance the comprehensiveness of the research and underscore its contemporary relevance.</p> <p>4. Authors are urged to strictly adhere to the guidelines stipulated for the creation of a research article.</p>	
<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>Can be improved</p>	
<p>Optional/General comments</p>	<p>The paper's importance is appreciated, but it requires minor improvements to be accepted. Author, complete all changes mentioned in the review form for paper acceptance.</p>	

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

Reviewer Details:

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