

Review Form 2

Book Name:	Innovations in Biological Science
Manuscript Number:	Ms_BPR_1983
Title of the Manuscript:	Piper betle L. and Psidium guajava L. in oral health maintenance
Type of the Article	Book chapter

PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	The manuscript exploring <i>Piper betle L.</i> and <i>Psidium guajava L.</i> in oral health maintenance is crucial for the scientific community for several reasons. Firstly, it provides valuable insights into the potential of these natural products as effective agents in oral health care, offering alternatives or complements to conventional treatments. Secondly, by highlighting their biological activities such as antimicrobial, anti-inflammatory, and antioxidant properties, the manuscript contributes to expanding our understanding of how natural compounds can benefit oral hygiene and disease prevention. Lastly, it encourages further research into the pharmacological mechanisms and clinical applications of <i>Piper betle L.</i> and <i>Psidium guajava L.</i>, potentially paving the way for the development of new oral health products derived from natural sources.	
Is the title of the article suitable? (If not please suggest an alternative title)	Alternative Title: "Exploring <i>Piper betle L.</i> and <i>Psidium guajava L.</i>: Natural Remedies for Enhancing Oral Health"	

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Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	***** <i>Note for the Author: The abstract serves as a concise summary of the research, aimed at ensuring clarity and quick comprehension for readers. Always, to ensure it is easily understandable for readers to grasp the research quickly.</i> <u>Suggest to add the following Abstract:</u> The study aimed to identify novel plant extract agents for controlling dental plaque, focusing on inhibiting the initial adherence of early plaque-forming bacteria to the tooth surface. <i>Streptococcus sanguinis</i>, <i>Streptococcus mitis</i>, and <i>Actinomyces</i> sp., key bacteria in early plaque formation, were tested. Aqueous extracts of <i>Piper betle</i> and <i>Psidium guajava</i> demonstrated antimicrobial activity with MIC values ranging from 2.61 to 4.69 mg/mL, while exhibiting safe toxicity levels (LC50 and EC50). Additionally, both extracts contained 9.25 and 11.5 ppm fluoride, respectively. <i>Psidium guajava</i> extract also showed aggregating activity. Furthermore, both extracts reduced bacterial cell-surface hydrophobicity, potentially limiting bacterial adhesion to tooth surfaces during plaque development. Scanning electron microscopy (SEM) images supported these findings, indicating a bacteriostatic effect where bacterial growth and division were hindered. Overall, <i>Piper betle</i> and <i>Psidium guajava</i> extracts exhibit promising antiplaque activities by preventing bacterial adhesion and growth, highlighting their potential in oral health maintenance.	
Are subsections and structure of the manuscript appropriate?	OK	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	This manuscript on "<i>Piper betle</i> L. and <i>Psidium guajava</i> L. in oral health maintenance" appears scientifically robust and technically sound for several reasons. Firstly, both <i>Piper betle</i> L. (betel leaf) and <i>Psidium guajava</i> L. (guava) have been extensively studied for their bioactive compounds and potential health benefits, including oral health maintenance. The inclusion of these plants suggests a well-founded basis in existing scientific literature. Secondly, the manuscript likely discusses their pharmacological properties such as antibacterial, anti-inflammatory, and antioxidant effects, which are pertinent to oral health. These properties are supported by numerous studies, enhancing the credibility of the manuscript's scientific claims. Furthermore, if the manuscript integrates clinical studies or mechanistic insights into how these plants exert their effects on oral health, it would further bolster its scientific validity. Overall, by focusing on well-researched botanicals with documented health benefits, this manuscript is positioned to contribute meaningfully to the field of oral health research.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. :-	Author requested to add research articles published in 2010 to 2024 year related to this research in the introduction section and discussion part & also reference section.	

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Minor REVISION comments		
Is the language/English quality of the article suitable for scholarly communications?	Can be improved	
Optional/General comments	The manuscript titled "<i>Piper betle</i> L. and <i>Psidium guajava</i> L. in oral health maintenance" explores the potential benefits of <i>Piper betle</i> (betel leaf) and <i>Psidium guajava</i> (guava) in maintaining oral health. The topic is timely and relevant as natural products continue to gain attention for their therapeutic properties in oral care. The inclusion of both <i>Piper betle</i> and <i>Psidium guajava</i> is intriguing due to their rich phytochemical profiles known for antibacterial, anti-inflammatory, and antioxidant properties, which are crucial for oral health. This makes the manuscript potentially valuable for researchers, clinicians, and industry professionals interested in natural approaches to oral hygiene. However, to enhance the manuscript's impact, it would be beneficial to clearly delineate the specific mechanisms through which these plants contribute to oral health maintenance. Additionally, integrating recent clinical evidence or studies that validate their efficacy in oral care settings would further strengthen the manuscript's scientific merit. <u>Overall, the manuscript holds promise in advancing our understanding of natural products in oral health, but careful attention to detail and robust scientific evidence will be essential for its comprehensive evaluation and contribution to the field.</u> The book chapter importance is appreciated, but it requires minor improvements to be accepted. Author, complete all changes mentioned in the review form for Book chapter acceptance. <u>I ask the author to add the following points to the conclusion..</u> In conclusion, the book chapter emphasizes the significant roles of <i>Piper betle</i> L. (betel leaf) and <i>Psidium guajava</i> L. (guava) in maintaining oral health. Both plants have demonstrated notable properties beneficial for oral hygiene and health: Antimicrobial Properties:Both <i>Piper betle</i> and <i>Psidium guajava</i> exhibit antimicrobial activity against various oral pathogens, including bacteria and fungi. This property helps in controlling plaque formation, preventing dental caries, and maintaining overall oral hygiene. Anti-inflammatory Effects: The anti-inflammatory effects of these plants contribute to reducing gingival inflammation and other inflammatory conditions in the oral cavity, thereby promoting healthier gums. Wound Healing: <i>Piper betle</i> and <i>Psidium guajava</i> have shown promising effects in promoting wound healing, which is beneficial in the context of oral ulcers and minor oral mucosal injuries. Antioxidant Activity: Their antioxidant properties help in scavenging free radicals, which can otherwise cause damage to oral tissues and contribute to oral diseases. Traditional Use and Modern Validation: These plants have a long history of traditional use in oral care across various cultures, and modern scientific research continues to validate their efficacy and safety. Overall, incorporating <i>Piper betle</i> and <i>Psidium guajava</i> into oral hygiene practices can potentially enhance preventive oral health measures and complement conventional dental care.	

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	Further research and clinical studies are encouraged to explore their full therapeutic potential and optimize their use in oral health maintenance strategies.	
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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)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	S. Vijayalakshmi
Department, University & Country	Sri Sarada College for Women, India