

Review Form 3

Journal Name:	Journal of Advances in Biology & Biotechnology
Manuscript Number:	Ms_JABB_121299
Title of the Manuscript:	"Silkworm Pupal Oil and Chitosan: A Comprehensive Exploration of their Unique Qualities"
Type of the Article	Original Research Article

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>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.</p>	<p>This manuscript presents important research on extracting valuable compounds from silkworm pupae, which are often considered waste products in silk production.</p> <p>The few key reasons why this work is valuable for the scientific community:</p> <ul style="list-style-type: none"> • It explores ways to utilize silkworm pupae as a source of oil and chitosan, turning a waste product into potentially useful materials. This aligns with sustainability efforts and circular economy principles. • The study provides detailed characterization of the physicochemical properties of pupal oil and chitosan from different silkworm breeds and sexes. This comprehensive data is valuable for researchers and industries looking to use these materials. • The findings suggest silkworm pupal oil has properties similar to some edible oils, opening possibilities for its use in food, pharmaceuticals, or cosmetics. • The extracted chitosan showed favorable characteristics like high solubility and degree of deacetylation, indicating its potential as an alternative chitosan source to crustacean-derived options. <p>In general, this research contributes important knowledge on transforming silk industry byproducts into value-added materials with diverse applications. The thorough analysis and comparison to commercial alternatives make this a solid foundation for further research and development in this area.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>This title does capture the main focus of the study; it could be improved to be more specific and informative. Suggestion for an alternative title that better reflects the content and scope of the research:</p> <p>"Physicochemical Characterization of Oil and Chitosan Extracted from Cross Breed and Bivoltine Hybrid Silkworm Pupae: A Comparative Analysis"</p>	
<p>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.</p>	<p>The abstract is fairly comprehensive, providing a good overview of the study's main objectives, methods, and key findings. However, it could be improved with some additions and modifications.</p> <p>Some of my suggestions:</p> <p>Additions:</p> <ul style="list-style-type: none"> • Include the specific silkworm breeds used in the study (e.g., cross breed PM x CSR2 and bivoltine hybrid FC1 x FC2). • Mention the extraction methods used for both oil and chitosan. <p>Modification: Reduce redundancy in mentioning male vs female differences for both oil and chitosan content.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>Yes</p>	

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<p>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.</p>	<p>This manuscript demonstrates scientific thoroughness and technical soundness in several ways:</p> <ul style="list-style-type: none">• The study employs established and standardized methods for extracting and analyzing both silkworm pupal oil and chitosan, including solvent extraction for oil and a multi-step process (deproteinization, demineralization, and deacetylation) for chitosan. This adherence to recognized protocols enhances the reliability of the results.• The researchers conducted a comprehensive analysis of physicochemical properties for both oil and chitosan, using multiple parameters (e.g., moisture content, iodine value, saponification value for oil; degree of deacetylation, solubility, viscosity for chitosan). This thorough approach provides a well-rounded characterization of the extracted materials.• The study includes appropriate comparisons, such as comparing the extracted pupal oil to common edible oils (groundnut and sunflower) and the extracted chitosan to commercial chitosan. These comparisons provide valuable context for understanding the potential of silkworm pupal derivatives.• The researchers have considered variables such as silkworm breed (cross breed vs bivoltine hybrid) and sex (male vs female), which adds depth to the study and allows for a more nuanced understanding of how these factors influence the properties of the extracted materials. <p>Statistical analysis is appropriately applied, with measures like F-test, standard error, and coefficient of variation reported, indicating attention to the statistical significance of the observed differences.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> <p>=</p>	<p>The references in this manuscript are generally relevant to the topic, but there are some areas for improvement:</p> <p>Recency: While some references are from recent years (e.g., 2021, 2022), a significant number are older, dating back to the 1990s and early 2000s. This isn't necessarily a problem for fundamental techniques or established knowledge, but it would be beneficial to include more recent studies, especially for comparative purposes and to reflect current trends in the field.</p> <p>Sufficiency: The reference list covers essential aspects of the study, including silkworm biology, oil and chitosan extraction methods, and characterization techniques. However, it could be expanded to provide a more comprehensive background.</p>	

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language and English quality of the article is generally understandable but could benefit from significant improvement to meet the standards typically expected for scholarly communications. Here are some observations and suggestions:</p> <ul style="list-style-type: none"> • Grammar and Arrangement: There are several instances of grammatical errors and unpleasant sentence structures throughout the manuscript. For example, in the abstract: "The oil and chitosan were extracted from silkworm pupae and to check the quality analysed its physicochemical properties." This sentence is unpleasantly constructed and could be rephrased for clarity. • Consistency: There are inconsistencies in formatting and style, particularly in the use of abbreviations and units. For instance, sometimes "per cent" is used, while other times "%" is used. • Technical Language: While the technical terms are generally used correctly, there are places where the phrasing could be more precise or formal. For example, "got the product chitin" in the methods section could be rephrased more scientifically. • Clarity: Some sentences are overly long or complex, which can make them difficult to understand. Breaking these into shorter, more focused sentences would improve readability. • Punctuation: There are some issues with punctuation, particularly with commas and periods, that affect the flow and clarity of the text. • Tense Consistency: The manuscript switches between past and present tense in some sections, which can be confusing. Maintaining consistent tense usage would improve the overall quality. • Formal Tone: Some phrases used are too colloquial for scholarly writing. For instance, "Further, bivoltine hybrids exhibited slightly higher oil content" could be more formally stated. 	
<p>Optional/General comments</p>	<p>Nil</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>	

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