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| Book Name: | [**Food Science and Agriculture: Research Highlights**](https://www.bookpi.org/bookstore/product/food-science-and-agriculture-research-highlights-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4581** |
| Title of the Manuscript: | **Membrane Fouling Dynamics in the Clarification of Pineapple Juice after Egg Albumin Pretreatment: A Study on Hermia’s Empirical****Models** |
| Type of the Article | **Book Chapter** |

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| **PART 1: Comments** |
|  | **Reviewer’s comment****Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **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. A minimum of 3-4 sentences may be required for this part.** | This manuscript is of great importance to the scientific world because it tackles the issue of fouling of the membranes during the clarification of pineapple juice, which is a widely consumed tropical fruit juice. The research offers adequate understanding of using egg albumin as a pretreatment agent in reduction of rheological colloidal substances which helps in membrane filtration processes. Using Hermia’s empirical models enables understanding of the fouling phenomena in microfiltration (MF) and ultrafiltration (UF) and also provides the framework for optimization of membrane processes in the fruit juice industry. The more drastic and novel methods of juice clarification would use less energy and juice while also maintaining the nutritional and sensory characteristics of the pineapple juice, thus the need forfurther research. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | The title, "Membrane Fouling Dynamics in the Clarification of Pineapple Juice after Egg Albumin Pretreatment: A Study on Hermia's Empirical Models," is suitable as it concisely describes the study's emphasis on membrane fouling, egg albumin pretreatment, and the application of Hermia's models. It is however, very lengthy which makes it difficult to understand.New title Suggestions:"Evaluating Membrane Fouling in Pineapple Juice Clarification Using Egg Albumin Pretreatment and Hermia's Models."Or,"Membrane Fouling and Clarification of Pineapple Juice Using Egg Albumin Pretreatment" |  |

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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.** | The abstract is comprehensive and contains the key points of the research, including objectives, methodology, and main conclusions. However, there are certain areas where it can be improved in terms of clarity and completeness.Suggestions for Improvement:The abstract mentions that the study investigates membrane fouling in pineapple juice clarification but does not explicitly mention that the objective is to optimize the process. It would be helpful to add a sentence regarding the broader applicability of the study in increasing the efficiency of juice processing.Include More Methodology Details:While different pore sizes and pressures are mentioned in the abstract, it would be helpful to succinctly describe the primary experimental conditions (e.g., what types of microfiltration and ultrafiltration membranes were used).Explaining why egg albumin was chosen as a pretreatment agent would give background on its applicability.Highlight Key Results More Succinctly:The results regarding the coefficient of determination (R²) values of the different fouling models are important but can be more concisely summarized.Instead of presenting numerical ranges in the abstract, a statement regarding which fouling mechanisms were most dominant (e.g., "Intermediate Pore Blocking (IPB) was found to be the dominant fouling mechanism") would be more readable.Discuss Practical Implications:The implication of the research on industrial practice (e.g., improvement in juice quality, reduction in processing time, or minimization of chemicals) must be briefly stated to demonstrate its relevance beyond academic interest. |  |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript appears to be scientifically correct based on the information provided. Some of the key points that make it scientifically authentic are as follows:The study is well-structured with a clear explanation of the materials, procedures, and experimental setup. The use of egg albumin as a pretreatment agent and Hermia's empirical models in evaluating fouling mechanisms are scientifically sound approaches. The article includes rigorous statistical analysis, with the values for various fouling models providing coefficient of determination (R²) and standard errors. This stringent analysis validates the results and provides evidence for the conclusions arrived at.The data are organized in a logical way, and the discussion of the data connects it to the literature. Identification of intermediate pore blocking (IPB) and gel layer buildup as primary fouling mechanisms is consistent with previous work on membrane fouling in fruit juice |  |

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|  | processing.The conclusions made are according to the data shown and analysis. The study's findings have practical applications towards improving clarification processes in membrane technology and fruit juice processing. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | The references in the manuscript are mostly sufficient and include a blend of basic and current research, which provide a sufficient backdrop to the study. There are certain points where additional references may be included to validate the manuscript, particularly for the discussion on membrane fouling mechanisms, pretreatment processes, and recent advances in membrane technology.There are grammatical errors that the authors need to fix:Changmai - in the manuscript it is written separated Laorkoet - in the manuscript it should be separated et |  |
| **Is the language/English quality of the article suitable for scholarly communications?** | The article's language and English quality are generally adequate for academic communication, but improvements can be made at certain points for greater clarity, readability, and professionalism as a whole. The grammar, syntax, consistency, and general readability must be corrected. Such issues can be resolved by thorough revision and professional editing, increasing the manuscript's clarity and professionalism and making it more readable to the wider academic audience.Grammar and Syntax:* There are occasional grammatical errors and awkward phrasing that could be revised for better readability. For example:

Original: "The research was carried out on the membrane clarification of pineapple juice after pretreatment." Revised: "The research focused on the membrane clarification of pineapple juice following pretreatment."* Some sentences are overly long or complex, which can make them harder to follow. Breaking them into shorter

sentences would improve clarity. |  |
| **Optional/General** comments |  |  |

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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?**  | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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| **Reviewer Details:** |
| Name: | **Galya Hristova** |
| Department, University & Country | **Trakian University, Bulgaria** |