

Preparation and physicochemical stability of tomato seed oil microemulsions

Qiufeng Song^{1,2,3} | Weiliang Guan^{1,3} | Wenyu Liu¹ | Lingzhen Liu⁴ |
Changqing Wei¹ | Luyun Cai^{1,3,5} 

¹ School of Food Science and Technology/Key Laboratory of Xinjiang Phytomedicine Resource and Utilization of Ministry of Education, Shihui University, Shihui, China

² School of Biological and Chemical Engineering, NingboTech University, Ningbo, China

³ Ningbo Research Institute, Zhejiang University, Ningbo, China

⁴ Xinjiang Baisheng Biotechnology Co., Ltd., Ruitou, China

⁵ College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China

Correspondence

Changqing Wei and Luyun Cai, School of Food Science and Technology/Key Laboratory of Xinjiang Phytomedicine Resource and Utilization of Ministry of Education, Shihui University, Shihui, 832000, China.
Email: changqing_wei@126.com and cailuyun@sjtu.edu.cn

Weiliang Guan is the first co-author.
Qiufeng Song and Weiliang Guan contributed equally to this study.

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Abstract: In this study, microemulsions were fabricated using tomato seed oil, water, Tween 80 and citric acid, and then the physicochemical characteristics and the influence of environmental stress were investigated. The physicochemical properties of the microemulsions were evaluated by transmission electron microscopy (TEM), mean particle diameter, polydispersity index (PDI) and conductivity. The phase diagrams of tomato seed oil/Tween 80/citric acid/water microemulsions were constructed under different pHs and ionic strengths. Storage stability of the systems was investigated at 4, 37 and 65°C, and changes in turbidity and lipid oxidation products were monitored. Nano-size zeta potential analyzer results demonstrated that the mean particle diameter and polydispersity index of tomato seed oil microemulsions were 14 nm and 0.014. The transition from W/O to O/W could be detected from electrical conductivity and viscosity data with the increasing of water content. The results showed that the microemulsion areas decreased with increasing pH and NaCl concentrations. What is more, the study proved that tomato seed oil microemulsions exhibited a good storage stability.

KEYWORDS

microemulsion, physicochemical properties, stability, tomato seed oil

Practical Application: In this study, the preparation of tomato seed oil microemulsion can not only make full use of the nutritional value of tomato seed oil, but also ensure the effective protection of the nutrients contained in it, and improve the problem of adding difficult. By using microemulsion as delivery carrier of tomato seed oil, the application of tomato seed oil in food, cosmetics and other fields could be enhanced. Therefore, the preparation of tomato seed oil microemulsion provides a theoretical basis for production practice.

Physicochemical Stability Of Tomato Products

F Rizvi

A decorative graphic consisting of a red circular shape with a white center, partially obscured by a white horizontal bar.

Physicochemical Stability Of Tomato Products:

This book delves into Physicochemical Stability Of Tomato Products. Physicochemical Stability Of Tomato Products is a vital topic that must be grasped by everyone, ranging from students and scholars to the general public. The book will furnish comprehensive and in-depth insights into Physicochemical Stability Of Tomato Products, encompassing both the fundamentals and more intricate discussions.

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 - Chapter 4: Physicochemical Stability Of Tomato Products in Specific Contexts
 - Chapter 5: Conclusion
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