

Nutritional composition and lipid profile of Chinese soft-shell turtle (*Pelodiscus Sinensis*) egg

Nguyen Thi Thach Thao (G11080055)¹, Shin-Yu Chen²

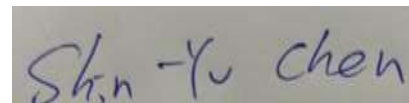
¹International Master's Degree Program in Food Science,
National Pingtung University of Science and Technology, Taiwan, R. O. C.

²Department of Food Science,
National Pingtung University of Science and Technology, Taiwan, R. O. C.

Abstract

Chinese soft-shelled turtle (STT) *Pelodiscus Sinensis* egg has been considered a tonic food for a long time in China, because of its health-promoting properties and widespread popularity in Asia. In this study, the edible portion was obtained after being deshelled SST egg was separated into yolk and albumen. Then, the egg yolk, albumen were freeze-dried at -20°C for further analysis. The average Chinese soft-shell turtle egg contained 50% egg yolk, 34% albumen, and 16 % shell. The dry matter of STT contained 54.64% protein, 29.21% lipid, 5.81% ash, and 10.30% carbohydrate. Furthermore, SST egg was also found to be a good source of minerals with high content of Ca, Mg, K, P, and Na. Eighteen most abundant amino acids were successfully identified in the SST egg, 9 of them are essential amino acids (EEA). The content of lipids in food has a significant impact on human health. In 100 g dried turtle eggs powder contained an average of 24.7 g of triacylglycerol (TAG), 1.24 g of phospholipid (PL), and 0.72 g of cholesterol. Fatty acids in total lipid were analyzed by gas chromatography. Results indicated that lipid composition was the abundant n-3 polyunsaturated fatty acids, an excellent n-6/n-3 ratio (1.27), and low atherogenic index (AI) and thrombogenic index (TI) values, which were considered to be a healthier option for human consumption. Therefore, SST eggs that had high protein content and low cholesterol can be further studied to develop into a functional food product.

Keywords: Chinese soft-shell turtle, Nutritional composition, Triacylglycerol, Phospholipid, Fatty acid.



References

- Chen, S.Y. and Kuo, M.I., 2016. Physicochemical and functional properties of Chinese soft-shell turtle (*Pelodiscus sinensis*) egg. *Food Research International*, 85, pp.36-43.
- Qiu, L., Deng, Z., Zhao, C., Xiao, T., Weng, C., Li, J. and Zheng, L., 2021. Nutritional composition and proteomic analysis of soft-shelled turtle (*Pelodiscus sinensis*) egg and identification of oligopeptides with alpha-glucosidase inhibitory activity. *Food Research International*, 145, p.110414.
- Weng, C., Deng, Z.Y., Zhang, N., Zou, Q., Fan, Y.W., Liu, R., Zhen, L.F. and Li, J., 2020. Lipid profiles of Chinese soft-shell turtle eggs (*Pelodiscus sinensis*). *Journal of Food Composition and Analysis*, 94, p.103627
- Sinanoglou, V.J., Strati, I.F. and Miniadis-Meimaroglou, S., 2011. Lipid, fatty acid and carotenoid content of edible egg yolks from avian species: A comparative study. *Food chemistry*, 124(3), pp.971-977.