

Encapsulation: A Promising Technology for Future Food Applications, but What Policies are Countries Following Today?

Emel H. Yusuf

Department of Fruit, Vegetable and Plant Nutraceutical Technology, The Wrocław University of Environmental and Life Sciences, 37 Chelmońskiego Street, 51-630 Wrocław, Poland

INTRODUCTION

During food processing, different materials and technologies are employed to fabricate ultra palatable foods with long shelf lives. For instance, encapsulation is an encouraging technique for food manufacturers to enclose flavours, vitamins, natural products etc. for attractive foods. However, many people are unaware of the adverse effects of nanomaterials in foods. Besides, food additives are encapsulated in many countries such as Germany, Netherlands, Switzerland, the UK and the USA for commercialized food applications (Lugani et al., 2021). Thus, the encapsulation technology is projected with a high amount of market share, but limited knowledge of nano food digestion is possessed.

Moreover, nanotechnological food packaging applications do not generate any concerns for humans, however, nanoparticles might create some health-related issues such as genotoxicity and cytotoxicity as well (Nile et al., 2020). Hence, the results of nanoparticles on humans, animals and the environment are not known (Bajpai et al., 2018).

References

Rajni, V. K., Kaur, M., Shukla, S., Mishra, D. K., Chandra, P., Prasad, S. K., Kumar, P., Jha, V. S., & Jha, Y. K. (2019). Prospects of nano-encapsulation for food preservation, safety, and security. *Journal of Food and Drug Analysis*, 27(1), 121-124. <https://doi.org/10.1016/j.jfda.2019.06.011>

Lu, L., & Wang, B. C. (2016). P. 88. <https://doi.org/10.1016/j.jfda.2016.06.011>

Mahapatra, M., Ghoshal, M., Ghoshal, S., Bhattacharya, A., Mahapatra, M., Ghoshal, M., Ghoshal, S., & Bhattacharya, A. (2019). In: *Encapsulation in Food and Beverage Processing*. Elsevier, 171-179. <https://doi.org/10.1016/j.jfda.2019.06.011>

Mu, S. H., Bhatia, V., Sahu, D., Nila, A., Sun, J., & Qi, G. (2020). Nanotechnology in Food Research: Applications, Recent Trends, and Future Perspectives. *Nano-Materials*, 10(1), 1-24. <https://doi.org/10.3390/nano10010014>

OBJECTIVES

The study aims to review the regulations regarding encapsulation in different countries to highlight the importance of the issue for future food applications and the health of organisms in nature.

CONCLUSION

The encapsulation technology promises interesting outcomes for food applications not only as food ingredients but also as food packaging, and nanosensors etc. Nevertheless, food materials are tiny, and accumulations in the human body are unknown.

RESULTS

