

CHAPTER 5

CONCLUSION AND FUTURE RECOMMENDATIONS

5.1 Conclusion

Shellfish landings such as cockles and mussels are filter feeders that potentially obtain its food by filtering organic matter or smaller organisms from water surrounding that passes through some parts of its system. In this experiment, the presence of polyethylene, polypropylene and polystyrene has been confirmed on cockles and mussels' samples from Tanjong Karang, Kuala Selangor and Sebatu, Melaka through microscopy and FTIR analysis with characteristics of degraded fragment, thin-elongated filament and spheruloid shaped-pellet with variety of colours includes black, red, grey and yellow. Basically, in 30 g of cockles and mussels, there were microplastics presence in the biota. This preliminary study on occurrence of microplastics in urbanised and rural areas can be used for monitoring and controlling of food safety measures as well as comparative studies in the future. If the plastic waste from current pandemics, industrialization, shipping or trading activities are not treated or controlled properly, it might lead to serious of microplastic pollution in the environment. In brief, the presence of microplastics on each sample was significantly different ($p < 0.05$) to each other, where the results from PCA analysis is inconclusive, due to different geographic social activities at both sampling sites.

5.2 Future recommendations

For further expansion studies on the occurrence of microplastics cockles and mussels, quantification method needs to be done to measure the abundance percentage and distribution of microplastics in the tissues of shellfish bivalves. Further broaden studies on the quantification of microplastics occurrence in biota, sediments, water and the atmosphere (airborne) from other dimension of sampling sites in Malaysia are significant for determination and evaluation of the sources, pathways, and fate of microplastics. For expansion of understanding regarding capability of cockles to trap the particles from the water surrounding, research on structure of cockles and its ability to absorb impurities need to be conducted which will be crucial for microplastics study.