

# Nutritional Content Analyses of Different Types of Malaysian Edible-Birdnest (EBN)



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## Introduction

- EBN also known as “Yan Wo” a known and expensive food among the traditional Chinese community (Marcone, 2005).
- Two swiftlet species EBN known for high nutritional content and medicinal benefits is *Aerodramus fuciphagus* and *Aerodramus maximus*. (Kang, Hails, and Sigurdsson, 1991; Lau and Melville, 1994)
- Water-soluble proteins, carbohydrates, inorganic salts, and various kinds of elements are among the major constituents of EBN that manifest potential nutritional benefits for its consumer .
- Benefits include epidermal growth, inhibiting infection caused by influenza viruses, improving bone strength, anti-cancer and immunity-enhancing properties (Ma and Liu, 2012)
- However scientific information on their nutritional values and medicinal benefits are inadequate.

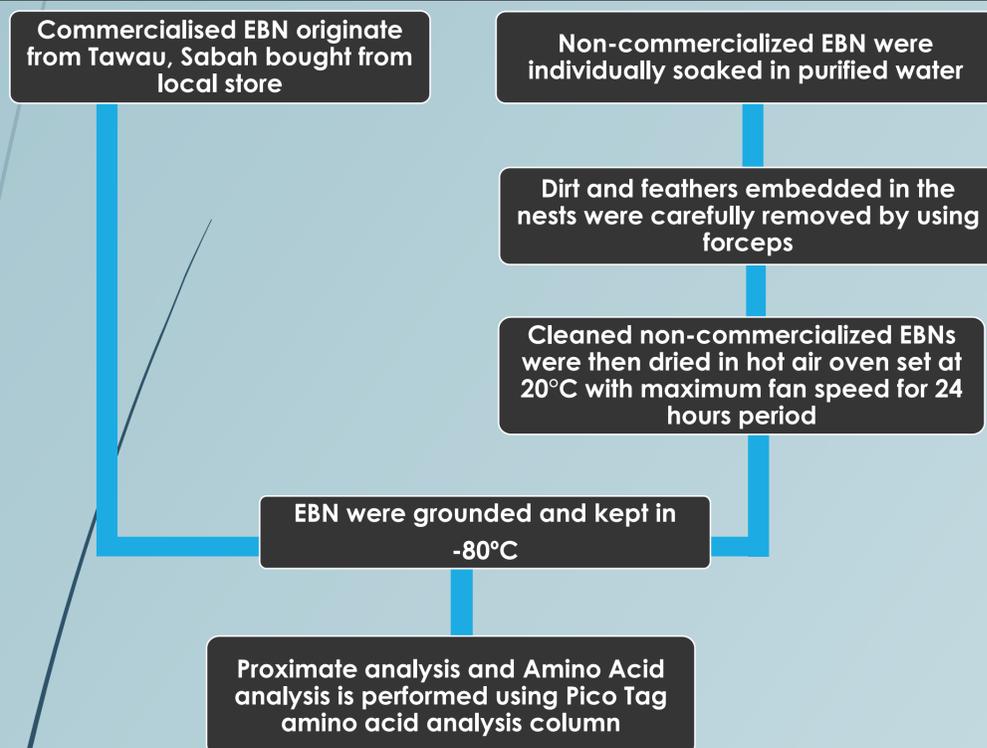
## Objectives

- To investigate the nutritional content of the Malaysian Edible Bird's Nest (EBN)

## Discussion

- Carbohydrate (**47.72%**) was the most abundant composition in commercialized EBN followed by crude protein at **46.60%**.
- However, crude protein was found to be the highest content for non-commercialized EBN at **55.25%**, **56.29%** and **54.19%** from Johor, Kelantan and Perak respectively.
- Protein content of different types of Malaysian EBN was considered to be lower than the protein content of raw Thailand EBN (Saengkrajang et al., 2013) and in other report (Marcone, 2005).
- Cysteine (**126.58%**) was found to be the highest amino acid composition in commercialized EBN. However, it was found to be the lowest in all non-commercialized EBN

## Methods and Results



## Conclusion

Many factors affect the proximate and amino acid composition of the Malaysian EBN such as the diet of the bird, food source, the location and collection time (Norhayatiet al., 2010) to the storage and cleaning procedure (Marcone, 2005). This data will be helpful in the future to determining the health benefits that contributed by the EBN consumption.

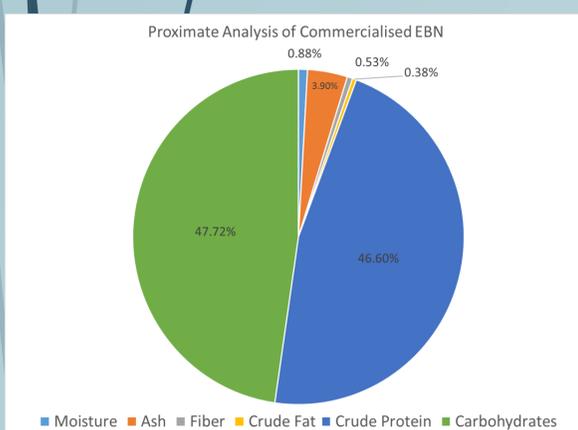


Figure 1. Proximate composition of commercialized EBN

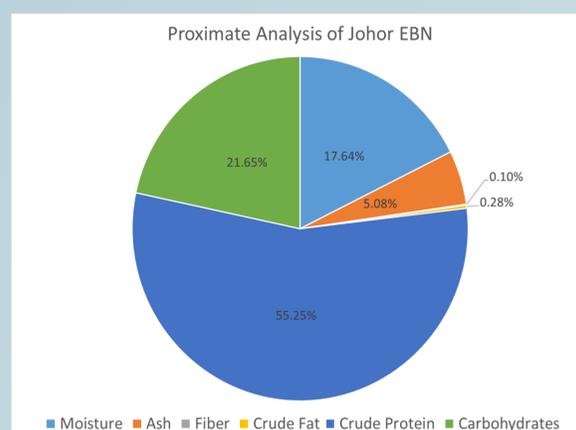


Figure 2. Proximate composition of non-commercialized EBN (Johor)

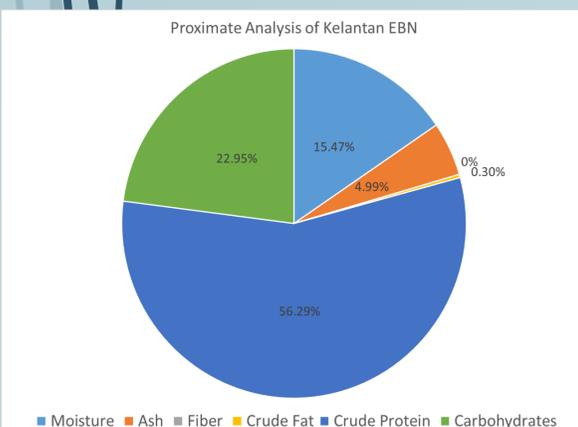


Figure 3. Proximate composition of non-commercialized EBN (Kelantan)

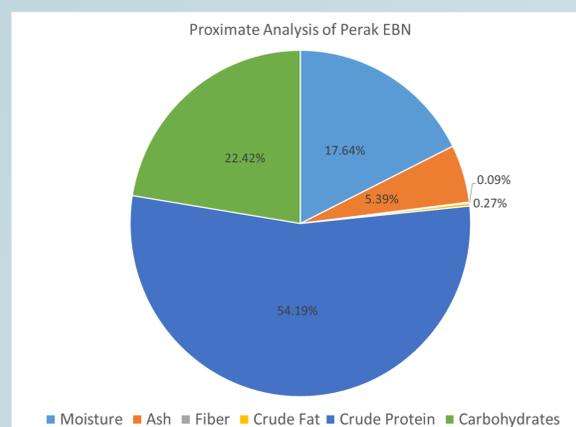
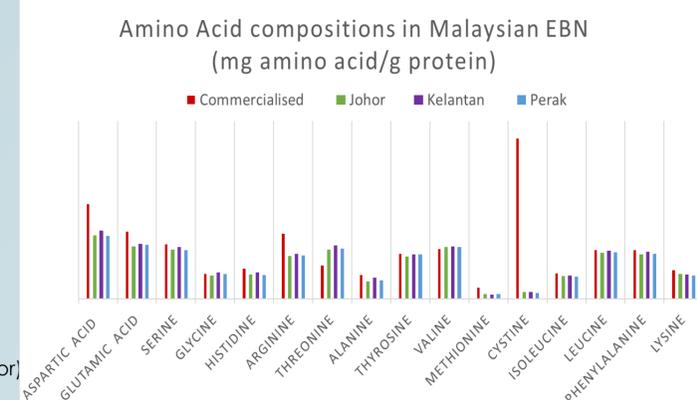


Figure 4. Proximate composition of non-commercialized EBN (Perak)



Graph 1. Amino acid composition of Malaysian commercialized and non-commercialized EBN

## References

1. Marcone, M.F. (2005). *Characterization of the edible bird's nest the Caviar of the East*. Food Research International 38, 1125–1134.
2. Lau, A. S. M., & Melville, D. S. (1994). *International trade in swiftlet nests with special reference to Hong Kong*. Cambridge (UK): Traffic International.
3. Norhayati, M.K., Azman, O. & Wan Nazaimoon, W.M. (2010). *Preliminary study of the nutritional content of Malaysian edible bird's nest*. Malaysian Journal of Nutrition, 16 (3) 389–396.

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