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, Hail, 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 epithelial 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.

Methods and Results

Commercialized EBN originate from Tawau, Sabah bought from local store
Non-commercialized EBN were individually soaked in purified water
Dirt and feathers embedded in the nests were carefully removed by using forceps
Cleaned non-commercialized EBNs were then dried in hot air oven set at 20°C with maximum fan speed for 24 hours period
EBN were grounded and kept in -80°C
Proximate analysis and Amino Acid analysis is performed using Pico Tag amino acid analysis column

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

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 (Norhayati et 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.

References


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

Figure 2. Proximate composition of Johor EBN

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

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