NITRITE IN EDIBLE BIRD NEST: A CONTAMINATION

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INTRODUCTION

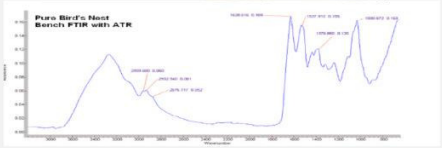
Edible Bird Nest (EBN) industry is rapidly expanding in Malaysia since 2006 and their popularity has spread out. It begins with EBN collected from the cave, then producers started renovating shop houses or built new houses to attract swiflets (*Aerodramus f. fuchipagus*) to produce EBN in their premises.

Now, there are more than 50,000 swiflets premises throughout Malaysia but only 1083 are awarded with Animal Husbandary Accreditation Scheme (SALT), 15 processing plants are awarded for VHM and 4 traders are awarded for GVHP under Department of Veterinary Servives (DVS) to ensure their premises are free from Avian Influenza, Newcastle Disease and Salmonellosis as well as to ensure EBN products are safe for human consumption .

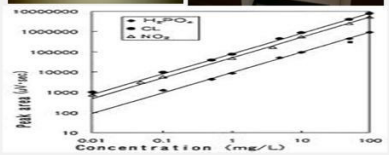
Somehow, the industry was impeded since the banned of the importation by China because of high nitrite content. Hence, Malaysian Standard had limited the amount of nitrite in raw EBN as less than 30 ppm.

METHODS FOR NITRITE ANALYSIS

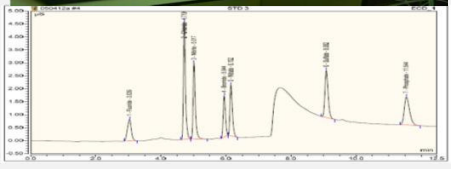
Handheld FTIR



UV-Vis Spectrophotometer



Ion Chromatography



EXPERIMENTAL RESULT

Concentration of Nitrite (mg/kg)	Raw-unclean EBN	Raw-clean EBN
Less than 30	2.1 %	41.5 %
31 - 100	4.3 %	28.3 %
101 - 300	52.1 %	22.9 %
More than 301	41.4 %	7.3 %

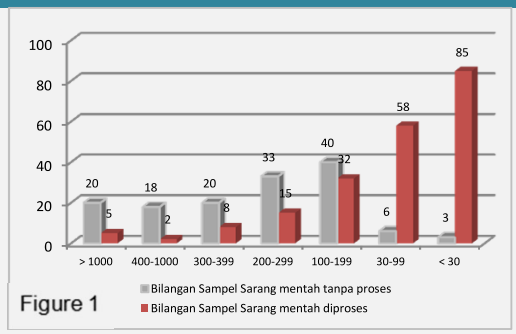
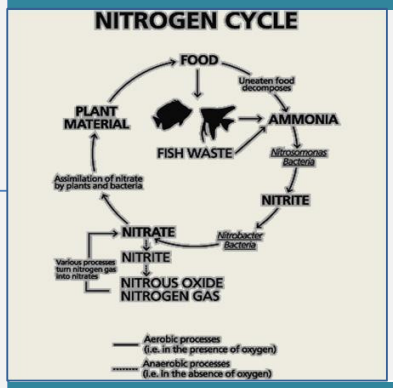


Figure 1

The result shows that raw-unclean EBN contain higher amount of nitrite than raw-clean EBN as shown in Figure 1. While majority of raw-unclean EBN contain nitrite more than 200 mg/kg, majority of raw-clean EBN contain nitrite less than 200 mg/kg.

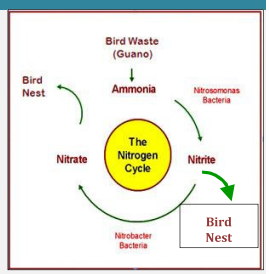
Above table shows that more than 40% of raw-clean EBN met the regulation of less than 30 mg/kg nitrite in sample but more than 90% of raw-unclean EBN contain nitrite higher than 100 mg/kg.

DISCUSSION



Nitrogen cycle in Swiflet house was not in complete cycle since there were no plants to consume those nitrates. Hence, all nitrite and nitrate were accumulated and caused contamination to the nest.

The concentration of nitrite in EBN was expected to be proportional with the amount of bird waste (guano) in the premises.



However, nitrite and nitrate are water soluble and can be wash out during the product processing.

CONCLUSION

Most of all nitrite contained in EBN is due to natural contamination from nitrogen cycle. Somehow, good management of guano in swiflet houses will lead to a significant reduction of nitrite content in EBN. SALT, VHM and GVHP schemes should be encouraged to all EBN producers to ensure EBN products are of high quality and nitrite content is within the set regulation, less than 30 mg/kg.

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