



FOOD SAFETY AND QUALITY DIVISION

MINISTRY OF HEALTH MALAYSIA

**STANDARD OPERATING
PROCEDURE ON THE
CONTROL OF NITRITE LEVEL
IN EDIBLE BIRD'S NEST**

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NO.	DATE OF AMENDMENT	REVISION NO.	AMENDMENT REFERENCE
1.	8 April 2013	01	<p>Para 4.3</p> <p>The words “Skim Keselamatan Makanan 1Malaysia (SK1M)” have been amended to “Makanan Selamat Tanggungjawab Industri (MeSTI)”</p> <p>References</p> <p>The words “Skim Keselamatan Makanan 1Malaysia (SK1M) have been amended to “Makanan Selamat Tanggungjawab Industri (MeSTI)”</p>

1. INTRODUCTION

The Food Regulations 1985 prescribes the standard and labelling requirements for all foods whilst the Food Hygiene Regulations 2009 prescribes the hygiene requirements for all foods and processing establishments including those of animal products which include edible bird's nest (EBN).

The Ministry of Health has conducted a study on the nitrite level in EBN produced in Malaysia. The conclusions were reported as follows:

- a) The natural occurrence of nitrite in EBN is contributed by various factors such as the natural presence of nitrite in bird saliva; formation of ammonia in the bird's nest; presence of ammonia, derived from bird droppings, in the bird's house or cave environment which is finally converted to nitrite in EBN; and bird droppings containing nitrite which contaminate the EBN; and
- b) The preparation processes prior to consumption i.e. soaking and rinsing significantly reduce the level of nitrite in EBN as nitrite is highly soluble in water.

2. OBJECTIVE

This standard operating procedure (SOP) describes the requirements for the reduction of the nitrite level in raw EBN during primary production and processing of raw clean EBN.

3. DEFINITION

3.1 Raw unclean EBN

EBN harvest from cave and ranches which may include but not limiting to sorting, drying, grading, trimming, weighing and packing but, without any cleaning process. There are still visible feathers and impurities.

(MS 2334:2011)

3.2 Raw clean EBN

EBN that has undergone cleaning process which may include but not limiting to sorting, drying, soaking, picking of feathers and impurities, moulding, drying, grading and packing. (MS 2334:2011)

3.3 Softening

Softening is a process wherein the raw unclean EBN is dipped, immersed or added with a certain amount of clean water for a certain period of time.

3.4 Cleaning

Cleaning is a process of removal of impurities including feathers from the raw unclean EBN by various means such as picking or brushing and rinsing.

4. POINT OF CONTROL

4.1 Bird House

Bird house operators are to undertake the following measures, where appropriate:

- (i) to keep any facilities used in connection with primary production and associated operations clean such as equipment, containers, crates, vehicles and vessels;
- (ii) guano shall be removed regularly and shall not be allowed to accumulate;
- (iii) to use potable water, or clean water, whenever necessary to prevent contamination;
- (iv) to prevent contamination caused by animals and pests;
- (v) to store and handle waste and hazardous substances in a manner so as to prevent contamination; and
- (vi) to keep records on cleaning schedule.

4.2 Transport vehicle

Vehicles used in the transportation of EBN, be it in the form of raw unclean or raw clean, shall comply with the requirements of the Food Hygiene Regulations 2009.

The causative factors that contribute to nitrite contamination in EBN include:

- a) Cross contamination from crates and trucks used to transport food products;
- b) Cross contamination with other products;
- c) Product damage due to rough handling and improper stacking; and
- d) Exposure to the surrounding and pest.

4.3 Processing Establishment

Processing establishments for raw EBN shall comply with the requirements of the Food Hygiene Regulations 2009. For compliance to the requirement for implementation of food safety assurance programme, the Guidelines on "Makanan Selamat Tanggungjawab Industri (MeSTI)" may be used as a guide.

The level of nitrite in EBN can be significantly reduced through appropriate softening and cleaning. Hence, industry must implement appropriate softening and cleaning procedures.

The raw unclean house or cave EBN should be sorted and graded according to their degree of cleanliness and impurities. The table below is a guide on the grading of raw unclean EBN according to various attributes:

Grade	Shape	Size	Feathers	Color	Droppings
I	180°	> 4 cm	< 10 spots	White	Absent
II	180°	> 4 cm	Heavy, >10 spots	White/Slightly Yellow	Present
	135°	> 4 cm	Heavy, >10 spots	White/Slightly Yellow	Present
III	90°	-	Heavy, >10 spots	White/Slightly Yellow	Present

5.0 SOFTENING AND CLEANING

Processing of raw EBN which involves softening and cleaning process to reduce the level of nitrite shall be carried out as follows:

- i. The raw unclean EBN shall be softened using clean water e.g. filtered water, alkaline water etc., for easy removal of feathers and impurities.
- ii. The volume of water, duration and frequency of softening and cleaning of raw unclean EBN shall be determined by the processing establishments.
- iii. The appropriate softening and cleaning processes may be determined based on the type, grade or texture of raw unclean EBN.

- iv. During the process of softening, raw unclean EBN may be kept for a certain period of time and at a particular temperature as determined by the processing establishments. This process shall be carried out under hygienic condition to ensure the safety of the raw unclean EBN.
- v. Raw unclean EBN which has been softened shall be cleaned by using tweezers, brush or other appropriate cleaning tools. Raw unclean EBN may be dabbed with clean and highly absorbent material so as to absorb water from the raw unclean EBN.
- vi. A minimum of 2 bowls of clean water shall be used in the cleaning process i.e. (A) 1 bowl for cleaning of tweezers, brush or other appropriate cleaning tools and the other (B) 1 bowl for rinsing the raw unclean EBN.
- vii. Cleaning water shall be changed regularly and the processing establishments shall determine the maximum time for changing of cleaning water.
- viii. Processing establishments shall establish a standard procedure for softening and cleaning taking into account the above criteria based on the parameters in the table below.

Grade	Time to dip raw EBN in water for softening process (min)	Maximum Time to Change Water		Rinsing frequency during cleaning of raw EBN
		Bowl A (for cleaning tweezers)	Bowl B (for cleaning of raw EBN)	
		Volume(l):.....	Volume(l):.....	
I				
II				
III				
Others				

Note:

1. A standard cleaning procedure based on the above parameters is to be established for different types and grades of raw EBN by each processing establishment.
2. Processing establishment may include other additional parameters, if necessary.

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- ix. Processing establishment shall establish procedures for verification which include laboratory testing to confirm that the standard cleaning procedures that have been established and implemented are working effectively to reduce the level of nitrite in raw clean EBN.
- x. Samples for testing of nitrite in raw clean EBN shall be sent to laboratories that use ion chromatography method with limit of detection (LOD) 2 mg/kg or below.
- xi. Processing establishments shall establish appropriate records.

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References

Malaysian Standard 2273:2010 Good Animal Husbandry Practice - Edible Birdnest Swiftlet Ranching and Its Premises

Malaysian Standard 2334:2011 Edible Birdnest (EBN) – Specification

Food Act 1983 (Act 281) & Regulations

Food Hygiene Regulations 2009

Makanan Selamat Tanggungjawab Industri (MeSTI)