Meeting

# Roasted Baru Nut (Dipteryx Alata Vogel) Discussion Paper

### Committee Paper for Discussion - ACNFP/167/02

### Advisory Committee For Novel Foods and Processes

### Notification for Authorisation of Roasted Baru Nut (Dipteryx Alata Vogel) as a Traditional Food from a third country.

### Application Number RP2176

## Issue

A notification for roasted Baru nut (*Dipteryx alata vogel*), a traditional food from a third country, has been received under assimilated Regulation 2015/2283 EU.

The Committee is asked whether there are safety concerns with the proposed use of this traditional food in the GB market. The information from the Committee will provide the basis for risk management decisions made by GB.

## Background

1. In February 2024, the Food Standards Agency (FSA) received the submission for roasted Baru nut from Partnerships for Forests (Brazil). The novel food consists of the fruit species *Dipterix alata Vogel* native to the Cerrado biome, one of the five Brazilian biomes. The applicant intends to market the product as a whole roasted nut, peeled/unpeeled, salted/unsalted to the general population.

2. FSA and Food Standards Scotland (FSS) have four months to provide reasoned safety objections to the Traditional Foods sale in the UK without which the authorisation will proceed. If authorised, the authorisation will be open to any company subject to the specification and conditions of use detailed in the dossier.

Advice on the safety of this traditional food is requested to inform this process.

3. The notification dossier is attached as Annex A. Requests for further information and responses can be found in Annex B with all other supporting documents in Annex C. These annexes contain confidential information.

# This Application

# Identity

4. Baru nut is of the species *Dipteryx alata vogel*. The nut is contained within the fruit that grows on trees found in Paraguay, Bolivia and Columbia. The nut has a firm outer film and is encased in a woody outer shell (endocarp). The nut is rich in carbohydrates, proteins, lipids, minerals as well as secondary metabolites e.g. polyphenols and carotenoids). Whilst referred to as a nut, it is a legume. The applicant has explained verification of the identity of the nut is through appearance, smell or flavour.

# Production Process

5. The applicant states that Baru nut trees grow in the open countryside and are not propagated for commercial purposes. It is noted there is no use of agrochemicals or synthetic fertilizers within the farms where the trees grow. Once matured, the fruits fall off the trees and are collected by local farmers into new burlap sacks holding a maximum weight of 30kg. They are then taken to collection centres (co-operatives). The applicant states that they are then stored away from possible physical, biological or chemical contamination in well-ventilated areas.

6. The fruit is then cracked open (the endocarp) using a semi-automatic sharp blade on a stand. When the shell cracks open, the kernel (nut) pops out into a recipient. The applicant states that the blade is cleaned with 70% alcohol using a towel and does not come into direct contact with the nut. The nuts are sorted to remove debris or bad nuts and stored in new plastic bags that are then put inside a burlap sacks.

7. A second screening is done for debris and low-grade nuts using a semi-automatic sorter that uses two stainless steel cylinders separating nuts by dimension and weight. Physical inspection is also carried out by trained workers for quality assurance, with the nuts proceeding to storage at 26°C in storage

facilities that have ventilation systems suitable to store the nuts till roasting is required which can take up to months.

8. Aflatoxins are identified as a risk, with 1kg of product collected at random for testing. The nuts are ‘quarantined’ till the results are obtained. The applicant cites that it should be noted that the nuts have a robust skin which contains a big percentage of polyphenols such as gallic acids, compounds that have been identified to have antifungal effects.

9. Before roasting commences, checks are done including logging into registry. Roasting is done in a cylindrical coffee roaster that is initially heated to 150°C. The nuts are placed into the cylinder with the temperature falling to 115°C – 120°C, which peaks up to between 130°C and 135°C. The nuts are roasted for 13-15 minutes. Through aroma and visual inspection, samples collected using a sampling spoon determines the status of roasting to be complete. The nuts are released into a cooling bin where they are cooled for 8-10 minutes. They are then collected into a separate bin and packaged.

10. If salting is required, extra virgin coconut oil is liquified to 25.5°C and applied to the nuts so as to enable sea salt to adhere. For skin removal, a machine that uses a combination of centrifuge, compressed air and heat is used for the process. The nuts are vacuum packed and packed in cardboard boxes for wholesale distribution within Brazil and overseas, primarily the USA.

11. A flow chart of the production process and HACCP outlining potential risks and safety controls is provided (Annex C: HACCP spreadsheet). The applicant states that training is provided throughout the process from harvesting to production to ensure safety and all producers have HACCP systems in place. The applicant also states that every roast is considered a batch. Samples from each batch are collected and analysed for heavy metals, aflatoxins, pesticides and microbes. Responses to queries raised for this section are in Annex B: Response 1, 2 and 3.

# Composition

12. The applicant has provided analysis undertaken on 3-11 independent representative batches for the traditional food depending on the analysis (Annex A: 2.3) including Certificates of Analysis, methods of analysis and accreditation certificate (Annex C). The response to have the data systematically presented for ease of assessment can be found in Annex B: Response 1.

13. Proximate and nutritional analysis was performed on 7 samples of the roasted traditional food (2.3: Table 2.3.1). Vitamins and minerals were analysed on 8 samples (2.3: Table 2.3.2). Amino acids and acrylamide were also examined on 3 samples of the roasted nut with ranges at low levels without concern for human health. Water activity was found to be below 0.3 aW which supports the prediction of the stability of the traditional food and deterring microbial growth. Oxygen Radical Absorbance Capacity (ORAC) used to determine the potential antioxidant effects was examined in 3 samples with a range of 206-217µmol (Annex C: Annex 6).

14. The applicant has identified and analysed undesirable substances (Annex C). Aflatoxins (B1+B2+G1+G2) were examined in 11 samples of raw Baru nut. The results were below 2.0 µg/kg (Annex 5). Similarly, heavy metals on the roasted nut were all below levels of quantification (Annex 4). Oxalates and phytic acid on 4 samples of the roasted nut were analysed with oxalates undetected while phytic acid was between 0.02-0.32g/100g (Annex 9). Macroscopic analysis for physical contaminants presented no concern. Pesticides tested on 5 samples were reported to have not been detected at or above the reporting limit (between 0.01-0.05 mg/kg) (Annex 10).

15. Microbiological analysis was performed on 7 non-consecutive batches of the raw nut and 2 of the roasted nuts with results for all parameters within acceptable limits (Annex C: Annex 3).

16. Compositional data from literature was examined by the applicant in relation to key compositional components that are of health concern i.e. phytic acid and tannins due to their anti-nutritional properties and it was cited that when consumed in a balanced diet, the traditional food is unlikely to pose harmful effects since the inhibition of mineral absorption can be balanced by other dietary nutrients such as ascorbic acid. The applicant cites heating/roasting also reduces the anti-nutritional factors based on different studies from literature hence concludes they are of little concern. Tannins were identified in the literature studies to have the ability to reduce digestibility of proteins. The applicant indicates storage of the roasted nut for more than 90 days results in reduction of tannin levels depending on the packaging used hence they are also of little concern (Annex A: 2.3).

17. The applicant also cites investigation on the compositional components on potential risk for genotoxic and carcinogenic substances did not identify any references related to the traditional food.

## Stability

18. The applicant based the stability tests on 5 independent batches of unprocessed and roasted Baru nut. They performed accelerated studies (70% relative humidity at 40°C) for up to 12 months. They state these studies are equivalent to 4 years of storage at ambient temperature and were performed on raw, roasted with and without skin on. The full report has been provided (Annex C: Annex 11 and 12). A brief description of the study and results has been provided in Annex A section 2.3, with a shelf life of 12 months proposed for the roasted whole nut.

## Specification

19. Specification for Baru nut has been provided (Annex A: Section 2.4) with the applicant noting that no prior benchmarks for various parameters for this traditional food exists hence they have based these parameters on values from literature, analytical data and from similar parameters within guidance for other nuts. They also take into account natural variability year to year, with external factors such as environmental conditions.

## Experience of continued use

20. The applicant states that the traditional food has been commercially processed in Brazil since 2001.  A literature review on history of use has been examined from various publications dating back over 25 years with safety conclusions indicating no issues or adverse effects reported by authors (Annex A: 2.5). Typical consumption is the general population with Baru pulp commonly used in cattle feeding during periods of drought as a complimentary source of calories. The traditional food is consumed as a nut with other uses in culinary preparations, and as a substitute for other oily seeds or nuts such as chestnuts and peanuts. The body of evidence suggests the traditional food notified is in line with a food used traditionally in a third country for over 25 years.

## Proposed conditions of use

21. The intended target population for this traditional food is the general population within GB, in the form of whole dry roasted nut with or without the skin, salted or unsalted. It is intended to be consumed as a snack as an alternative to other commonly consumed nuts such as almonds, Brazil nuts etc.

22. Whilst the applicant had stated in the initial application that the traditional food would be used as an ingredient in recipes such as cakes, salads and bread, upon request to clarify all the intended uses and maximum amount levels, they state that Baru nut will only be consumed as a whole snack and not incorporated as an ingredient. Whilst there is no proposed daily intake, the anticipated intake would be similar to a typical serving size for other nuts of up to 30g/day (Annex B: Response 1).

23. The intended role in diet is as a source of protein, monounsaturated fatty acids, calcium, iron, zinc and bioactive compounds with antioxidant activity (phenols, phytates and tannins). Baru nut is nutritionally comparable to peanuts in relation to energy, protein and carbohydrates. The applicant states that it is not anticipated that the intake of this traditional food would be nutritionally disadvantageous to the consumer.

24. It is noted that Baru nut is of the legume family and has allergenicity implications especially to those sensitive to peanuts. The applicant states precautionary labelling will be provided.

# Committee Action Required

- Members are asked whether there are safety concerns that need to be managed with this traditional food from third countries.
- The Committee’s advice will form the basis for the UK’s formal response to the Commission and whether reasoned safety objections are submitted.

ACNFP Secretariat

May 2024

# Annexes

Annex A – Dossier

Annex B – The applicant’s response to requests for further information

Annex C – Supporting documents