

ADVISORY COMMITTEE ON NOVEL FOODS AND PROCESSES

CHIA SEED (*Salvia hispanica* L) FROM BETTER BODY FOODS**Issue**

The Committee is asked to consider information provided by Better Body Foods, who have requested the opinion of the UK Competent Authority on whether their chia seeds should be considered substantially equivalent to chia seeds that are already on the EU market specifically those of The Chia Company. The Committee is asked if it agrees that substantial equivalence has been demonstrated.

Background

1. Chia (*Salvia hispanica* L) is a summer annual herbaceous plant belonging to the Labiatae family. It grows from a seedling to develop lush green foliage before it produces long flowers which are either purple or, less commonly white. These flowers develop into seed pods that contain chia seeds. Today, chia is grown commercially in several South American countries and Australia but they have not been consumed to a significant degree in Europe prior to 1997.
2. In 2003 an application by Craig and Sons was submitted to the UK for the use of chia seeds in bread products at up to 5%. Following a positive UK initial opinion, a number of questions were raised by other EU Member States regarding the safety of the seeds. The applicant provided additional data that were scrutinised by the European Food Safety Authority (EFSA). In EFSA's opinion on chia seeds it noted that there was little difference between chia seeds sourced from the South American countries and Australia¹. The chia seeds were authorised in 2009².

¹ <http://www.efsa.europa.eu/en/efsajournal/doc/996.pdf>

² Commission Decision 2009/827/EC
(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:294:0014:0015:EN:PDF>)

3. An application from The Chia Company, to authorise the use of the seeds in a wider range of products, including baked goods and breakfast cereals, was authorised in January 2013 following a positive opinion from the UK³. A further application from Wow Foods and Drinks Ltd. to extend the use of the seeds in fruit juice and fruit juice blends, was authorised in September 2015 following a positive opinion from the Irish Competent Authority⁴.
4. Novel food authorisations are granted on an applicant-specific basis until January 2018, so other companies seeking to market the same ingredient must gain separate approval. Regulation (EC) 258/97 makes provision for novel foods or ingredients that are substantially equivalent to an existing product to be placed on the market once the applicant has notified the Commission. In most cases, the Commission requires that the applicant first obtain an opinion on equivalence from a Member State. Better Body Foods are requesting such an opinion from the UK Competent Authority.
5. According to Article 3(4) of (EC) 258/97, the notification procedures applies to “foods or food ingredients...which on the basis of the scientific evidence available and generally recognised or on the basis of an opinion delivered by one of the competent bodies...are substantially equivalent to existing foods or food ingredients as regards to their:
 - Composition
 - Nutritional value
 - Metabolism
 - Intended use, and
 - Level of undesirable substances contained therein.”
6. Better Body Foods has provided information to support the claim that their chia seeds, grown in Mexico, are equivalent to an authorised source of chia seeds by The Chia Company. Better Body Foods seek equivalence to use chia seeds in

³ Commission Decision 2013/50/EU

(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:021:0034:0035:EN:PDF>)

⁴ http://ec.europa.eu/food/safety/docs/novel-food_authorisation_2015_chia-seeds_2nd-extension_authorisation-letter_en.pdf

baked goods and other products as listed in Commission Implementing Decision 2009/827/EC and Commission Implementing Decision 2013/50/EU, as authorised for supply by The Chia Company. Better Body Foods are not seeking equivalence for the use of chia seeds in fruit juices. The application dossier and appendices are attached at **Annex A**.

Evaluation

a) Composition

7. The dossier states that chia seeds are grown and harvested mechanically in Mexico. During the growing process, the fields are visited at least weekly in order to evaluate the growth of the chia plants. Prior to entry into the field, the harvesting machines are cleaned thoroughly.
8. The chia seeds are tested before the flowers, leaves and other parts of the chia plant are removed. They are then mechanically de-stoned, cleaned and sorted post-harvest. The whole seeds are then packed for despatch without any further processing. Following harvest, the seeds are placed into new 25 kg bags or 1000kg super sacks, sealed and numbered to identify the specific field in order to maintain purity and traceability.
9. The applicant has compared the published composition of the approved chia seed with three separate batches of their seed. This is summarised in the table below:

Nutrient (%)	Better Body Foods	The Chia Company
Dry matter	93.6 - 94.3	95.0 – 96.8
Protein	16.7 - 20.8	17.4 – 22.4
Fat	26.2 - 29.1	28.5 – 34.7
Carbohydrate	40.3 - 46.6	37.1 – 42.6

Fibre	35.8 - 44.0	32.8 – 40.2
Ash	3.5 - 4.8	4.5 – 5.6

10. The applicant has also compared the fatty acids (Table 2 of **Annex A**), vitamins (Table 4 of **Annex A**) and minerals content of their chia seed with the approved chia. The mineral composition is summarised in the table below.

Minerals Mg/100g	Better Body Foods	The Chia Company
Sodium	19.2 - 78.5	<0.1 - 6
Potassium	735.4 - 1046.0	510.0 - 710.0
Calcium	677.5 - 716.4	500.0 - 640.0
Iron	6.7 - 7.2	5.7 - 15.0
Phosphorous	681.8 – 982.0	600.0 - 870.0
Magnesium	345.1 – 535.0	310.0 - 430.0

11. Small variations can be seen, notably in Sodium levels but the applicant does not regard these to be a cause for concern. The applicant explains that because the crops are usually in mountainous areas at higher altitude the soil in this area has higher mineral content and when the area receives heavy rain, sodium can leach into the upper layers of the soil creating higher than normal sodium concentration. The solonetz soil where the chia seeds are grown is known to naturally contain Sodium at higher concentrations.

12. In all of the analyses, the applicant's data have been compared with published data on the approved product. This pragmatic approach is in line with previous requests for an opinion on equivalence between two sources of chia seed.

b) Nutritional Value and Metabolism

13. The applicant has compared the nutritional profile of its seeds with authorised chia (three separate batches were analysed) and found no significant nutritional differences between its chia seeds and those from The Chia Company.

14. The applicant's chia seed contains about 23.4% protein. Chia seeds have an oil content of approximately one third of their weight, a significant percentage of which is alpha-linolenic fatty acid (an essential omega-3 fatty acid). The applicant states that the Better Body Foods chia seeds are also a source of vitamins A, C, and E, calcium, phosphorous, potassium and zinc, and contain natural antioxidants (chlorogenic acid, caffeic acid and flavanol glycosides).

c) Intended Use

15. The applicant intends to incorporate chia seeds into a range of foods, bread (5%) baked products (10%), breakfast cereals (10%), fruit, nut and seed mixes (10%) and bread (5%) in addition to marketing 100% packaged chia seeds as authorised for supply by The Chia Company.

d) Level of undesirable substances

Chemical and Microbial Content

Chemical Contamination

16. The applicant provided results of heavy metals analyses (arsenic, cadmium and lead) for three separate batches of its seeds and has compared these with data obtained for authorised chia by The Chia Company (Table of 5 **Annex A**). The applicant also provided data relating to mycotoxins (Aflatoxin B1, B2, G1, G2 and Ochratoxin A) for three separate batches of its chia seeds. All results are comparable to those obtained by The Chia Company.

Microbial Contamination

The applicant presented a summary microbiological data in Table 6 of **Annex A** and provided analyses of three separate batches of its seeds and compared these to relevant data for authorised chia seeds. Data relating to yeasts and moulds, *E.coli*, *Salmonella*, coagulase positive Staphylococci, *Bacillus cereus*, Coliforms and Enterobacteriaceae were presented. No concerns were identified and the Better Body Food's chia seed results are comparable to those obtained by The Chia Company.

Committee Action Required

17. The Committee is asked whether it agrees that substantial equivalence has been established between Better Body Foods chia seed and an existing product, from The Chia Company, in accordance with Article 3(4) of Regulation (EC) 258/97.
18. If so, the Secretariat proposes to draft an opinion incorporating the ACNFP's comments on this application which will be presented along with the results of the public consultation at the next meeting July.
19. If not, the Committee is asked what additional information the applicant should supply in order to demonstrate equivalence.

Secretariat

April 2017

Annexes attached:

Annex A - Application Dossier

Annex B - Certificates of analysis