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9/11/22

Dear FSANZ,

Re A1253 – Bovine lactoferrin in infant formula products

Fonterra is a global dairy nutrition company owned by 10,000 farmers and their families. With a can-do attitude and collaborative spirit, we are a world leading dairy exporter. We draw on generations of dairy expertise and are one of the world's largest investors in dairy research and innovation, to produce more than two million tonnes annually of value-added advanced dairy ingredients, foodservice and consumer products for over 140 markets.

Fonterra has a long history in manufacturing paediatric nutrition products, with more than 50 years' experience producing world class infant and young child formulas for markets around the world. Fonterra sells paediatric nutrition formula and ingredients (including lactoferrin) to large multinational and major regional paediatric companies and is one of the world's largest contract manufacturers of these products.

Fonterra welcomes the opportunity to provide comments and information to FSANZ on A1253. We thank FSANZ for the consideration of the comments outlined in this submission.

Fonterra supports the content and views of the Infant Nutrition Council (INC) A1253 submission.

General Comments

Fonterra supports and welcomes the application to amend the Australia New Zealand Food Standards Code to permit the voluntary use of bovine lactoferrin (bLf) as an ingredient in infant formula products (IFP) up to a maximum permitted amount of 40 mg/100 kJ.

bLf has a long and safe history of use in infant formula products sold in many countries outside Australia and New Zealand, including approvals in the EU and China**.** bLf is also exported from Australia and New Zealand by Fonterra and other manufacturers as both an ingredient and ingredient within general purpose foods.

It then follows, the technology to produce bLf is well established in Australia, New Zealand and abroad. With many independent studies from around the world, over many years, having confirmed that bLf is a safe and suitable ingredient for use in IFP and other food products more generally.

Against that background, we agree with FSANZ's assessment that bLf is a safe and suitable ingredient for use in IFP and that the direct and indirect benefits arising from permitting bLf's use in IFP will most likely outweigh any associated costs. We believe that permission would, additionally, promote consistency between domestic and international food standards and has the potential to significantly promote and facilitate domestic exports.

That said, we believe that for industry to fully realise the benefits of this permission, the draft specification should be simplified and modified to ensure consistency with Schedule 3 of the Code and set a workable precedent for future FSANZ ingredient approvals that is in line with international approval processes.

We elaborate on these points by:

- explaining why the proposed variations to the Code are overly and unnecessarily specific in this case;
- explaining why the proposed variations may affect international trade, contrary to the Applicant's position;

- querying why the draft application was not considered under other available approval pathways given the difficulties and uncertainties in applying the Code's definition of "Nutritive Substance"; and
- explaining why exclusivity is not appropriate in this application.

We expand below.

Specification

- We note that the Draft Specifications provided in Supporting Document 1 (SD1) and the Call for Submissions (CFS) differ. Our comments are based on the assumption that the Draft Specification in SD1 is in fact the Specification put forward by FSANZ. That said, the specification provided as the draft variation to Schedule 3- Identity and Purity (the Draft Specification) contains unnecessary parameters.
- The Draft Specification has been very closely based on the Applicant's manufacturing specification, rather than the identity and purity measures needed to meet the regulatory standard and the Code's objectives.
- The Draft Specification is also, crucially, misaligned with EU and China regulatory standards.
- Fonterra is concerned that in replicating a large portion of the Applicant's manufacturing specification, industry will be faced with a specification that is far more restrictive than is necessary to meet food safety objectives in Australia, New Zealand and overseas. And, as a result, the Draft Specification, if enacted, risks excluding sales of IFP that contain bLf which is safe but does not otherwise meet an unnecessary part of the specification.
- By way of example, the Draft Specification's 15mg/100g maximum iron content may restrict manufacturers whose specification aligns with EU and China regulatory standards. This limitation will affect the ability for current bLf manufacturers to compete effectively in the ANZ market and does not promote consistency between domestic and international food standards.
- Further, the Draft Specification's iron content maximum also does not accommodate the typical seasonal variation in iron content of some currently available processing technologies, let alone future innovations. In this manner we do not agree with FSANZ that the Draft Specification is sufficiently generic to allow for future innovation.
- Moreover, benefit and safety studies the Applicant presents support the use of bLf produced to specifications that are different to those set out in the Draft Specification. Against that context, we do not believe there is strong safety or benefit rationale for the proposed specification.
- For instance, section 2.2.5 (Pg 50) of the Application records "*much of the early research across in vitro, in vivo animal models and human clinical studies were undertaken using bLf sourced from either Morinaga Milk or FrieslandCampina. Similarity across the sources infers that the research completed is transferrable across bLf in general, a fact recognised by the European Union in setting a general specification for bLf*."
- It follows, and we agree, that those studies' findings can be appropriately transferred to this Application. In particular, that Morinaga Milk or FrieslandCampina's specifications are safe and could be safely adopted in New Zealand, despite them being different to the Applicant's specifications. (The analytical comparison between the Applicant's product and that of Morinaga and FrieslandCampina is provided in Table 2-11 of the Application. This table shows analytical specification differences, notably in the Iron content between the Applicant and Morinaga. Morinaga iron content levels were recorded up to 21.7 mg/100g. And the specification in Morinaga's GRAS Notice GRN 465 referenced by the Applicant has an iron content maximum ≤ 35mg/100g).
- This case study clearly demonstrates that the iron content maximum specified in the draft proposal is unnecessarily restrictive.

- In considering the above points, we make the following specific comments and proposed amendments to the Draft Specification:
    - Fonterra recommend that the specification's iron content limit be increased from 15mg/100g to 35mg/100g. Our proposed higher iron limit does not affect the safety of the product and is aligned with studies quoted by the Applicant and approvals in the EU (<35mg/100g) and China (<35mg/100g). Specifications provided in US GRAS notices (E.g., GRN 465) also demonstrate that levels above 15 mg/100g are considered safe.
    - We recommend that for clarity and alignment with other jurisdictions, Purity is represented as a "% of peak area" rather than "on a protein basis." We say that because the current wording is not clear as to what is being measured.
    - We note that the Applicant has reported pH in a 10% solution (Tables 2-8 and 2-9) and also in a 2% solution (Tables 2-10 and 2-12). We recommend that pH is reported in a 2% solution which aligns with both EU and China regulatory standards.
    - The chemical formula cited in the Draft Specification, $C_{141}H_{224}N_{46}O_{29}S_3$, is the Lactoferricin B formula (a much smaller bioactive peptide derived from bLf). But, for present purposes, bLf occurs in several forms that each have different empirical formulas; therefore, we do not believe it is appropriate to specify an empirical formula for bLf in Schedule 3.
    - We also recommend FSANZ remove the following parameters from the Draft Specification: *fat, cadmium, mercury, melamine, aluminium, aflatoxin, nitrate, nitrite*. While these elements would likely be captured in a manufacturing specification, we believe their inclusion in the Draft Specification goes beyond what is necessary and desirable to ensure safety under Schedule 3- Identity and Purity.
    - We recommend the CAS number is checked to ensure it is correct for bovine lactoferrin

- To that end, Fonterra believes the Draft Specification can and should be amended as follows to align with EU and China Regulatory Specifications provided in Table 2-10 of the Applicants Submission:

S3—46 Specification for bovine lactoferrin

For bovine lactoferrin, the specifications are the following:

(a) chemical name—bovine lactoferrin;

~~(b) chemical formula—C141H224N46O29S3;~~

(c) CAS number—146897-68-9; **(please confirm)**

(d) description—pink to reddish brown coloured, free-flowing powder;

(e) protein (N x 6.38)—more than ~~95.0%;~~ **93%**

(f) purity ~~(on a protein basis)~~ **(% of peak area)**—more than 95.0%;

(g) moisture—less than 4.5g/100g;

(h) ash—not more than ~~1.3g/100g;~~ **1.5g/100g**

~~(i) fat—not more than 1g/100g;~~

(j) iron—not more than ~~15g/100g;~~ **≤ 35mg/100g**

(k) pH (~~10~~ **2%** solution)—5.2 to 7.2;

(l) solubility transmittance (2% solution, 20°C)—transparent;

(m) lead—~~not more than 0.02 mg/kg;~~ **≤ 1 mg/kg**

~~(n) cadmium—not more than 0.1 mg/kg;~~

~~(o) mercury—not more than 0.1 mg/kg;~~

(p) arsenic—~~not more than 0.02 mg/kg;~~ **≤ 1 mg/kg**

~~(q) melamine—not detected;~~

~~(r) aluminium—not more than 4.8 mg/kg;~~

~~(s) aflatoxin M1—not more than 0.05 µg/kg;~~

~~(t) nitrate—not more than 50 mg/kg;~~

~~(u) nitrite—not more than 2.0 mg/kg;~~

(v) microbial limits:

(i) Salmonella spp—absent in 25 g;

(ii) Listeria monocytogenes——absent in 25 g;

(iii) Cronobacter spp——absent in 10 g.

- Lastly, while manufacturers could file additional applications with less restrictive specifications than currently proposed under this permission, we note that would create additional administrative burden for both FSANZ and industry.
- We do not believe that additional burden is necessary or justified in circumstances where page 13 of the consultation states FSANZ must "*have regard to consistency between domestic and international food standards when developing or varying standards*" and that "*alignment with regulations such as those from the European Union (EU) are particularly relevant for the trade of products to and from Australia and New Zealand*."
- In summary, the Draft Specification does not promote consistency with international standards as demonstrated by Table 2-10 of the Application which shows discrepancies between various parameters included in the draft variation and also maximum iron, lead and arsenic limits which may exclude bLf that is compliant with EU and China regulatory standards.

Impact on International Trade

- The Applicant states that permitted addition of bLf, produced to the Draft Specification, to IFP will support international trade and, for New Zealand, will remove the requirement to exempt export of such IFP containing bLf from the requirements of the FSC under S347 of the Food Act 2014 (Section 1.3.1.2 of the Application).
- Fonterra supports the intent of the Applicant to enable international trade, however we disagree with the above assertion related to the impact on export exemptions.
- The S347 exemption notice currently includes exemptions for the use of bLf in IFP for export to certain markets. This exemption does not specify identity and purity requirements for bLF. The Draft Specification's restrictive identity and purity requirements will mean revising current exemptions for the export of products containing bLf that complies with EU and China standards but may not comply with the FSANZ specification as currently proposed.

Use as a nutritive substance

- Fonterra reiterates it supports FSANZ's decision to permit bLf being added to IFPs.
- That said, we query why FSANZ's permission is based on bLf being "*used as a nutritive substance*".
- Fonterra considers the Code's definition of Nutritive Substance is unclear, difficult to interpret and enforce and is misaligned with other regulatory jurisdictions such as the EU where focus is on safety of an ingredient.
- Indeed, Fonterra supports the ongoing P1024 review of the Nutritive Substances and Novel Foods regime and, longer term, supports removing the nutritive substance definition to more closely align with EU, US and other regulatory approval processes.
- Against that context, we believe other regulatory routes could have been considered to grant this approval. We observe, for instance, that the EU approved bLf for use in infant formula as a novel food. We recognise that an ingredient can be classed as novel for use in foods for infants, but not novel for the general population. And there is clear guidance provided by the Advisory Committee on Novel Foods (ACNF) that bLf is considered a "Not Novel food ingredient" when used in dairy products at 10-100 mg/100mL or 100g.
- The classification of bLf as a nutritive substance for use in infant formula may cast doubt and create confusion around its use in general foods. Fonterra continues to consider that any regime for pre-market assessment for new ingredients should focus on safety, thereby removing the ambiguity in the existing framework and nutritive substance definition, whilst achieving a balance between protecting the integrity of the food supply and supporting industry innovation.

Exclusivity

- Fonterra supports clear exclusivity principles being available for companies submitting applications to change the Code. These principles help to promote future innovations and protect the substantial investment that goes into bringing new innovations to market.
- That said, the information in the Applicant's public submission does not, in our view, support exclusivity being awarded in this case.
- The Applicant says exclusivity is justified because:
    - the Applicant has made "*significant investment in the development of a high-quality bovine lactoferrin ingredient suitable for infant application, and in state-of-the art manufacturing facilities*."; and
    - that the Applicant has incurred significant resource in drafting the application and paying associated fees in full.
- Manufacture of bLf is not, though, new to the Australian and New Zealand dairy industry and there is a long and safe history of use internationally. Further, general improvements in manufacturing facilities and payment of regulatory fees is not clearly linked to innovating and developing new products.
- In these circumstances, it is not clear how the Applicant's reasons provide sufficient justification for a material exclusivity period to be granted nor how that decision aligns with the P305 principles. Those principles clearly explain that exclusivity is designed to "*provide an incentive to industry for innovation and provides a benefit to an applicant that has expended significant resources into the development of a potential novel food*".
- More generally, we believe a standard guideline outlining exclusivity requirements and scope would help provide clarity in preparing future applications.
- We understand originally P305 (2007) permitted the specific provision for exclusivity of novel foods and that this was extended to nutritive substances following endorsement from the Food Ministers Meeting in 2020 in relation to A1155. This indicates that the scope of exclusivity continues to creep beyond what was agreed in 2007. The challenge for industry is that these changes are being managed

through applications rather than a clear consultation to determine and agree on minimum requirements for exclusivity.

- We believe the extension of existing exclusive use permissions needs to be carefully considered to its impact not only to infant formula products but more broadly to the food supply. As such we recommend broader stakeholder consultation on the scope of exclusivity and the threshold for evidence that must be met. P305 provided the opportunity for broad stakeholder engagement on establishing exclusivity requirements, but since then we've observed scope creep in how exclusivity may be applied bringing with it a lack of clarity for the industry.

We thank FSANZ for the consideration of the comments outlined in our submission. If there are any queries relating to this submission, please contact [redacted]

Yours Sincerely,

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