

GOED Technical Committee - Minutes

Date: May 23, 2024

PRESENT (please let us know if you were present, but not listed below)

Christine Krumbholz (KD Pharma)	Roberto Fronzoni (KD Pharma)
Fernando Miranda del Solar (Austral Group)	Lina Cekaite (Aker Biomarine)
Marita Buarø (GC Rieber/Vivomega)	Vibeke Bløndal (BASF)
Simone Staiger (Eurofins)	Bas Arntz (Novosana)
Geir Frode Olsen (Epax Norway/Pelagia)	Ingjerd Lystad (Pharma Marine)
Viorel Marcalescu (MBP Solutions)	Joan de Jong (Bioriginal)
Jai Mishra (BASF)	Rafa Gracia (Solutex)
Chloé Lhomme (Fermentalg)	Manuel Reyes (Colpex)
Heike Meyer (Imperial Oel)	Miranda Yang (ATK Biotech)
Ida Aspmodal (KD Pharma)	Stig Jansson (Grontvedt)
Tina Vestland (Golden Omega)	Boriana Bedjova (HuveNutra)
Meagan Eggebeen (Amway)	Arasen Moodelly (Marine Biotechnology Products)
Mia Brastad (Zooca)	

GOED Staff:

Gerard Bannenberg (GOED)

Guests:

Margaret Liu (ATK Biotech)

Absented:

Jenna Ritter (<i>chair</i> – Nature's Way of Canada)	Jonathan Smith (EuroCaps)
Vicky Lin (GOED)	Frank Möllering (NutriSwiss)
Ellen Schutt (GOED)	Michelle Stout (Amway)
Carol Locke (OmegaBrite)	Tim Johanek (Carlson Laboratories)
Inge Bruheim (Rimfrost)	Gerhard Kohn (Vesteraalens)
Ilke Balci (EasyVit)	Marvin Boyd (Aker Biomarine)
Lilian Thiaux (Olvea)	Chintan Shah (WR Grace)

Invitees for this call:

Isaac Lavi (Common Scents Ltd)

Approval of Agenda and Minutes (Jenna Ritter - committee chair)

- Any comments on the minutes of the last meeting?
 - *No comments.* The minutes of the last meeting were approved.

- The agenda and meeting documentation were sent out on May 22nd, 2024. Any additions or changes?
 - The agenda was approved.

New Technical Committee Members (Jenna Ritter)

- **New members of the Technical Committee**
 - **Katharina Schubert (Wiley Companies)** – *not present*
 - **Bradley DaDalt (Jamieson Laboratories)** – *not present*
- **Members who have left the committee:**

Monograph/Pharmacopeia Updates (Gerard Bannenberg - GOED)

- **Summary report from Working Group on evaluation on methods for EPA/DHA quantification**
 - **Gerard** – The technical Committee Working Group that was constituted in January to evaluate two methods for the quantification of EPA and DHA that are not among those methods we recommend using, has delivered its final summary report. This report, entitled “*Evaluation of method suitability for quantification of EPA, DHA and Total Omega-3 by additional fatty acid methods - AOCS Ce1b-89 and AOAC 996.06*”, was sent to you two weeks ago for review. We have received minor comments – one to state the conclusion upfront, which we have done as an executive summary statement – and a second one with a general grammar revision. Basically, the conclusion of the report is that these two methods, as written, are not suitable for the quantification of EPA and DHA in omega-3 oils. We know that laboratories make modifications to methods, but it is of course impossible to know what those modifications are. As such, we do not consider these two methods suitable for quantification of EPA and DHA in omega-3 oils. The method evaluations are documented in the report, and the contributors are acknowledged at the end. No changes to the content of the report have been suggested. You have received this final report together with the agenda. I would like to ask the Technical Committee if we can approve this report. Any questions?
 - **Joan de Jong (Bioriginal)** – We have the LPP program (*Laboratory Proficiency Program*) done several years in a row. That is executed by AOCS. There is a kind of approval or ranking of good and bad results. What does that mean for the conclusions of this report?

- **Gerard** – The AOCS-GOED Nutraceutical Oils LPP is actually aligned with our Guidance Documents ([link](#)) in which we recommend the use of four methods that are suitable for quantification of EPA, DHA and Total Omega-3. These methods are:
 - ❖ the GOED Analytical Method “*Assay for EPA and DHA*”
 - ❖ the European Pharmacopoeia (Ph.Eur.) method 2.4.29 “*Composition of Fatty Acids in Oils rich in Omega-3-Acids*”
 - ❖ the United States Pharmacopeia (USP) method 401 “*Fats and Fixed Oils*”, and
 - ❖ the AOCS Official Method Ce 1i-07 “*Determination of Saturated, cis-Monounsaturated, and cis- Polyunsaturated Fatty Acids in Marine and Other Oils Containing Long Chain Polyunsaturated Fatty Acids (PUFAs) by Capillary GLC*”

The two methods that were evaluated by the Working group don't belong to these four recommended methods. AOCS Ce 1b-89 and AOAC 996.06 are used by some commercial laboratories and appear in academic publications, but we have always had doubts whether they are suitable for accurate quantification of EPA and DHA in omega-3 oil matrices. This evaluation addressed that. The two methods are not suggested to be used in the LPP - however, a few laboratories do use AOCS Ce 1b-89 as far as I understand, and, not unlikely, with modifications to the original method. So, there may be a minor contribution to the final LPP consensus result from laboratories that use this method, but most of the participants use one of the four methods recommended by GOED.

- **Joan** – Can you list those four recommended methods?
- **Gerard** – Yes, I will include those in the minutes (*see above*)
- **Joan** – If I look at the fatty acids in this document, I think we miss EPA.
- **Gerard** – That is correct. The table you are referring to in the note at the end of the report is one of the reasons why one of the methods (AOAC 996.06) is not considered suitable, precisely because EPA is missing in the external reference standard. That is explained in the evaluation.
- **Gerard** – Any other comments? (*no comments received*). Then we adopt this document. We will give it a nice format and upload it on the technical reports section of our website ([link](#)). And probably have a small note in the GOED Current to confirm when that is done.
- **Action item** – Finalize summary report and upload on the GOED website (**Gerard**)
- **Methods for color determination**
 - **Gerard** – I would like to raise the topic of methods that are in use for the determination of the color of fish oils, concentrates and other omega-3 oils. We have had some recent questions from members about these methods. These are often old methods, and I have

started to make a small index of what methods are out there. But I would like to ask the Technical Committee for input, and perhaps we can make a small compilation and look at that in an upcoming committee call. I plan to send out a short survey, in which you can fill out which method(s) you use, and for which type(s) of omega-3 oils. Also to see if there are any preferred methods, or even official methods for fish oils, which I have not come across yet. I will send that survey to you soon. It will be good to get a little overview together, and possibly include something in our Guidance Documents.

- **Action item** – Send survey on methods for color determination to the Technical Committee (Gerard)

Legislative Updates (Gerard Bannenberg)

- **Update on proposed EC MOSH/MOAH regulation**
 - **Gerard** – I thought we could have a small discussion on the proposed MOSH/MOAH regulation. On the one hand, we have not heard anything from the European Commission (EC) recently. We don't know what is going on right now in Brussels regarding the elaboration of a maximum limit for fats and oils of 2 mg/kg for MOAH, and a proposed indicative limit for MOSH of 15 mg/kg for dietary supplements, and/or 10 mg/kg for (vegetable) oils. We heard at Vitafoods last week that the EC has some kind of update, but we have not been able to track down yet what this may be. Please send us any news you may have from your side.

I like to mention the minutes (27 February, 2024 - [link](#)) of the Standing Committee of Plants, Animal Food and Feed (SCoPAFF), which is an organization within the EC that evaluates contaminants on a regular basis. The minutes are only published a month or two after the meeting, so the information in here is a bit old. Nevertheless, there are some interesting pieces of information.

It confirms that three proposals for regulatory follow up are under development:

- 1 - A regulation for MOAH in food
- 2 – A monitoring recommendation for MOHs in food
- 3 – A regulation on the methods for the sampling and analysis of MOHs in food

On point 2, it is stated that the indicative level should not be used as a threshold for removing products from the market. An unconfirmed rumor is that this proposal may not survive as in practice the level will be interpreted as a threshold and EU food business operators (FBOs) will be held accountable for MOSH in their products.

The minutes also indicate that an information note was prepared and circulated to inform third country FBOs, which are upstream suppliers outside the EU, about awareness raising on the contamination of food with MOHs. At GOED we have not seen this information note still. If anyone on the committee has, please let us know.

The minutes also indicate that for the 17th Codex Committee on Contaminants in Food (CCCF17 - [link](#)) a document will be prepared, so that the EU can bring the matter of MOHs in food to the attention of third country competent authorities. In fact, at the recent CCCF17 meeting, which was recently held in Panama (April 15-19, 2024), the EU has informed Codex through this letter (CX/CF 24/17/20 – agenda item 21 “Information submitted in reply to CL 2024/7-CF” – see page 2 and 3 - [link](#)). In the conclusion of the meeting report (REP24/CF17 - item 173 – [link](#)), CCCF noted that modalities on how to deal with MOH, MOSH and MOAH would need to be discussed. This means that also Codex will start looking at MOH as a contaminant in food.

Lastly, the stakeholder forum held in January and ensuing request for information from stakeholders is mentioned. As you know, GOED submitted a letter on MOH in February, focusing on the analytical challenges we have in our sector with MOH measurements in omega-3 oils. Stakeholder input was also provided with another letter in March on analytical issues with mixed tocopherols. GOED has not received a reply or feedback from the EC to date.

- **Tina Vestland (Golden Omega)** – Have you heard anything about when this regulation may be applied, and if there is a transitionary period? So, that products that have already been produced can stay on the market for some additional period?
- **Gerard** – No, we have no definitive information. During the stakeholder forum it sounded like if this regulation prospers, the soonest it might be implemented would be in the first quarter of 2025. There not been any mention of a transitionary period, as far as we know. *(Note added in the minutes – in the information provided by the EU to CCCF17, it is mentioned that “The adoption of the EU maximum levels and indicative levels is targeted fourth quarter of 2024/ first quarter of 2025)“.*

- **Advances in MOSH/MOAH removal**

- **Gerard** – We do have some positive news about MOH, and that is regarding its removal from omega-3 oils. As you know, whereas the shorter chain MOH, up to about C25, are removed in part by the traditional fish oil refining and distillation methods, it is very difficult if not impossible to remove the longer chain MOH (C30 to C50 and higher). In the past year or so, we have highlighted some specialist companies that are showing some success in

removal of the longer chain MOAH, and some of our members are working with these companies to achieve an improved MOH removal. For example, Artisan Industries that takes a multistage short-path distillation approach (see minutes of October 22, 2022 - [link](#)).

Interestingly, I recently learned that we have one omega-3 oil producer now that has worked out the conditions for the effective removal of also the longer-chain MOSH and MOAH from their oil. They will implement this at industrial scale in August. This is an internal development,

However, there is another GOED member that has already achieved the removal of MOSH/MOAH to achieve MOSH < 7 mg/kg, and MOAH < 2 mg/kg. This company now generously offers their refining capacity as a service to any GOED member that needs this. They have worked in this area for many years, but they want to keep a low profile, so introductions of companies who need this tolling service, will be made on a one-to-one basis. Please reach out to me if you need this service to remove MOSH and/or MOAH from your oils, and I will place you in contact.

Overall, it is great to hear that it appears possible now to achieve omega-3 oils with a low content of MOSH and MOAH. Up to recently, we thought that this family of contaminants was impossible to mitigate effectively once an oil contained it. These developments show that it is possible, in theory, for our sector to meet upcoming regulations. Strongest efforts should obviously focus on avoiding contamination with mineral oils in the first place though. The issue of matrix interference may also remain a difficult problem, we need to see.

- **Chloé Lhomme (Fermentalg)** – Do you have the name of the method, or the general technical approach, to achieve this removal?
- **Gerard** – Sorry, I don't know. These are technologies that are internal to these companies.

All Other Business (Jenna Ritter)

- **MOSH/MOAH - Mineral oil lubricants, and alternative lubricants**
 - **Gerard** – This is more of a request. We have previously started looking into lubricant qualities regarding their MOSH profiles and MOAH content. I have collected a little bit of information on lubricants that are in use by members, but ideally, I like to expand that and have more information on alternative lubricant oils that are free of MOAH, their specific uses and suitability in omega-3 oil production. Is this of interest to anyone?
 - **Tina** – Sounds like a great idea.

- **Action item** – Ask Technical Committee about suitable lubricants in use (**Gerard**)
- **Technical publications notification**
 - **Gerard** – With the agenda, you have all received the list of recent publications on technical developments on omega-3s. As usual, there is a lot of interesting new research published. Have a look and browse through the abstracts.
- **Technical publications notification**
 - **Heike Meyer (Imperial Oel)** – We had some issues with residual solvents in the final product. I would like to ask the committee how to solve the right solvent for the extraction? We use hexane, and after making a short investigation which kind of hexane can be used, I found that there are so many grades available. However, there are no clear indications which are suitable for use in food. So, I like to ask, what should be considered when choosing the solvent, and which grade of hexane should be used?
 - **Gerard** – Any comment from anyone? *No answers.*
OK, we will send out the question to the Technical Committee after this meeting and see if there is anyone who has an answer.
 - **Heike** – Thank you, appreciated.

Presentation: **Isaac Lavi (Common Scents Ltd., Kfar Neter, Israel)** – “*Scent & Consumer Behavior – The Psychology of Smell*”

A copy of the presentation will be shared with the committee after the meeting.

Q&A

- **Gerard** – How stable is the scent that you incorporate into the plastic cup or tab? Does it last for the product shelf life?
- **Isaac** – The plastic tab, or insert, does not oxidize, and does not interact with the ingredients of the nutraceutical. The scent is incorporated into the plastic. Everything is FDA-approved and food grade. There is no interaction. On the contrary, when you use the scented tab, we have studies that show that the shelf life is longer and oxidation is reduced. So, some of scent can decrease the oxidation. With a normal behavior, you take the supplement bottle, you open it, you take a capsule, and you close the bottle. In this way, the scent can last forever. If

you leave the bottle open, it can still last a year, for sure. It is very stable, and the scent is emitted gradually.

- **Chloé Lhomme** – Usually, omega-3 capsules should be stored in the fridge, to favor stability and avoid any oxidation. Is the product made to be used in the fridge as well?
- **Isaac** – Definitely, yes. Anyone who is interested can contact me, and I send you some samples.
- **Gerard** – Do you see any relation between purchasing of a product that has been scented versus non-scented nutraceutical products, on consumer behavior? Is purchasing behavior improved?
- **Isaac** – Yes. We launched the product during Vitafoods 2019. We have big a Portuguese client that is very cooperative. I can tell you that the repeat purchase is much higher, and the consumption experience and brand loyalty has gone up. The best way is to try it. Just contact me for samples. You can try them in your organization, do internal tests and see the results. You will be surprised.

End of meeting.

Summary of Action Items

- **Action item** – Finalize summary report and upload on the GOED website (**Gerard**)
- **Action item** – Send survey on methods for color determination to the Technical Committee (**Gerard**)
- **Action item** – Ask Technical Committee about suitable lubricants in use (**Gerard**)

Date of next meeting

- The next Technical Committee meeting will be scheduled for Thursday, July 11th, 2024

USEFUL LINKS:

- Useful documents that the committee has discussed can be found in the Technical Committee folder. You can upload any material there yourself as well:
<https://drive.google.com/drive/folders/0B-5CurmVIvvETm1Wd29xemU5YVU>
- Past minutes can be found here:
2024 - https://drive.google.com/drive/folders/16WcCbtwh_NY09cnx-pEpnANbubBv7Wmo?usp=drive_link

2023 - https://drive.google.com/drive/folders/1Q_aJTzxZL106KkZJUkgrkLT2MdgDiEXh?usp=share_link
 2022 - <https://drive.google.com/drive/folders/1Pt8CJafBCjIYalZF0ZJ08csPqlzW5XaC?usp=sharing>
 2021 - <https://drive.google.com/drive/folders/1VGy-t4TuWtDUB30jU98unIxWYzpnZuNj?usp=sharing>
 2020 - https://drive.google.com/open?id=1olF0Ab9UeGO_VaQpSshICS3xn0V8IiLK
 2019 - <https://drive.google.com/drive/folders/0B0usR2nagMSpSU1aaTR6Ty0yTE0>
 2018 - <https://drive.google.com/open?id=1lXXmBgN3F9XwZnXKxqq0hwC-oLZl9rc>
 2017 - https://drive.google.com/drive/folders/0B6uJWj5y9FY9NDRRS2lVdUQ1ZW_s
 2016 - <https://drive.google.com/drive/folders/0B6uJWj5y9FY9UVZpU3NLejBIMEk>

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