

GOED Technical Committee - Minutes

Date: January 18, 2024

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

Jenna Ritter (*chair* – Nature’s Way of Canada)
 Hyun-Ah Kim (SGS/Nutrasource)
 Rafa Gracia (Solutex)
 Einar Luthersson (Lysi)
 Andrew Jenkins (Lipid Analytical Labs)
 Geir Frode Olsen (Epax Norway/Pelagia)
 Roger Johan Pettersen (Holtermann)
 Luke McPherson (Mara Renewables)
 Geir Frode Olsen (Epax Norway)
 Chloé Lhomme (Fermentalg)
 Bente Foss (VivoMega/GC Rieber)
 YanJun Zhang (Herbalife)
 Manuel Reyes (Colpex)
 Marvin Boyd (Aker Biomarine)
 Anthony Bible (Wiley Companies/Organic Technologies)
 Tony Bimbo (International Fisheries)
 Tim Johanek (Carlson Laboratories)
 Craig Mallon (DSM)
 Gerhard Kohn (Vesteraalens)
 Carol Locke (Omega Natural Science)

Ingjerd Lystad (Pharma Marine)
 Sunil Choudhary (Omega Natural Science)
 Simone Staiger (Eurofins)
 Christine Krumbholz (KD Pharma)
 Sonia Casanova (Copeinca)
 Frank Möllering (Nutriswiss)
 Claus-Michael Brieber (Henry Lamotte Oils)
 Magdalena Sobieska-Pietrzak (GC Rieber)
 Davina Nagington (Croda)
 Tina Vestland (Golden Omega)
 Arnar Halldórsson (Lysi)
 Vibeke Bløndal (BASF)
 Juergen Gierke (BASF)
 Guy Ben-Zvi (Omega-3 Galil)
 Johannes Kraft (Evonik)
 Ivana Kostic (Colpex)
 Ida Aspmo (KD Pharma)
 Helen Albans (Croda)
 Agata Szygula (TASA)
 Mohamed Koroma (Pharmavite)
 Meagan Eggebeen (Amway)

Gerard Bannenberg (GOED)

GOED Staff:

Ellen Schutt (GOED)

Guests:

Greg Schrader (Nature’s Way of Canada)

Céline Segard (Fermentalg)

Absented:

Inge Bruheim (Rimfrost)
 Dimitri Sclabos (Tharos)
 Jonathan Smith (EuroCaps)
 Bean Wei (ATK Biotech)
 Janet Coonan (Jamieson Laboratories)

Christine Bousses (Fermentalg)
 Chintan Shah (WR Grace)
 Roberto Fronzoni (KD Pharma)
 Kaitlin Roke (GOED)
 Chris Gearheart (GOED)
 Harry Rice (GOED)

Invitees for this call:

Magnus Willen (GC Rieber/VivoMega)

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 January 15th, 2024. Any additions or changes?
 - The agenda was approved.

New Technical Committee Members (Jenna Ritter)

- **New members of the Technical Committee**

- **Members who have left the committee:**

Monograph/Pharmacopeia Updates (Gerard Bannenberg - GOED)

- **Review of 2023 RTP results**
 - **Gerard** – I like to show you an overview of the results of the 2023 Randomized Testing Program (RTP). Every year GOED tests 20-24 EPA/DHA omega-3 dietary supplement from its members, sold on the global market. Members are randomly chosen, one of their products is selected, purchased, and tested according to the GOED Monograph quality parameters. A summary report is produced and uploaded on our website ([link](#)), and the GOED board is informed. Also, all members whose products we tested are informed individually about the results for their product and we discuss the results with them. If there is an issue, we try to find out what happened, ask the company to confirm the finding, and determine if GOED can potentially assist in solving the issue. *(2023 RTP report shown on screen)*
 In brief, last year 23 products were tested, with a varied geographical origin. All products were purchased via the internet, either from a company's sales page, or through an internet retailer, like Amazon. Products were tested by Eurofins, as in previous years. You can read the summary here – [link](#). If you come to the GOED Exchange ([link](#)), I will show you the RTP results of the last five years.
 We also tested a number of other contaminants that are not regulated through the GOED Monograph, but which are of interest to our sector. *(Table with the product and company names removed shown on screen)* So, for the same 20 RTP products we also tested the levels of PAH (polycyclic aromatic hydrocarbons), PFAS, bisphenol A, 3-MCPD- and glycidyl-esters, MOSH and MOAH and plasticizers (phthalates). For PAH and PFAS, all

products were below the LOQ. For bisphenol A, there were four products with low but quantifiable levels. All products had 3-MCPD and glycidyl esters at quantifiable levels but all are meeting the EU maximum limits (2500 and 1000 ug/kg, respectively). For MOSH and MOAH the situation is very variable – all products contained quantifiable levels of MOSH, of which several products with very high levels, likely corresponding to products that were probably exposed to a mineral oil during encapsulation, with some of these also containing MOAH. Only seven products had MOAH levels below 2 mg/kg, the current harmonized action level in the EU and possibly becoming a ML in the near future. Some products had considerable levels of MOAH, up to 32 mg/kg. Of those products sold in Europe, two had levels that might be considered of concern. For plasticizers the situation is interesting in the sense that half of the products contained very low but quantifiable levels of phthalates. Both plasticizers (phthalates) and bisphenol A are thus of interest to keep an eye out for in your operations, and although concentrations are low, this may be overlooked. Of course, on the topic of MOSH and MOAH we are all aware that EU-wide regulations are in the process of being developed and everybody should attempt to mitigate their presence if that is of relevance to your business.

Chloé Lhomme (Fermentalg) – What laboratory did you use for phthalates?

Gerard – This testing was all carried out by Eurofins.

Jenna Ritter (Nature's Way of Canada) – I have a question about the results. Is it possible for the companies whose products that were tested to receive a copy of the results?

Gerard. Yes. All companies whose products we tested have been informed in December and received a copy of the results. And we are currently in dialogue about the results with them.

Craig Mallon (DSM) – The products with the high MOSH content, > 1000 mg/kg, also had the higher MOAH content. Is that an indication that that is an issue with the encapsulation?

Gerard – That is likely, yes. We are familiar with the use of mineral oils used as lubricants in the encapsulation process, and which can contain MOAH as well if the wrong mineral oil type is used. Mineral oils used for encapsulation in the US should be free of MOAH. This may be a particular issue to the US, but we have limited direct evidence to support that idea. We sent out a request for data on finished products this week, directly to the primary contacts of all GOED members. So, if you have any additional data for finished products, we are very happy to receive that to get a better understanding.

Legislative Updates (Gerard Bannenberg)

- **Update on European Commission MOH Stakeholder Forum and ML setting (Gerard)**
 - **Gerard** – Actually today a Stakeholder Forum organized by the European Commission (EC) took place, which Harry Rice (GOED) and I have both attended. It is about to finish right now. This forum was an opportunity for industry associations and other organizations to

present their views and position on what is happening in their sector with respect to the mineral oil hydrocarbon (MOH) topic. The GOED board decided not to present at this meeting. There still is hesitation to get on the radar of the EC, and I could see today that as soon as an organization spoke up about some issue, the EC immediately brushed the issues aside, or used any mention of elevated levels as an argument that maximum limits should be instated because there is an issue apparently. The EC also argued that industry has had more than enough time to carry out mitigation efforts. The EC was interested to get more occurrence data directly whenever an issue or challenge was reported. It is a difficult balance to know when to speak up or not. I can say that several organizations reported serious issues with meeting potential EU MLs – like the spices and the cocoa sectors, with similar challenges like the difficulty in mitigating upstream contamination, often occurring in countries outside the EU, and issues with testing methodology and the presence of interference that preclude quantification. There were also arguments made that the ALARA (as-low-as-reasonably-achievable) principle requires setting a numerical ML and not to an LOQ, which the EC does, nevertheless. The EC argues that that is not an issue, as they want to go to as low as achievable which is the LOQ, and apparently which has been done before. There is a discrepancy about what is understood as ALARA by the industry and ALARA for analytical performance.

It feels like the EC wants to implement MLs as soon as possible. It became clear that that will not happen before the EU parliamentary elections (in June 2024), but mentioned that there will be discussions and a voting by EU member States in the second half of this year, and possible the regulations will then enter into force in Q1 of 2025. So, there is still probably a year of margin to remediate any issues you may have. GOED will be submitting a letter to the EC, outlining our challenges. It will be the board of GOED deciding which arguments to bring forward. The letter is due by February 27th and is currently being drafted with the help of several of our members and the board.

- o **Ellen** – What does this mean for what is already in place in the EU member States? Do they now pause?
- o **Gerard** – No, the current harmonized action limits that were agreed upon in April 2022, will remain in place until any EC approved MLs will be enforced.
- o **Claus-Michael Brieber (Henry Lamotte Oils)** – Certain member states in the EU are already doing as if there were limits. Especially in Germany and in The Netherlands. They strictly obey with the 2 ppm MOAH level. If you place an oil on the market, and the officials get aware and test, and the level is higher than 2 ppm, then there will be a silent withdrawal. The situation in Austria is probably similar. In southern European countries, the markets are a little more flexible in their monitoring and reaction.
- o **Gerard** – So far, we have not heard about any product withdrawals in the omega-3 sector.
- o **Claus-Michael** – It is also a question how deep you are on the radar, how many bottles you have on the store shelf, and how likely it is that a product gets tested. Vegetable oils are much

more likely to get tested. Omega-3 products are more likely to be found on the internet, or in specific stores, so they are a little bit under the radar.

- **Update of information on polychlorinated naphthalenes (Gerard)**

- o **Gerard** – We discussed polychlorinated naphthalenes (PCNs) in the last meeting. I have compiled the available information, which is not much. We don't have any occurrence data for this group of contaminants in omega-3 oils from our members. I have reached out to several laboratories to find out more about testing methods, but none of the laboratories I contacted currently run a method for PCN quantification in edible oils (Eurofins, Neutron, Kirchhoff/Merieux, SGS-Nutrasource). Apparently demand for PCN analysis is so low that it is not of interest for labs to have this testing available today. Another aspect of this discussion is that in the recent draft EFSA Scientific Opinion ([link](#)), for which the period for public comments just closed on January 14, the conclusion was that the risks for human health related to the presence of PCNs in food is considered low. There may not be a great need to be concerned about PCNs then, but I think we should keep this in the back of our minds and keep monitoring any further regulatory news. If anyone has additional information, please send us.

All Other Business (Jenna & Gerard)

- **Technical project - Evaluation of other methods for quantification of EPA/DHA (Gerard/Jenna)**

- o **Gerard** – We are soon initiating a small technical project in the Technical Committee. This will evaluate what we like to call “other” methods for the quantification of EPA/DHA, so distinct from the four methods that GOED currently recommends that its members use for quantification, namely Ph.Eur. 2.4.20, USP 410, the GOED method and AOPCS celi-07. These other methods are mainly AOCS Ce 1b-89 and AOAC 996.06, which are sometimes used by academic laboratories and some other 3rd-party laboratories. We often question whether these other methods are truly suitable for quantification, and we like to evaluate and document whether these are possibly suitable, or indeed clearly unsuitable for accurate quantification in oil matrices. Jenna and I have approached several members of this committee who we thought have deep experience with carrying out omega-3 LCPUFA quantification in omega-3 oils, and have formed a small working group. We will start the work after the GOED Exchange at the end of the month. If anybody on this committee thinks he/she is very experienced in this type of analysis, and you would enjoy the idea to support this work, feel free to reach out to join the working group.

- **GOED's Technology & Innovation Roundup (Gerard)**

o **Gerard** – We would like to announce an activity that GOED has organized. It is called the GOED Technology and Innovation Roundup (*flyer shown on screen*). This event will take place on February 27th, from 10.00 to 12.30 EST. We will be highlighting some of our affiliate members that are more technology and innovation-focused. You can see their names here (Innocon, Camlin Fine Sciences, Köster Marine, Artisan Industries, Sochim, Lipid Analytical Labs, ORIVO, Bruker, Eurofins, Omega Quant Analytics, Novozymes, W.R. Grace). Each company will have the opportunity to present their technology and services, with the idea that other participants can see where innovation is happening and what new technologies are out there, and if there is anything useful that they could implement in their businesses. We really hope that this is an attractive event, and that people will be participating.

o **Ellen** – There is a zoom link, and we are going to put some information about it in the coming Monday's newsletter. And then we will be continuing to mention it throughout the month of February. It is setup as a webinar, so you will be able to just sign up once you get the link on Monday.

- **GOED flyer for 3rd-party laboratories participation in AOCS-GOED Nutraceutical Oils LPP**

o **Gerard** – We have developed a flyer on the AOCS-GOED Nutraceutical Oils Laboratory proficiency program (LPP). The idea is that GOED members can hand this over or send it to the 3rd-party laboratories they work with, as well as provide it to their clients and partners for them to give to the contract laboratories they themselves work with. Over the years we keep hearing about interlaboratory differences in the testing results for EPA, DHA and Total Omega-3. Participation in this LPP is very important for laboratories to gauge their proficiency and take any corrective action if proficiency is not good. We hope that this flyer promoting participation is another tool to stimulate improvements in proficiency in omega-3 testing over time. I will send you a copy together with the minutes. We have also highlighted this in the Current this week ([link](#)).

- **Technical publications notification (Jenna)**

o **Gerard** – As usual, we have sent you with the agenda the listing of recent technical publications. Have a look to see if there is anything of interest to you.

- **GOED Exchange – Technical Committee breakfast**

o Gerard – At the GOED Exchange next week, we are organizing a breakfast for those Technical Committee members that are there. Right now, we have 12 people joining in, which is great. If you will come to the Exchange and had not heard about this yet, let me know, and we will include you in the group.

Presentation: **Magnus Willen (GC Rieber/VivoMega)** – “*Sensory Analysis of Omega-3 Concentrates using dHS-GC/MS*”

A copy of the recorded presentation will be distributed to the committee with the minutes.

Q&A

- o **Gerard** – Thanks for the nice presentation.
- o **Arnar Halldórsson (Lysi)** – Did you collaborate with NOFIMA at all, or was this developed at GC Rieber?
- o **Magnus** – This is GC Rieber work.
- o **Arnar** – John Erik proposed this work a few years ago. We did some collaboration with NOFIMA on this approach. I agree, this is well needed measurement to have and to test quality especially for in-process control, even though it does not always correlate with a sensory panel. I imagine you are using it mainly for in-process control, not for CoA's of finished products?
- o **Magnus** – The aim we have is to use it for some of the finished products.
- o **Arnar** – You would not be able to use this on a CoA since your customer does not have the method to compare. This is not going to be an official method, or is it?
- o **Magnus** – The plan is to have it on specifications, even though it will not be comparable or relatable. The results will indicate that there is a good sensory value on the product.
- o **Arnar** – Have you done this for a triglyceride product, or is only for an ethyl ester product?
- o **Magnus** – This is for a concentrated re-esterified triglyceride, for the moment.
- o **Arnar** – Very interesting, thank you.
- o **Claus-Michael** – There are also some vegetable oils that have high contents of omega-3 acids as triglycerides, like flax seed oil. Have you also developed methods and models for vegetable oils, in order to monitor the volatile components? And see how much they are oxidized. Or only for marine oils?
- o **Magnus** – Currently the method is for re-esterified triglyceride concentrates from fish oil. But the technology can be applied to other types of omega-3 oils or vegetable oils.

- o **Claus-Michael** – Oils like rapeseed oil, linseed oil or flax seed oil, and chia oil – they are all highly oxidizable because they have a high content of omega-3. The chain lengths are a little shorter, but they are highly unsaturated also. Thank you.
- o **Jenna Ritter** – I am wondering a little about your sensory panel. Obviously, you have got people taste and smell these oils and compare that to the GC mass results that you have obtained from the headspace of the samples. Would the preferences of the sensory panel affect whether your model is accurate? If the sensory panel of your company rated a certain oil as a pass, and send it to my company, and we are not in agreement and consider that it does not meet our standard – how do you plan to get around the different ranges of acceptability that tend to vary a bit with geographic region?
- o **Magnus** – Of course the method is all about input data. There can differences in perception. We have a sensory panel that, using specific samples, we try to compare with other sensory panels. To make sure that we are aligned. We also try to describe every tasting as good as possible. But yes, it can be a problem of course.
- o **Bente Foss (Vivomega/GC Rieber)** –We would of course work with the customer to work out if there were any discrepancies in the sensory performance. We understand that the sensory experience portion is not exact science.
- o **Jenna** – OK, thanks, that is great to hear.
- o **Luke McPherson (Mara Renewables)** – Since this model was developed for a finished concentrate, I assume the product is pretty consistent. For products with a more crude substance, like a triglyceride fish oil or an algal oil, could you view the model being applicable? You may have higher variety in volatiles, and wider variety in batches. Could you see it still being applicable with a lot more, I guess, inconsistencies?
- o **Magnus** – It is possible. May be not the same model. There may be a need for a model of each type of matrix. Because there will be a different release of volatiles and disturbances. In a perfect world, we could have the same method for everything.
- o **Gerard** – Are you planning to expand the model to different types of fish oils, algal oils, and ethyl ester concentrates, for example?
- o **Magnus** – We will hopefully get a model for all of our products. For now, we have just focused on re-esterified triglycerides.
- o **Gerard** – Thanks. We will share a copy of this presentation with the minutes, and upload a copy of the recording in our presentations folder ([GOED Presentations \(goedomega3.com\)](http://goedomega3.com)).

End of meeting.

Summary of Action Items

- None

Date of next meeting

- The next Technical Committee meeting will be scheduled for Thursday, February 29th, 2024.

USEFUL LINKS:

- o 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-5CurnVIvvETm1Wd29xemU5YVUU>
- o 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/1O_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_VaOpSshICS3xn0V8liLK
 2019 - <https://drive.google.com/drive/folders/0B0usR2nagMSpSU1aaTR6Ty0yTE0>
 2018 - <https://drive.google.com/open?id=1lXXmBgN3F9XwZnXKxqq0hwC-oLZl9rc>
 2017 - <https://drive.google.com/drive/folders/0B6uJWj5y9FY9NDRRS2IVdUQ1ZW5>
 2016 - <https://drive.google.com/drive/folders/0B6uJWj5y9FY9UVZpU3NLejBIMEk>
- o GOED Presentations - [GOED Presentations \(goedomega3.com\)](http://goedomega3.com)
- o GOED Newsletters: If you do not receive newsletters from GOED, please sign up since this is our best way of communicating with members. Here is the link: <http://eepurl.com/F-p5>