

APPENDIX VII

PROJECT DOCUMENT
PROPOSAL FOR NEW WORK ON AMENDMENT /REVISION TO THE CODEX STANDARD FOR FISH
OILS (CXS 329-2017) - INCLUSION OF CALANUS OIL

(For Approval)

1. Purpose and scope of the proposed amendment

The purpose and scope of the proposed amendment to the *Standard for Fish Oils* (CXS 329-2017) is to include calanus oil derived from the species *Calanus finmarchicus* as a named fish oil, and where relevant amend other sections of the standard to accommodate for this inclusion.

2. Relevance and timeliness

Calanus oil for human consumption has been marketed in Norway and the USA since 2012. Today, Calanus oil is exported to EU countries, USA and Canada. There is an interest for calanus oil in several countries worldwide, as for example in Asia. But exporters experience problems due to the lack of a Codex standard accommodating for calanus oil and uncertainty in importing countries on how to perform quality control and authentication of calanus oil.

The Codex standard for fish oils (CXS 329-2017) was adopted in 2017. The following named fish oils are included: anchovy oil, tuna oil, krill oil, menhaden oil and salmon oil. During the discussion on CXS 329-2017 it was agreed that additional named oils may be added at a later stage as trade becomes significant and fatty acid profiles are robustly documented. Based on new commercial harvesting quotas there is a potential to produce 15,000 tonnes of calanus oil annually. Due to specific properties of calanus oil, where the main lipid class is wax ester, not all essential quality criteria for unnamed fish oils are applicable to calanus oil. Thus, there is a need to accommodate for calanus oil in CXS 329-2017 to avoid trade impediments. The distinct properties of calanus oil makes it amenable for standardisation.

Calanus oil is according to the definition for fish oils (unnamed) in CXS 329-2017 section 2.2. already covered by the standard. But this constitutes a problem for calanus oil, where the main lipid class is wax ester. Whereas the main lipid class in fish body oils and cod liver oil is triglyceride. Due to the high amount of wax esters in calanus oil, not all essential quality factors for fish oils (unnamed) in the fish oil standard are applicable calanus oil. Thus, there is a need to accommodate for calanus oil in CXS 329-2017 to avoid trade impediments. The distinct properties of calanus oil makes it amenable for standardisation.

The high amount of wax esters is specific for calanus oil and clearly distinguishes it from other fish oils. There is a need to include calanus oil as a named fish oil, and to specify specific essential composition and quality factors for calanus oil, when that is justified. Wax esters can be analysed using method AOCS Ch 8-02. As the method is applicable for calanus oil, but not included in the current validation data, it is recommended that AOCS Ch 8-02 is listed as a Type IV method for calanus oil for the determination of wax esters in Recommended Methods of Analysis and Sampling (CXS 234-1999).–

Including calanus oil as a named fish oil will reduce trade impediments and help governments in assessing the quality and the barriers and/or rejection of the product at the trade borders, and help manufacturers and traders documenting product authenticity and traceability.

Today's supply of EPA/DHA for human consumption may be as low as 30% of global demand, based on a recommended daily intake of 500 mg, according to a recent estimate (Hamilton *et al.* 2020). This gap is unlikely to be filled by traditional capture fisheries, due to a majority of stocks being considered fully exploited or overexploited. The gap may be filled by other resources, including such as krill (*Euphasia superba*) and *Calanus finmarchicus*.

The current annual trading volume of calanus oil is limited, estimated at around 25,000 kg. However, the value of calanus oil is high. The volume has been limited due to smaller R&D harvesting quotas and restricted market access. Based on the new commercial harvesting quotas issued in 2019, a potential output of 15,000 tonnes of calanus oil from may be produced. Even if only 50% of this volume is destined for human consumption, this is a high volume compared to many other fish oils already listed as named fish oils.

3. Main aspects to be covered

The proposed amendments to CXS 329-2017 include the following:

- include calanus oil as a named fish oil in section 2.1. Description Named fish oils;
- include the GLC ranges of fatty acid composition for calanus Oil in section 3.1., Table 1;
- specify additional essential compositional criteria for calanus oil in section 3.2.;

- include calanus oil in the section 3.3.2 Quality parameters; recommend that method AOCS Ch 8-02 is included for calanus oil as a Type IV method in *Recommended Methods of Analysis and Sampling* (CXS 234-1999), section 8, for the analysis of wax esters.

4. Assessment against the Criteria for the establishment of work priorities

General criterion

The proposed amendment of the Codex *Standard for fish oil* (CXS 329-2017) for inclusion of *calanus oil as a named fish oil* in the list of species under Section. 2.1. could support governments and traders in assuring product authenticity, traceability, and sustainability of resources, ensuring fair practices in the food trade and taking into account the identified needs for listing of calanus oil in the standard as experienced in several countries.

Criteria applicable to commodities

a) Volume and production and value of trade

According to GOED market report the total volume of fish oils, omega-3 ingredients for human consumption was 111,210 tonnes in 2018. Both the production and global trade of fish oil is increasing. In general fish oil production is taking place in some countries and regions with specialized processing and refining industry. Finished fish oil is then traded globally to countries in all regions. The global demand is increasing, the fastest growth is especially in Asian countries.

According to GOED the volume of calanus oil is limited, 17.000 kg in 2018. In 2019 the production was approximately 25.000 kg. But the value of calanus oil is very high, compared to many other fish oils. This is due to the amount of research and development necessary at the early stages of product development. As the volume increases, pricing is expected to develop accordingly.

Both volume and value for several fish oils are listed in the table below.

Annual production and value of fish oils in 2018 (GOED market report 2019)

	Volume (tonnes)	Value (millions USD)
Common refined oils	40,754	188
Concentrated oils	20,711	485
Menhaden oil	9,405	19
Cod liver oil	8,490	45
Salmon oil	5,285	34
Tuna oil	4,531	196
Krill oil	856	102
Calanus oil	17	5

By the end of 2021, the production of calanus oil will be approximately 52. 000 kg, doubling the volume from 2019. Of this volume, on average 50 % is sold in Europe (EU and Norway) and 50 % in the United States of America.

Based on the annual commercial harvesting quotas, there is a potential to produce 15,000 tonnes of calanus oil annually.

Consumption of calanus oil has been mainly as dietary supplements. Between 2008 and 2021 223.800 kg of calanus oil was manufactured and traded, resulting in the consumption of about 500 million capsules.

b) Diversification of national legislation and apparent resultant impediments to international trade

National legislation for fish oil for human consumption which accommodates for market access also for calanus oil is in place in some countries. In other regions, as for example Asia there is a lack of national legislation for calanus oil with their specific properties. Due to the high amount of wax esters, the quality parameters established in CXS 329-2017 for named fish oils and unnamed fish oils primarily composed of glycerides of fatty acids, are not all applicable for calanus oil. Trade impediments are experienced, especially in the Asian market, due to the lack of a Codex standard accommodating for calanus oil and the uncertainty on how to control the quality and the authentication of calanus oil. Response from trading partners indicate that competent authorities in importing countries would welcome an international standard for calanus oil.

c) International or regional market potential

Based on the annual commercial harvesting quotas issued in 2019 for *Calanus finmarchicus*, the potential annual production may be 15,000 tonnes of calanus oil.

Norway exports calanus oil to EU countries, USA and Canada. There is an interest for calanus oil in several countries worldwide as for example in Asia. But market access is hindered to the lack of standardisation.

d) Amenability of the commodity to standardisation.

Calanus oils is derived from the crustacean *Calanus finmarchicus*, and according to the definition for fish oils (unnamed) in CXS 329-2017 section 2.2. already covered by the standard. But this constitutes a problem for calanus oil, where the main lipid class is wax ester. Whereas the main lipid class in fish body oils and cod liver oil is triglyceride. Due to the high amount of wax esters in calanus oil, not all essential quality factors in the fish oil standard are applicable calanus oil. Thus, there is a need to accommodate for calanus oil in CXS 329-2017 to avoid trade impediments. The distinct properties of calanus oil makes it very amenable for standardisation.

e) Coverage of the main consumer protection and trade issues by existing or proposed general standards

Not applicable.

f) Number of commodities which would need separate standards indicating whether raw, semi processed or processed.

Not applicable.

g) Work already undertaken by other international organizations in this field and/or suggested by the relevant international intergovernmental body(ies)

So far, no similar work by other international organizations has been encountered.

5) Relevance to the Codex strategic objectives

Goal 1: Address current, emerging and critical issues in a timely manner

The proposed amendment of the Codex *Standard for Fish oil* (CXS 329-2017) responds to the need for having an updated and relevant standard for this commodity–

6. Information on the relation between the proposal and other existing Codex documents as well as other ongoing work

The proposed amendment will simply update the existing *Codex standard for fish oil* (CXS 329-2017) to include calanus oil as a named fish oil.

7. Identification of any requirement for and availability of expert scientific advice

None.

8. Identification of any need for technical input to the standard so that this could be planned for

None

9. Proposed timeline for completion of the amendment.

It is expected that two sessions or less are required for the completion of the proposed amendment to the *Codex standard for fish oil* (CXS329-2017) starting from CCFO28.