
**Draft Project plan for the CEN
Workshop on "Guidelines for
characterization of extracts for
the recycling/upcycling of
organic agrifood wastes"**

**Requests to participate in the Workshop
and/or comments on the project plan are
to be submitted by 2024-04-01 to
abenedicto@une.org¹**

Recipients of this project plan are kindly requested to name all patent rights known to them to be relevant to the Workshop and to make available all supporting documents.

2024-02-26 (Version 1)

¹ Applications for participating in the Workshop and comments on the project plan that are not received by the deadline do not need to be taken into consideration. Once constituted, the Workshop will decide whether or not to consider the comments received in good time.

Content

1	Status of the project plan	4
2	Workshop proposer and Workshop participants	4
2.1	Workshop proposer	4
2.2	Other potential participants.....	4
2.3	Participants at the kick-off meeting.....	4
3	Workshop objectives and scope.....	5
3.1	Background.....	5
3.2	Scope	5
3.3	Related activities	6
4	Workshop programme	6
4.1	General	6
4.2	Workshop schedule	6
5	Resource planning	8
6	Workshop structure and rules of cooperation	8
6.1	Participation in the Workshop.....	8
6.2	Workshop responsibilities.....	8
6.3	Decision making process	9
7	Dissemination and participation strategy	9
8	Contacts	10

Summary

This CEN workshop is a proposal coming from the research H2020 project AGRO2CIRCULAR (full title: TERRITORIAL CIRCULAR SYSTEMIC SOLUTION FOR THE UPCYCLING OF RESIDUES FROM THE AGRIFOOD SECTOR), with the aim of transferring the developed technologies and processes to marketable solutions and of spreading the technological advances. A document is expected to be agreed, regarding the characterization and evaluation of extracts for the recycling/upcycling of organic agrifood wastes.

1 Status of the project plan

Draft project plan for public commenting (Version 1)

This draft project plan is intended to inform the public of a new Workshop. Any interested party can take part in this Workshop and/or comment on this draft project plan. Please send any requests to participate or comments by e-mail to abenedicto@une.org.

All those who have applied for participation or have commented on the project plan by the deadline will be invited to the kick-off meeting of the Workshop on **2024-04-05**.

2 Workshop proposer and Workshop participants

2.1 Workshop proposer

<u>Person or organisation</u>	<u>Short description and interest in the subject</u>
<u>Agro2Circular Project Consortium</u>	<p>This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101036838.</p> <p>Agro2Circular is EU project boosting the upcycling of agri-food wastes through innovative routes of valorisation, leading to high extraction yields, bioactives with the purity and stability required to be used for the production of new food, cosmetic and nutraceutical formulation.</p>

2.2 Other potential participants

This CWA will be developed in a Workshop (temporary body) that is open to any interested party. The participation of other experts would be helpful and is desired. It is recommended that:

- Industry and commerce, agricultural primary production sector and food processing sector, cosmetics and nutraceuticals producers.
- Government, regulatory bodies on agri-food sector and cosmetic and nutraceutical sector.
- Consumers
- Academic and research, experts on extraction technologies and on new food, nutraceuticals & cosmetic formulations.

take part in the development of this CWA.

2.3 Participants at the kick-off meeting

The following organisations already signed up to the kick-off meeting prior to the publication of the draft project plan.

DMC RESEARCH CENTER SL
CENTRO TÉCNOLÓGICO DEL CALZADO Y DEL PLÁSTICO

CENTRO TECNOLÓGICO NACIONAL DE LA CONSERVA
AGROTRANSFORMADOS S.A.
LABORATORIOS ALMOND S.L.
PROEXPORT-ASSOCIATION OF PRODUCERS AND EXPORTERS FROM REGION OF MURCIA
CITROMIL SL
SAIREM
EXPERIMENTAL STATION FOR THE FOOD PRESERVATION INDUSTRY
FUNDACIÓN CLUSTER AGROALIMENTARIO DE LA REGION DE MURCIA
FUNDACIÓN PRIMAFRÍO
CETEC BIOTECHNOLOGY SL

3 Workshop objectives and scope

3.1 Background

- **Motivation for the creation of this Workshop**

This workshop is motivated by the currently ongoing Horizon 2020 AGRO2CIRCULAR project (TERRITORIAL CIRCULAR SYSTEMIC SOLUTION FOR THE UPCYCLING OF RESIDUES FROM THE AGRIFOOD SECTOR), whose general objective is the implementation of the first territorial systemic solution for the upcycling of most relevant residues in the agrifood sector (fruits&vegetables and plastic multilayers) into high added value products, powered by a digital tool and constructed upon a systemic approach with high replicable/scalable potential. Specifically, the fruits & vegetables are the group of major contribution to food waste along the food supply chain rising up to > 40% of waste, and are as excellent source of natural bioactives. However, these fruits & vegetables wastes are not exploited. Agro2Circular project works for valorising them by green routes to obtain these bioactives for the production of nutraceuticals, functional foods, and cosmetics.

The creation of this CEN Workshop was identified by the project consortium as a very useful way for the translation of its results to marketable solutions. This initiative aligns the Agro2Circular project with Commission Recommendation (EU) 2023/498 “Code of Practice on standardisation in the European Research Area” and Council Recommendation (EU) 2022/2415 “Guiding principles for knowledge valorisation”.

This workshop will be used for the dissemination of the project and its results reaching stakeholders on national, European and international level. Agro2Circular will lead the development of a CWA closely connected to project objectives and the developed technologies and processes in order to bring these closer to the market and to spread technological advances.

- **Market environment**

The European Commission's policy advocates increasing the recovery of organic waste, reducing the volume of by-products that end up in landfills or incineration, with the consequent reduction of greenhouse gas emissions. Enhancing the recovery of organic by-products is also in line with EU policies of green transition and circular economy.

A wide array of studies has demonstrated the potential of different extracts from agri-food wastes for the enrichment of food formulations as natural alternatives to synthetic additives.

Conventional synthetic food additives	Alternative natural extracts	Wastes
Thickening, texturizing, gelling, & stabilizing agents- Hydrocolloids, phosphates	Dietary fiber, pectin, agar	Fruit (olive, grape, pineapple, citrus, apple, pear), vegetable, algae
Colorants- Erythrosine (red), cantaxanthin (orange), amaranth (azoic red), tartrazine (azoic yellow), and annatto bixine (yellow orange)	Carotenoids: β -carotene, astaxanthin, canthaxanthin, zeaxanthin.	Tomato, paprika, and algae, berries, citrus peels
Emulsifiers- polysaccharides (gum arabic), phospholipids (lecithins)	Okara protein	Soy
Antioxidants- Butylated hydroxy anisole, butylated hydroxytoluene, ethoxyquin, tert-butylhydroquinone, propyl gallate	Phenolic substances	Fruits, vegetables
Preservatives- Nitrates (E240-E259) and nitrites (E249-E250)	Enzymes, bacteriocins, fungicides, salts, essential oils	Fruit peels and seeds

Furthermore, natural compounds may also be regarded as nutraceutical ingredients for products with enhanced nutritional value, health benefits, and longer shelf-life, highlighting phenolics compounds and carotenoids (high antioxidant potential), and dietary fibers (digestive properties). Moreover, some agrifood wastes extracts have been demonstrated for their cosmetic activity (carotenoids from pineapple) or already employed in cosmetic

formulations (such as commercially available lycopene from tomato extraction or essential oils from citrus). But many others could be proposed for further applications, where less effective & more expensive products are currently being used.

Organic solvent extraction is the conventional method to recover bioactives from vegetal matrix including agrifood wastes, however it has important problems: low selective yield (many other molecules co-extracted with the target ones), environmental unsustainability. To overcome the problems alternative green extraction processes are emerging.

The suitability of the extracts obtained from the agrifood wastes to be valorised into different products depends on the raw material and the extraction routes of the bioactive compounds. However, standardized methods or guidelines to characterize and evaluate the extracts do not exist so far. The development of these guidelines will facilitate to systematically compare results across extraction technologies and different raw materials and will allow the end-users of the extracts to evaluate their suitability for the specific final products. This CEN workshop can strongly support the transfer to the market of the new technologies and methods implemented by the Agro2Circular for the valorization of the agrifood wastes.

3.2 Scope

The planned document specifies the methodologies for the analysis of aqueous natural antioxidant extracts obtained from wastes and by-products of the agri-food industry. These methodologies encompass the determination of total polyphenols content, total flavonoid content and antioxidant activity assessment through colorimetric assays employing various techniques. The method for quantifying total polyphenol content involves the use of the Folin-Ciocalteu reagent, while the total flavonoid content is determined using the aluminum chloride method. Multiple methods for evaluating antioxidant activity are described, including ABTS, DPPH, and FRAP assays.

The planned document is applicable to aqueous extracts obtained from agri-food waste and by-products, specifically those originating from vegetables and fruits. Depending on the specific matrix and composition of the extract, it may be necessary to employ different methods for characterizing these extracts.

3.3 Related activities

The subjects of the planned CWA are not at present the subject of a standard. There are also no committees, standards and/or other technical specifications that deal with related subjects.

4 Workshop programme

4.1 General

The kick-off meeting is planned to take place on 5th April 2024 on-line.

A total of 4 virtual workshop meetings (kick-off meeting and Workshop meetings) will be held, during which the content of the CWAs will be presented, discussed and approved.

The CWA will be drawn up in English (language of meetings, minutes, etc.). The CWA will be written in English.

4.2 Workshop schedule

Table 1 shows the preliminary timescale and work programme for the workshop, which may be modified according to the progress of the project.

Table 1: Workshop schedule (preliminary)

CEN Workshop	JAN23	FEB23	MAR24	APR24	MAY24	JUN24	JUL24	AGO24	SEP24	OCT24
Initiation										
1. Proposal form submission and TC response										
2. Project plan development										
3. Open commenting period on draft project plan (mandatory)										
Operation										
4. Kick-off meeting										
5. CWA(s) development										
6. CWA(s) finalised and approved by Workshop participants										
Publication										
7. CWA(s) publication										
Dissemination (see 7)										
Milestones				K	V	V		V/A	P	D

- K** Kick-off
- V** Virtual Workshop meeting
- A** Adoption of CWA
- P** Publication of CWA
- D** Online distribution of CWA

5 Resource planning

The administrative costs of the CEN Workshop will be financed by resources from the Agro2Circular project. The final document will include the following paragraph: "Results incorporated in this CEN Workshop Agreement have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101036838".

Both registration and participation at the CEN Workshop described here are free of charge. The use of electronic meetings will be preferred. Nevertheless, in the case of physical meetings, they will be held in Europe and each participant has to bear his/her own costs for travel, accommodation, and subsistence.

6 Workshop structure and rules of cooperation

6.1 Participation in the Workshop

The Workshop will be constituted during the course of the kick-off meeting. By approving this project plan, the interested parties declare their willingness to participate in the Workshop and will be formally named as Workshop participants, with the associated rights and duties. Participants at the kick-off meeting who do not approve the project plan are not given the status of a Workshop participant and are thus excluded from further decisions made during the kick-off meeting and from any other decisions regarding the Workshop.

As a rule, the request to participate in the Workshop is closed once it is constituted. The current Workshop participants shall decide whether any additional members will be accepted or not.

Any new participant in the Workshop at a later date is decided on by the participants making up the Workshop at that time. It is particularly important to consider these aspects:

- a. expansion would be conducive to shortening the duration of the Workshop or to avoiding or averting an impending delay in the planned duration of the Workshop;
- b. the expansion would not result in the Workshop taking longer to complete;
- c. the new Workshop participant would not address any new or complementary issues beyond the scope defined and approved in the project plan;
- d. the new Workshop participant would bring complementary expertise into the Workshop in order to incorporate the latest scientific findings and state-of-the-art knowledge;
- e. the new Workshop participant would actively participate in the drafting of the manuscript by submitting concrete, not abstract, proposals and contributions;
- f. the new Workshop participant would ensure wider application of the CWA.

All Workshop participants who voted for the publication of the CWA or its draft will be named as authors in the European Foreword, including the organisations which they represent. All Workshop participants who voted against the publication of the CWA, or who have abstained, will not be named in the European Foreword.

6.2 Workshop responsibilities

The Workshop Chair is responsible for content management and any decision-making and voting procedures. The Workshop Chair is supported by the Workshop Vice-Chair and the responsible Workshop secretariat, whereby the Workshop secretariat will always remain neutral regarding the content of the CWA. Furthermore, the Workshop secretariat shall ensure that CEN-CENELEC's rules of procedure, rules of presentation, and the principles governing the publication of CWA have been observed. Should a Workshop Chair no longer be able to carry out her/his duties, the Workshop secretariat shall initiate the election of a new Workshop Chair. The list below covers the main tasks of the Workshop Chair. It is not intended to be exhaustive.

- Content related contact point for the Workshop
- Presides at Workshop meetings
- Ensures that the development of the CWA respects the principles and content of the adopted project plan
- Manages the consensus building process, decides when the Workshop participants have reached agreement on the final CWA, on the basis of the comments received
- Ensures due information exchange with the Workshop secretariat
- Represents the Workshop and its results to exterior

The Workshop secretariat, provided by a CEN/CENELEC national member, is responsible for organising and leading the kick-off meeting, in consultation with the Workshop proposer. Further Workshop meetings and/or web

conferences shall be organised by the Workshop secretariat in consultation with the Workshop Chair. The list below covers the main tasks of the Workshop secretariat. It is not intended to be exhaustive.

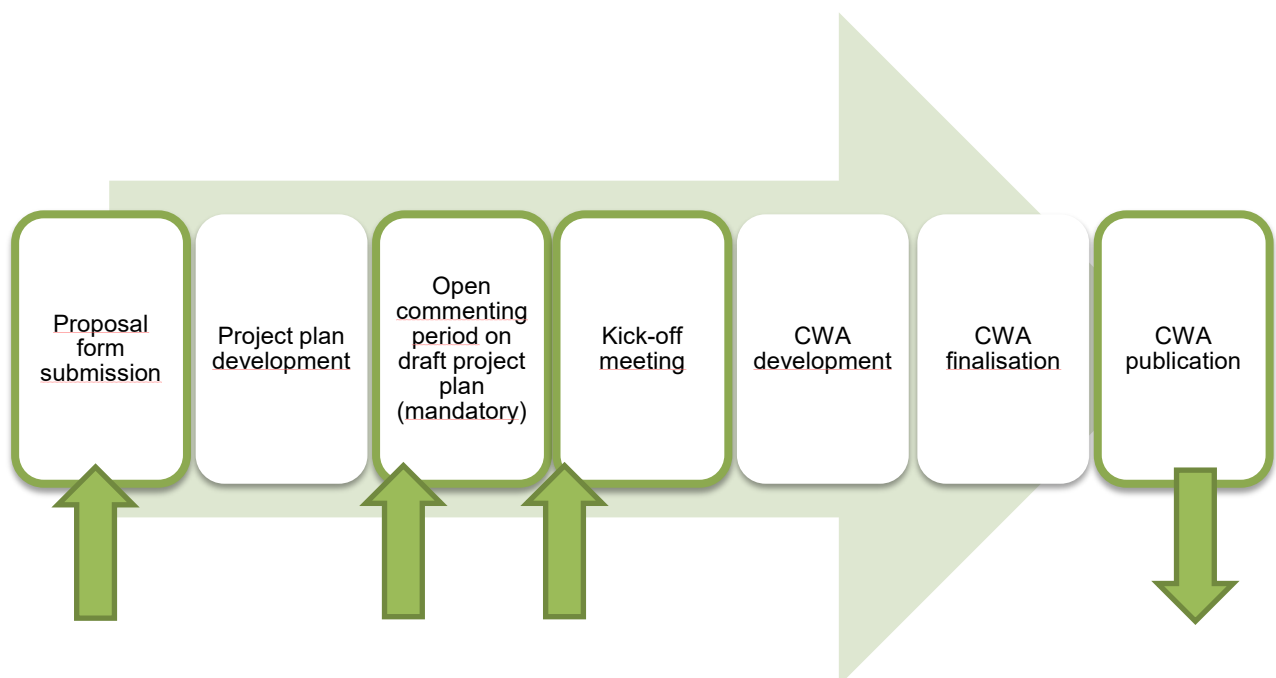
- Administrative and organisational contact point for the Workshop
- Ensures that the development of the CWA respects the principles and content of the adopted project plan and of the requirements of the CEN-CENELEC Guide 29
- Formally registers Workshop participants and maintains record of participating organisations and individuals
- Offers infrastructure and manage documents and their distribution through an electronic platform
- Prepares agenda and distribute information on meetings and meeting minutes as well as follow-up actions of the Workshop
- Initiates and manage CWA approval process upon decision by the Workshop Chair
- Interface with CEN-CENELEC Management Centre (CCMC) and Workshop Chair regarding strategic directions, problems arising, and external relationships
- Advises on CEN-CENELEC rules and bring any major problems encountered (if any) in the development of the CWA to the attention of CEN-CENELEC Management Centre (CCMC)
- Administrates the connection with relevant CEN or CENELEC/TCs

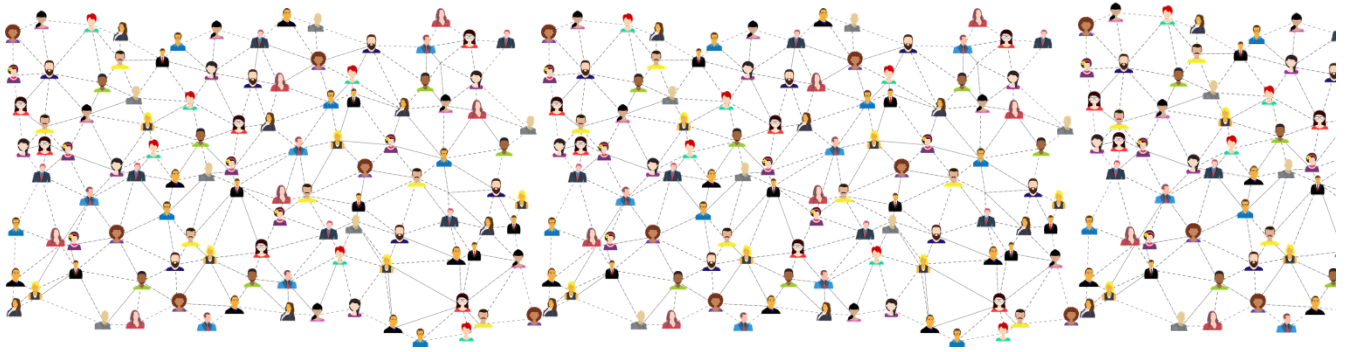
6.3 Decision making process

Each Workshop participant is entitled to vote and has one vote. If an organisation sends several experts to the Workshop, that organisation has only one vote, regardless of how many Workshop participants it sends. Transferring voting rights to other Workshop participants is not permitted. During voting procedures, decisions are passed by simple majority; abstentions do not count.

If Workshop participants cannot be present in the meetings when the CWA or its draft is adopted, an alternative means of including them in the voting procedure shall be used.

7 Dissemination and participation strategy





Proposal form submission

The Workshop proposal will be disseminated to the following relevant stakeholders and bodies for their information:

- CEN/TC 444 Environmental characterization of solid matrices
- CEN/TC 392 Cosmetics
- CEN/TC 275 Food analysis - Horizontal methods

Open commenting period on draft project plan

The project plan will be disseminated to the following relevant stakeholders and bodies for commenting:

- CEN/TC 444 Environmental characterization of solid matrices
- CEN/TC 392 Cosmetics
- CEN/TC 275 Food analysis - Horizontal methods

In addition to the CCMC website, the project plan and the date of the kick-off meeting will be advertised on the Agro2Circular project webpage (<https://agro2circular.eu/>) and its social networks to raise awareness. Interested parties are requested to contribute either through commenting of the project plan (short term) or through Workshop participation (long term).

CWA publication

The final CWA will be disseminated to the following relevant stakeholders and bodies:

- CEN/TC 444 Environmental characterization of solid matrices
- CEN/TC 392 Cosmetics
- CEN/TC 275 Food analysis - Horizontal methods

In addition to the CCMC website, the final CWA will be advertised on:

- Agro2Circular project webpage (<https://agro2circular.eu/>)
- Agro2Circular social media:
 - Facebook
 - Instagram
 - LinkedIn
 - Twitter
- Research Gate

8 Contacts

- Workshop Chair:

José Manuel de la Torre Ramírez
DMC RESEARCH CENTER SL
Adress: Camino de Jayena, 82. 18620. Alhendín (Granada). Spain.
Phone: (+34) 655779320
josemanuel.delatorre@dmcrc.com

- Workshop Secretariat:

Ana Benedicto

UNE, Spanish Association for Standardization
Génova, 6. 28004, Madrid. Spain
Phone: (+34) 650 50 02 08
abenedicto@une.org
www.une.org

- CEN-CENELEC Management Centre

<name>

CCMC
Rue de la Science 23
B - 1040 Brussels, Belgium
+32 2550xxxx
+32 2550xxxx

<e-mail>

<https://www.cenelec.eu/Pages/default.aspx>

- Workshop proposer

AGRO2CIRCULAR Project (European Union's Horizon 2020 research and innovation programme under grant agreement No. 101036838)

Phone: +34 (+34) 655779320

josemanuel.delatorre@dmrc.com

<https://agro2circular.eu/>