

1. Content of the 'Topic Description' document

1.1. Topic area

Management of pests/vectors

1.2. Links to the Euphresco Strategic Research Agenda

The topic addresses the following objective(s) of the 2017-2022 Euphresco Strategic Research Agenda:

- Objective 2017-R-3.1: to identify and evaluate (horizontal) risk reduction options (effectiveness, feasibility and cost)
- Objective 2017-R-7.1: to validate cost-effective and socially acceptable phytosanitary measures for consignments (pre-border and at border)
- Objective 2017-R-7.2: to validate cost-effective and socially acceptable phytosanitary measures at the place of production (inland) for plants, plant products, water and soil

1.3. Topic title

Basic substances as an environmentally friendly alternative to synthetic pesticides for plant protection (BasicS)

1.4. Description of the problem the research should solve

Basic substances are approved for use in the EU and are products which are already sold for certain purposes, e.g. as a foodstuff or a cosmetic, but which can also serve as plant protection products. A list of 22 basic substances approved is available through the EU Pesticide database¹. These substances are mostly biorationals (medicinal plant extracts), products used in human medicine (chitosan), food compounds (milk, whey, vinegar, beer, fructose, sucrose, lecithin, oils) or common substances (talc, bicarbonate, amino acids, clay and charcoal) but used as plant protection products. The project should aim to test and validate the use of basic substances as phytosanitary measures. All partners have experience in the application of basic substances and potential basic substances in the field or postharvest, and/or in their mechanisms of action, and/or in their chemical characterization and/or in their approval process. Among partners, ITAB is the leader for the inclusion of these basic substances in Europe, with 17 basic substances managed (out of 22) at general regulation and many transfers in organic production for crop protection.

1.5. Description of the expected results

Copper is an active substance used against a number of pests, including those responsible for powdery and downy mildew, black rot, ESCA and Black Dead Arm (BDA). Copper is listed as candidate for substitution and the quantities that can be used per hectare per year have reduced from 6 to max 4 kg/ha/year. There is a need for copper to be complemented by or substituted with other substances that are more environmentally friendly and safer to use. The project will demonstrate the efficacy of approved basic substances and basic substance candidates to replace copper or enable reduction of its use. Also, the project will demonstrate the use of basic substances to manage postharvest diseases of fresh fruit, vegetables and aromatic plants and to the management of seedborne pathogens on several crops (cereals, vegetables, etc.), for which there is a reduced number of effective synthetic pesticides.

¹ <https://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=activesubstance.selection&language=EN> then "approved" and type "basic substances"

1.6. Beneficiaries of this research product

- All farmers and more generally all stakeholders interested in the production, transformation and marketing of agricultural products will benefit from the results of the project;
- Consumers would also benefit from the project's findings, as basic substances have no residues of concern;
- Decision makers will benefit from scientifically validated results to promote the use of alternatives to synthetic pesticides and increase environmental sustainability of agricultural processes.

1.7. Research funders and research contribution/ distribution

Funding organisation	Research activity and researchers involved
1. Marche Polytechnic University, Italy Gianfranco Romanazzi g.romanazzi@univpm.it	-Project coordination -The group will focus on the following crops: grapes, stone fruits and other fruit crops, vegetables; -The group will focus on the following pathogens: downy mildews, postharvest decay agents, seedborne pathogens Contact person: Gianfranco Romanazzi E-mail address: g.romanazzi@univpm.it Contact person: Marwa Mourni
2. Council for Agronomic Research and bioeconomy, Italy Luca Riccioni luca.riccioni@crea.gov.it	-The group will focus on the following crops: wheat and vegetables crops; -The group will focus on seedborne pathogens Contact person: Luca Riccioni E-mail address: luca.riccioni@crea.gov.it
3. International Centre for Advanced Mediterranean Agronomic Studies, Italy Simona Marianna Sanzani sanzani@iamb.it	-The group will focus on the following crops: citrus, stone fruits, vegetables; -The group will focus on the following pathogens: postharvest decay agents; Contact person: Simona Marianna Sanzani E-mail address: sanzani@iamb.it
4. New South Wales, Department of Primary Industries John Golding john.golding@dpi.nsw.gov.au	-The group will focus on the following crops: tropical fruits; -The group will focus on the following pathogens: postharvest decay agents Contact person: John Golding E-mail address: john.golding@dpi.nsw.gov.au
5. State University of Londrina, Brazil Sergio Ruffo Roberto sroberto@uel.br	-The group will focus on the following crops: grapes; -The group will focus on the following pathogens: postharvest decay agents



	Contact person: Sergio Ruffo Roberto E-mail address: sroberto@uel.br
6. Cyprus University of Technology, Cyprus Nikolaos Tzortzakis nikolaos.tzortzakis@cut.ac.cy	-The group will focus on the following crops: fruit crops, vegetables; -The group will focus on the following pathogens: postharvest decay agents Contact person: Nikolaos Tzortzakis E-mail address: nikolaos.tzortzakis@cut.ac.cy
7. University of Atlantico, Colombia Yeimmy Yolima Peralta Ruiz yeimmyperalta@mail.uniatlantico.edu.co	-The group will focus on the following crops: tropical fruits; -The group will focus on the following pathogens: postharvest decay agents Contact person: Yeimmy Yolima Peralta Ruiz E-mail address: yeimmyperalta@mail.uniatlantico.edu.co
8. Crop Research Institute, Czech Republic Roman Pavela pavela@vurv.cz	-The group will focus on the following crops: grapes, fruit crops, cereals, vegetables; -The group will focus on the following pathogens: downy mildews, postharvest decay agents, seedborne pathogens Contact person: Roman Pavela E-mail address: pavela@vurv.cz
9. Agricultural Research Center, Egypt Youssef Khamis youssefeladawy@yahoo.com	The group will focus on the following crops: grapes, citrus, fruit crops; -The group will focus on the following pathogens: postharvest decay agents Contact person: Youssef Khamis E-mail address: youssefeladawy@yahoo.com
10. Technical Institute for Organic Agriculture, France Patrice Marchand patrice.marchand@itab.asso.fr	-The group will focus on the approval at pesticide regulation of the substance or extension of use: application, admissibility, follow-up, approval process, implementation at EU level, including organic farming if necessary Contact person: Patrice A. Marchand E-mail address: patrice.marchand@itab.asso.fr Contact person: Yann Davillerd
11. University of Debrecen, Hungary Erzsebet Monika Karaffa karaffa@agr.unideb.hu	-The group will focus on the following crops: grapes, stone fruits and other fruit crops; -The group will focus on the following pathogens: downy mildews, postharvest decay agents Contact person: Erzsebet Monika Karaffa E-mail address: karaffa@agr.unideb.hu
12. Islamic University of Azad, Iran	-The group will focus on the following crops:



<p>Mehdi Hosseinifarahi m.hosseini.farahi@gmail.com</p>	<p>grapes, stone fruits, vegetables; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Mehdi Hosseinifarahi E-mail address: m.hosseini.farahi@gmail.com</p> <p>Contact person: Mohsen Radi</p> <p>Contact person: Mohammad Mahdi Jowkar</p>
<p>13. Agriculture and Food Development Authority, Ireland</p> <p>Dónall Flanagan donall.flanagan@teagasc.ie</p>	<p>-The group will focus on the following crops: nursery plants; -The group will focus on the following pathogens: downy mildews and others</p> <p>Contact person: Dónall Flanagan E-mail address: donall.flanagan@teagasc.ie</p>
<p>14. Aro Volcani Center, Israel</p> <p>Noam Alkan noamal@volcani.agri.gov.il</p>	<p>-The group will focus on the following crops: tropical fruits; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Noam Alkan E-mail address: noamal@volcani.agri.gov.il</p>
<p>15. University of Bari, Italy</p> <p>Antonio Ippolito antonio.ippolito@uniba.it</p>	<p>-The group will focus on the following crops: grapes, stone fruits and other fruit crops; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Antonio Ippolito E-mail address: antonio.ippolito@uniba.it</p>
<p>16. University of Foggia, Italy</p> <p>Giacinto Salvatore Germinara giacinto.germinara@unifg.it</p>	<p>-The group will focus on the following crops: olive, grapes, vegetables; -The group will focus on the following pests: fruit flies</p> <p>Contact person: Giacinto Salvatore Germinara E-mail address: giacinto.germinara@unifg.it</p>
<p>17. University of Milan, Italy</p> <p>Silvia Toffolatti silvia.toffolatti@unimi.it</p>	<p>-The group will focus on the following crops: grapes; -The group will focus on the following pathogens: downy mildews</p> <p>Contact person: Silvia Toffolatti E-mail address: silvia.toffolatti@unimi.it</p>
<p>18. University of Napoli, Italy</p> <p>Filomena Sannino fsannino@unina.it</p>	<p>-The group will focus on the following crops: stone fruits and other fruit crops; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Filomena Sannino E-mail address: fsannino@unina.it</p>



<p>19. University of Teramo, Italy</p> <p>Clemencia Chaves-López cchaveslopez@unite.it</p>	<p>-The group will focus on the following crops: tropical fruits; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Clemencia Chaves-López E-mail address: cchaveslopez@unite.it</p> <p>Contact person: Junior Bernardo Molina Hernandez</p>
<p>20. University of Turin, Italy</p> <p>Monica Mezzalama monica.mezzalama@unito.it</p>	<p>-The group will focus on the following crops: grapes, fruit crops, cereals; -The group will focus on the following pathogens: downy mildews, postharvest decay agents, seedborne pathogens</p> <p>Contact person: Monica Mezzalama E-mail address: monica.mezzalama@unito.it</p> <p>Contact person: Davide Spadaro E-mail address: davide.spadaro@unito.it</p>
<p>21. University of Verona, Italy</p> <p>Nicola Mori nicola.mori@univr.it</p>	<p>-The group will focus on the following crops: grapes, vegetables; -The group will focus on the following pests: fruit flies</p> <p>Contact person: Nicola Mori E-mail address: nicola.mori@univr.it</p>
<p>22. Technical Institute of Tepic, Mexico</p> <p>Porfirio Gutiérrez Martínez pgutierrez@itteplic.edu.mx</p>	<p>-The group will focus on the following crops: tropical fruits; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Porfirio Gutiérrez Martínez E-mail address: pgutierrez@itteplic.edu.mx</p>
<p>23. Spanish National Research Council, Spain</p> <p>Luis González-Candelas lgonzalez@iata.csic.es</p> <p>Teresa Garde-Cerdán teresa.gardecerdan@gmail.com</p>	<p>-The group will focus on the following crops: citrus, pome fruits; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Luis González-Candelas E-mail address: lgonzalez@iata.csic.es</p> <p>Contact person: Ana-Rosa Ballester</p> <p>-The group will focus on the following crops: grapes; -The group will focus on the following pathogens: downy mildews</p> <p>Contact person: Teresa Garde-Cerdán E-mail address: teresa.gardecerdan@gmail.com</p>



<p>24. National Institute for Agronomic Research, Tunisia</p> <p>Mohamed Bechir Allagui allagui.bechir@gmail.com</p>	<p>Contact person: Eva P. Pérez-Álvarez</p> <p>-The group will focus on the following crops: grapes, fruit crops, vegetables; -The group will focus on the following pathogens: postharvest decay agents, seedborne pathogens</p> <p>Contact person: Mohamed Bechir Allagui E-mail address: allagui.bechir@gmail.com</p> <p>Contact person: Kais Mezrioui</p>
<p>25. Ege University, Turkey</p> <p>Pervin Kinay Teksur pervin.kinay@ege.edu.tr</p>	<p>The group will focus on the following crops: citrus, fruit crops; -The group will focus on the following pathogens: postharvest decay agents</p> <p>Contact person: Pervin Kinay Teksur E-mail address: pervin.kinay@ege.edu.tr</p>

1.8. Research project partnership outside Euphresco

The funding consortium of the topic mentioned in section 1.2 requires that the topic is advertised outside the Euphresco network

Transnational collaboration is clearly open since numerous partners are willing to work together (IT, FR, ES, TU, CY, TK, EG, HU, IE, IR, IS, BR, MX, CO, AU, CZ) are already included in this consortium.

1.9. Any other relevant information on content

Initial work to define basic substance structure, application, pathway and transfer in organic production was initiated and mainly funded by France. However, corresponding EU guideline is under revision and new perspectives should be investigated.

2. Euphresco management aspects of the project

2.1. Indication of the topic budget

Funding organisation ^a	Mechanism ^b	Total Budget ^c
1. UNIVPM (IT)	NC	€ 50 000 (in kind)
2. CREA (IT)	NC	€ 3 000 (in kind)
3. CIHEAM-Bari (IT)	NC	€ 13 000 (in kind)
4. NSW (AU)		TBD*
5. ARC (BR)		TBD*
6. CUT (CY)		TBD*
7. UDA (CO)	NC	€ 4 200 (in kind)
8. CRI (CZ)		TBD*
9. ARC (EG)	NC	€ 2 000 (in kind)
10. ITAB (FR)		TBD*
11. UNIDEB (HU)	NC	€ 2 000 (in kind)
12. AZAD (IR)		TBD*
13. TEAGASC (IE)		TBD*
14. ARO (IL)	NC	€ 10 000 (in kind)
15. UNIBA (IT)	NC	€ 20 000 (in kind)
16. UNIFG (IT)		TBD*
17. UNIMI (IT)	NC	€ 3 000 (in kind)
18. UNINA (IT)	NC	€ 30 000 (in kind)
19. UNITE (IT)	NC	€ 30 000 (in kind)
20. UNITO (IT)	NC	€ 50 000 (in kind)
21. UNIVR (IT)	NC	€ 12 550 (in kind)
22. ITT (MX)	NC	€ 4 000 (in kind)
23. CSIC (ES)	NC	€ 28 000 (in kind)
24. INRAT (TU)	NC	€ 10 000 (in kind)
25. UE (TK)	NC	€ 2 000 (in kind)
		€

*To be defined

2.2. Expected duration of the project (only for non-competitive topics)

24 months

2.3. Identification of project coordinator

Has the research project coordinator been identified?

Yes

No, national call launched and proposal under evaluation

2.4. Any other relevant information on topic organisation and management

None.

^a First member is project coordinator. A minimum of two partners are necessary for each proposal. Add lines as needed.

^b Please indicate the preferred mechanism (e.g. real pot RP; virtual pot VP; non-competitive NC), or several mechanisms if there is flexibility.

^c Optional, as this amount can still change in the next phase. In-kind contribution should also be indicated in this column.