

1. Content of the 'Topic Description' document

1.1. Topic area

A: Diagnostics, field detection, surveillance

1.2. Topic title

Phytosanitary risks of newly introduced crops (PRONC)

1.3. 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-1.1: to improve knowledge on the biology, epidemiology and ecology of priority invasive and (re)emerging pests
- Objective 2017-R-2.1: to improve knowledge on emerging pathways of entry and means of spread for pests
- Objective 2017-C-2.1: to address plant health challenges through whole-chain, multi-actor approaches

1.4. Description of the problem the research should solve

In recent years, a tendency towards cultivation of alternative crops has been shown. Often, such “new”, “forgotten” or “exotic” crops are grown locally and marketed in the short food supply chain, including community supported agriculture initiatives and non-commercial trade. When these amateur crops are grown close to main crops, they may pose a threat for commercial production and even more if some of these crops would be more widely cultivated in the future.

Many of the “new” crops have a long history of cultivation outside of Europe. Of particular interest are the tuber-forming crops that are of American origin. These tubers are sometimes used as a substitute for potatoes. Although they are not part of the Solanaceae family, these tuber-forming plants share the same geographical origin as potato, and a combined or successive presence in the same agricultural fields can expose them to the same (nematode or *Ovipidum*) vectors to which potatoes are exposed. As such, they might harbour known potato viruses or new viruses that might pose a phytosanitary risk to potato or other crops. An additional risk factor is that several of these crops are not started from seed, but from tubers, which in turn may have been vegetatively propagated for multiple generations. Viral infections tend to build up during vegetative propagation. The associated phytosanitary risk can be illustrated by a recent finding of multiple viruses, including quarantine or emerging on *Ullucus tuberosus* (Ulluco) grown for the non-commercial market in the United Kingdom. Ulluco is a widely grown and economically important crop in the Andes region. Other crops which might be of interest are: Yacon (South-American origin; Asteraceae), Jerusalem artichoke (North-American origin; Asteraceae), Sweet potato (Central/South American origin; Convolvulaceae), Oca (South-American origin; Oxalidaceae), Mashua (South-American origin; Tropaeolaceae). Tuber-forming crops from other regions could be non-negligible, e.g. Crosne, which originates from China and belongs to the Lamiaceae family.

More knowledge is needed to better define the amplitude of phytosanitary risks associated with “new” and alternative crops, in order to be able to act appropriately.

1.5. Description of the expected results

- Insight in the variety, origin and distribution of newly introduced crops
- Transnational survey of plant pathogens associated with propagation materials and marketed “new” and alternative crops

- Phytosanitary risk assessment of these “new” and alternative crops
- Exploration of risk management options to control the identified phytosanitary risks

1.6. Beneficiaries of this research product

The research will benefit:

- National and EU policy makers
- NPPOs (diagnosticians and risk assessors/managers)
- EPPO (status info for databases)
- Growers and industry

1.7. Research funders and research contribution/ distribution

| Funding organisation | Research activity and researchers involved |
|---|---|
| <p>1. Federal Public Service of Health, Food Chain Safety and Environment, Belgium</p> <p>Ria Nouwen ria.nouwen@health.belgium.be</p> | <p>- Project coordination; - Identify the types of new crops, their varieties, origin and distribution in Belgium: e.g. yacon, sweet patato, oca, ulluco, crosne, mashua, Jerusalem artichoke; - survey in Belgium on plant pathogens- focus on viruses and nematodes- in propagation material, marketed crops and crops from gardens and fields; - contribution to pest risk analysis (entry, spread, establishment); - Development of fact sheets for growers; - Exploring risk management options</p> <p>Contact person: Kris De Jonghe E.mail: Kris.DeJonghe@ilvo.vlaanderen.be</p> |
| <p>2. Federal Agency for Agriculture and Food, Germany</p> <p>Bettina Beerbaum bettina.beerbaum@bmel.bund.de</p> <p>Silke Steinmöller silke.steinmoeller@julius-kuehn.de</p> | <p>- Contribution to be detailed</p> <p>Contact person: tbc E.mail: tbc</p> |
| <p>3. Netherlands Food and Consumer Products Safety Authority, The Netherlands</p> <p>Martijn Schenk M.Schenk1@nvwa.nl</p> | <p>- Identify “new” tuber-forming crops, available varieties, origin and distribution in the Netherlands; - survey in the Netherlands on plant viruses in (propagation) material from these crops; - Characterisation of new virus isolates detected during surveillance; - Exploring risk management options;</p> <p>Contact person: Annelien Roenhorst E.mail: j.w.roenhorst@nvwa.nl</p> |



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| <p>4. Department for Environment, Food and Rural Affairs, United Kingdom</p> <p>Laura Pinney Laura.Pinney@defra.gsi.gov.uk</p> | <ul style="list-style-type: none"> - Horizon scanning for identification of novel and emerging niche crops which could represent new plant health risk pathways, e.g. emerging or novel vegetatively propagated crops such as Ulluco, Oca, Yacon, Mashua, Arracacha, and other species identified through horizon scanning; - Sourcing samples of identified niche crops through internet purchasing and general inspection activities where appropriate; - Screening samples for presence of plant pests using conventional methods and High Throughput Sequencing (HTS mainly focussed on viruses); - Assessment of host range and transmission of any novel or unusual findings; -Contribution to risk assessment for novel crop pathways; <p>Contact person: Adrian Fox E.mail: Adrian.fox@fera.co.uk</p> |
| <p>5. All-Russian Plant Quarantine Centre, Russia</p> <p>Natalia Sherokolava natalia_sh@mail.ru</p> | <p>-Contribution to be detailed.</p> <p>Contact person: Yury Schneyder E.mail: yury.shneyder@mail.ru</p> |

1.8. Research project partnership outside Euphresco

Euphresco funding ensures a certain level of transnational collaboration among Euphresco member countries. It is possible, if the funding consortium is interested, to contact funding organisations or research groups outside the geographical area covered by Euphresco members. The Euphresco coordinator could advertise the research topic in order to have an enlarged collaboration. If funders are interested in this possibility, please check the case below:

The funding consortium of the topic mentioned in section 1.2 requires to advertise the topic outside the Euphresco network

1.9. Any other relevant information on content

None.

2. Euphresco management aspects of the project

2.1. Indication of the topic budget

| Funding organisation ^a | Mechanism ^b | Total Budget ^c |
|-----------------------------------|------------------------|---------------------------|
| 1. FPS (BE) | VP | € 125 000 |
| 2. BMEL (DE) | NC | € 90 000 |
| 3. NVWA (NL) | NC | € 50 000 |
| 4. DEFRA (GB) | NC | € 57 000 |
| 5. FGBU VNIKR (RU) | NC | € 10 000 |
| total | | € 332 000 |

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

30 months

2.3. Identification of project coordinator

Has the research project coordinator been identified?

Yes

No

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.