food_draft_work_programme_.pdf - Adobe Reader
Archivo Edición Ver Documento Herramientas Ventana Ayuda
1 / 83 142% Buscar

# Draft Horizon 2020 Work Programme 2014-2015

# in the area of Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

## Important notice:

This paper is made public just before the adoption process of the work programme to provide potential participants with the currently expected main lines of the work programme 2014-2015. It is a working document not yet endorsed by the Commission and its content does not in any way prejudge the final decision of the Commission.

The adoption and the publication of the work programme by the Commission are expected in mid-December 2013. Only the adopted work programme will have legal value, subject to, among others:

ES 16:02 30/09/2014

SUSTAINABLE FOOD SECURITY

H2020-SFS-2014-2 Sub call of: H2020-SFS-2014-2015

SFS-03a-2014: Native and alien pests in agriculture and forestry

**Title of Proposal: Pest Organisms Threatening Europe (POnTE)**

**Proposal acronym: POnTE**

**Date of submission: 26/06/2014**

**Type of action: Research and innovation actions**

**PROPOSAL SUBMISSION: *SECOND STAGE***

**Technical Annex**

**Section 1-3**

**Coordinating person**
Donato Boscia
Consiglio Nazionale delle Ricerche - Istituto per la Protezione Sostenibile delle Piante
(ex Istituto di Virologia Vegetale), CNR – IPSP, UOS Bari
E-mail: d.boscia@ba.ivv.cnr.it
Fax: +39 080 5443608
Tel: +39 080 5443067

## 1.1 OBJECTIVES

**1.1.1 Brief description of the subject area:** EU agriculture and forestry industries are increasingly threatened by alien and native pests, as a consequence of (i) globalized trade of plants and plant products facilitating entry, establishment and spread of alien pests and disease agents; and (ii) re-emergence of pests and diseases aided by new production scenarios, host cultivars and climate change.

Exotic organisms are regulated by the Plant Health Regime (PHR) established by the EU Directive 2000/29/EC, which imposes on EU Member State (EU-MS) to adopt strict actions (surveillance, monitoring, eradication, containment and movement restrictions) to prevent the entry, establishment and further spread of alien pests and diseases. In addition, a new PHR for the EU is under consideration, which will strengthen protection, risk targeting and solidarity, moving from an EU-MS-based approach to a trans-national EU approach. Vector-borne diseases are of particular concern because once established they are difficult to eradicate or manage in a new area. Alien pests can cause severe negative socio-economic impacts to agriculture and forestry industries in the EU. About 2.4 million persons are directly employed in commercial farms in the EU for fruits and vineyards. Area under olive groves in the EU is approximately 5 million ha and 2.5 million producers involving one third of all EU farmers. For example Soliman et al. (2013, Plant Path. 62, 1106-1113), estimated that potato and tomato farmers in the EU can suffer direct cost of €222 million due to CaLsol. In addition, these emerging pests may disrupt agro- and forest-ecosystems, which could be intensified by future climate change scenarios.

| TARGETS | |
|---|---|
| **Crops** | **Pests** |
| Olive, Stone fruits, Citrus, Grapevine, *Quercus* spp. and Ornamentals | *Xylella fastidiosa* and hemipteran vector species |
| Potato, Tomato, Carrot and Celery | '*Candidatus* Liberibacter solanacearum' and psyllid vector species |
| Forests | *Hymenoscyphus pseudoalbidus* (anamorph. *Chalara fraxinea*) and new and exotic *Phytophthora* spp.<br>The name of *H. pseudoalbidus* has recently been changed to *H. fraxineus*, but to avoid any confusion at this stage of the project application, we will continue using the name *H. pseudoalbidus* – Hp |

| N° | PARTICIPANT ORGANISATION NAME | Participant short name | COUNTRY |
|---|---|---|---|
| P1 Coordinator | **Consiglio Nazionale delle Ricerche (CNR)** Istituto per la Protezione Sostenibile delle Piante (ex Istituto di Virologia Vegetale) UOS Bari | CNR-IPSP | ITALY |
| P2 | **Università degli Studi Aldo Moro (UNIBA)** - Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti | UNIBA | ITALY |
| P3 | **Institut National de la Recherche Agronomique** | INRA | FRANCE |
| P4 | **Agence Nationale de Securite Sanitaire de l'Alimentation, de l'Environnement et du Travail** - Laboratoire de la Santé des Végétaux | ANSES | FRANCE-La REUNION |
| P5 | **Instituto Valenciano de Investigaciones Agrarias** - Plant Protection and Agro-Engineering | IVIA | SPAIN |
| P6 | **Agencia Estatal Consejo Superior De Investigaciones Cientificas** - Institute For Sustainable Agriculture and Institute Of Agricultural Sciences | CSIC | SPAIN |
| P7 | **Scottish Government** - Science and Advice for Scottish Agriculture Edinburgh | SG | UNITED KINGDOM |
| P8 | **Forestry Commission Research Agency**- Centre for Ecosystems, Society & Biosecurity | FR | UNITED KINGDOM |
| P9 | **Bundesforschungs-und Ausbildungszentrum für Wald, Naturgefahren und Landschaft** - Forest Protection | BFW | AUSTRIA |
| P10 | **Maa Ja Elintarviketalouden Tutkimuskesk** - Plant Production Research | MTT | FINLAND |
| P11 | **Wageningen University** - Department of Social Sciences | WU | THE NETHERLANDS |
| P12 | **Norwegian Institute For Agricultural And Environmental Research – Bioforsk** - Plant Health and Plant Protection | Bioforsk | NORWAY |
| P13 | **University of Costa Rica** - Centro de Investigación en BiologíaCelular y Molecular | UCR | COSTA RICA |
| P14 | **The Agricultural Research Organisation Of Israel - The Volcani Centre** - Department of Plant Pathology and Weed Sciences | ARO | ISRAEL |
| P15 | **Faculty Of Agriculture - University of Belgrade** | FA | SERBIA |
| P16 | **CERTIS EUROPE B.V.** - Development and Registration Certis Europe B.V. | Certis | THE NETHERLANDS |
| P17 | **AUREA IMAGING BVBA** | Aurea | BELGIUM |
| P18 | **Vilmorin & Cie** | Vilmorin | FRANCE |
| P19 | **LOEWE Biochemica GmbH** | Loewe | GERMANY |
| P20 | **Phytophthora Research and Consultancy** | PRC | GERMANY |
| P21 | **Acli Racale Soc. Agr. Coop.** | ACLI | ITALY |
| P22 | **AGRITEST SRL** | Agritest | ITALY |
| P23 | **Fundacion Citoliva, Centro De Innovacion Y Tecnologia Del Olivar Y Del Aceite** - Fundation CITOLIVA | Citoliva | SPAIN |
| P24 | **Agricola Villena, Coop. V.** | A. Villlena | SPAIN |
| P25 | **A L Tozer Ltd** | Tozer | UNITED KINGDOM |

Partners shaded in grey indicate the end user partners (SMEs, industries, producers and stakeholder associations).

# '*Candidatus* Liberibacter solanacearum' objectives

| Objective | Brief description | Related Work package (WP) |
|---|---|---|
| Isolation of the bacterium and genotyping | *In vitro* cultivation of different CaLsol haplotypes will be attempted. Currently, the only CaLsol haplotypes found in EPPO region are C, D and E. Estimation of CaLsol prevalence and haplotypes characterization using consolidated molecular typing procedures and genome sequencing through next generation sequencing (NGS), will clarify if any CaLsol haplotype can colonize different solanaceous or non-solanaceous hosts, helping in the prevention and risk assessment of the disease in potato and other solanaceous crops. | WP2, WP3 |
| Implementation of diagnostic procedures for monitoring and surveillance programs | • **Improvement and validation of diagnostic**, detection and identification tools applicable at large scale in seed lots, tubers, plants and vectors; **implementation of survey protocols** and application at national level in carrot, potato plants and tubers, tomato crops and associated weeds that may act as a CaLsol reservoir;<br>• Development of **automatic devices** mounted on autonomous terrestrial and/or **aerial vehicles for field crops monitoring using machine** vision technology in the visible, NIR and UV **wavelengths**, combined with **thermal imagery**;<br>• **Implementation of a permanent, automated** monitoring (scouting) and **surveillance** system providing, simultaneously information of real-time microclimatic conditions by using georeferenced devices also mounted on vehicles. | WP4, WP6 |
| Vector monitoring | • Monitoring over the complete period of cultivation the **psyllid species landing** on carrot and potato plants.<br>• Development of information resources on the psyllid populations spread in Europe.<br>• Implementation of **molecular identification** methods for psyllid species identification.<br>• Squash real-time PCR analysis to determine the **infectivity index** that could be used to predict and forecast disease epidemics. | WP5 |
| Assessment of vector ability and epidemiology of different psyllid species | • Determination of the host range of the identified potential psyllid vector species by use of **Electrical Penetration Graphics** (EPG) technology. Carrot, celery, potato, tomato, pepper and eggplant plants will be used as model crops.<br>• Estimation of the **propensity** of a given psyllid species to acquire CaLsol from infected carrot/celery plants and to transmit it to other susceptible hosts. Studies will rely on transmission experiments under | WP5 |

| | | |
|---|---|---|
| | natural or experimental conditions;<br>• **Spatial-temporal dynamics** of CaLsol under natural conditions. Samples, inspected from symptoms, will be collected and analysed by real-time PCR for CaLsol to provide an epidemiological model in the different ecological European and Middle East areas. | |
| **Managing and mitigation strategies** | Environmentally friendly and innovative, mitigation strategies based on epidemiological data and on three pillars:<br>i) **Seed treatments**: carrot seeds treatments **to inactivate viable CaLsol** and to protect seedlings at initial stages;<br>ii) **Reduction or elimination of vector population** by:<br>- Assessment of the **efficiency of Horticultural Mineral Oil** (HMO) treatments in reducing natural spread of CaLsol in carrot and direct damage due to feeding of psyllid on potato crops.<br>- Assessment of the **efficiency of kaolin** particle film and botanical extracts to reduce feeding and population development of *Trioza apicalis* and transmission of CaLsol by *T. apicalis* on carrot.<br>- Evaluation of the **use of maltodextrine and biopesticides in reducing the number of psyllid** species landing on the crop.<br>iii) cultural or innovative IPM practices:<br>- Evaluation of carrot and potato **cultivation under insect-proof protection** without chemical treatments. | **WP9** |