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agence nationale de sécurité sanitaire
alimentation, environnement, travail



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Centre International de Hautes Etudes Agronomiques Méditerranéennes (CIHEAM)

XylApp: une application Android appliquée à la surveillance de *Xylella fastidiosa* en Italie



**Séminaire : Invasions biologiques et crises sanitaires
Leurs conséquences pour la surveillance et le diagnostic phytosanitaires**



Séminaire : Invasions biologiques et crises sanitaires
leurs conséquences pour la surveillance et le diagnostic phytosanitaires

Paris – 4 octobre 2017



CIHEAM

International Centre for Advanced Mediterranean Agronomic Studies

Founded in 1962, the CIHEAM is a **Mediterranean intergovernmental organization** devoted to the sustainable development of agriculture and fisheries, food and nutrition security and rural and coastal areas.

It is composed of **13 member States** (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Turkey)



CURE-XF Kick-off Meeting
CIHEAM Bari 28-29 September, 2017

Séminaire : Invasions biologiques et crises sanitaires

leurs conséquences pour la surveillance et le diagnostic phytosanitaires

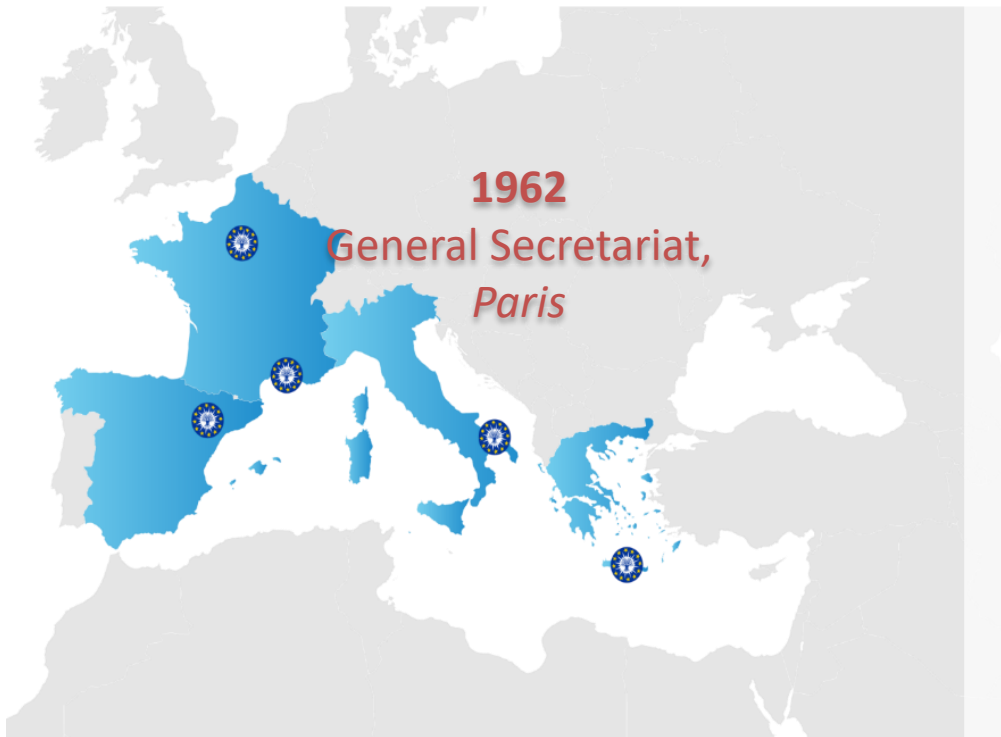
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CIHEAM

FOUR MEDITERRANEAN AGRONOMIC INSTITUTES

Training areas and research fields



MAI Bari - Italy

- Water resources management
- Protection of fruit crops
- Organic agriculture
- Sustainable development



MAI Chania- Greece

- Food quality
- Horticultural genetics and biotechnology
- Sustainable agriculture
- Environmental management
- Business economics and management



MAI Montpellier- France

- Rural societies and territories
- Public policies
- Rural development
- Chains and actor's strategies



MAI Zaragoza - Spain

- Plant and animal production
- Integrated rural approach
- Product markets and marketing
- Fisheries and aquaculture

the synergy between **training/education**, **applied scientific research** and **cooperation** provides tangible answers to topical issues such as food safety/security and agricultural quality



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Technical support to the Apulian Plant Protection Service

Pest monitoring

Certification of plant material



Citrus tristeza virus

Plum pox virus

Erwinia amylovora

Phytoplasma vitis



Xylella fastidiosa



accredited laboratory for analysis

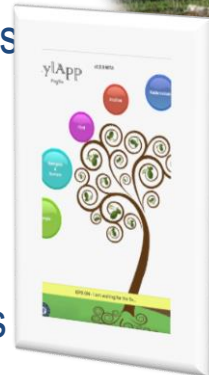
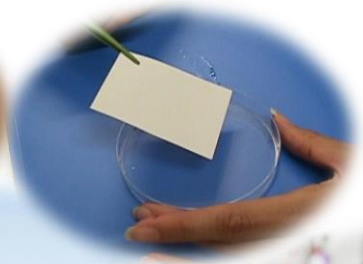


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- Pathogen characterization
- Pathogen distribution in olive cvs
- Sampling methods of plant material
- *In situ* diagnosis : DTBIA & real time LAMP
- Study of olive metabolites associated to the infection
- Potential insect vectors
- Olive entomofauna
- Population dynamics of *Auchenorrhyncha*
- Photointerpretation of aerial images for OQD symptoms
- Geomatic methods for pathogen surveillance
- UAV thermic and hyperspectral images
- Softwares for data acquisition and transmission
- Softwares for data storage, management and analyses





What is XylApp C'est quoi XylApp



Xylella Fastidiosa Active Containment Through a multidisciplinary-Oriented Research Strategy

www.ciham.org
www.iam-bari.it



Santoro et al., 2014

It is an application (App) for "**android systems**", designed and developed by the Mediterranean Agronomic Institute of Bari, with the aim to **facilitate, optimize and rationalise** the collection, the geolocalisation and the storage of the data (population, agronomic, territorial, photography, etc.) related to sampled plants/lots/insects collected during the work of on site inspection & field monitoring of *X. fastidiosa*.

The daily data of the collected samples acquired by **XylApp** are transmitted in real time to the central Database (**XylWeb**).

Il est une application (App) pour "systèmes Android", développée par l'Institut Agronomique Méditerranéen de Bari, pour faciliter, optimiser et rationaliser la collection, la géolocalisation et le stockage des information liés aux plantes / lots / insectes échantillonnés collectés sur le site de surveillance pour *X. fastidiosa*. Les information quotidiennes des échantillons collectés acquis par XylApp sont transmises en temps réel (XylWeb).



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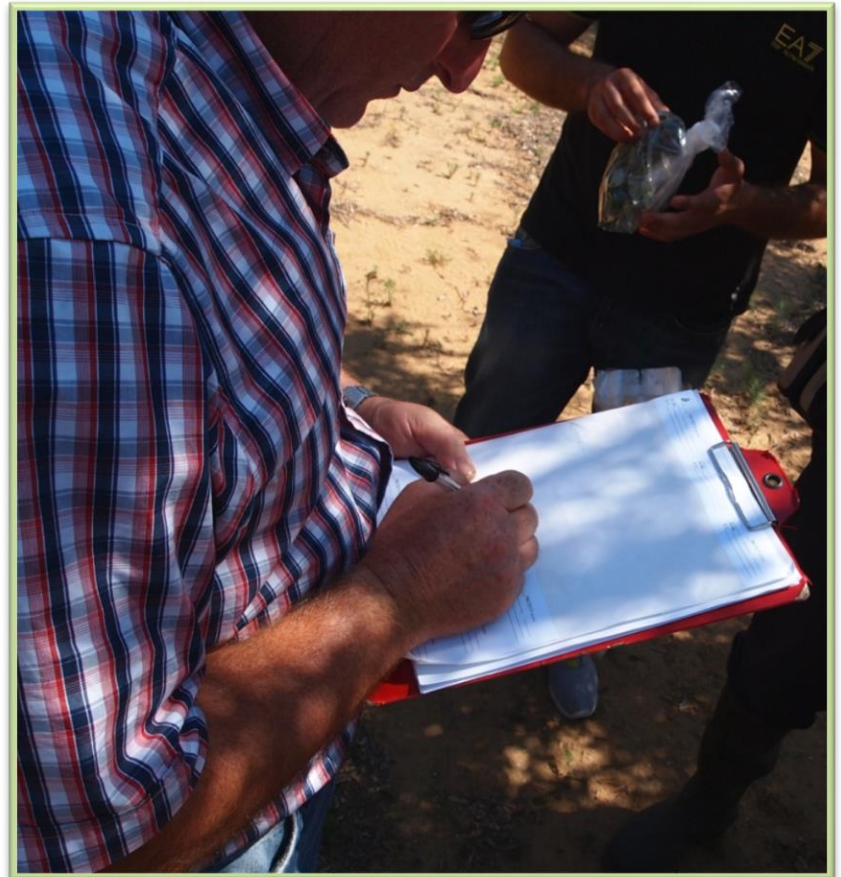
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REGIONE PUGLIA
AREA POLITICHE PER LO SVILUPPO RURALE
SERVIZIO AGRICOLTURA
OSSERVATORIO FITOSANITARIO REGIONALE

The team in the field

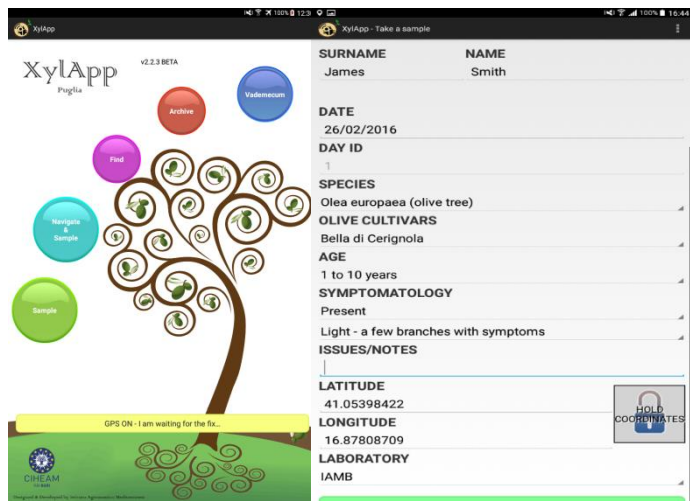
Monitoring teams are composed of 2 or 3 units:



1. – Visual inspection
2. – Choise of plants
3. – Collection of samples
4. – Coding and georeferencing of samples
5. – Sample delivery to the laboratory

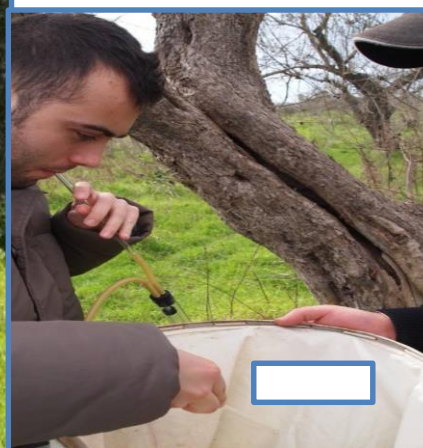


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www.iamb.it



XylApp

Compiling of a description sheet for each sample using a field applet named XylApp



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Santoro et al., 2014

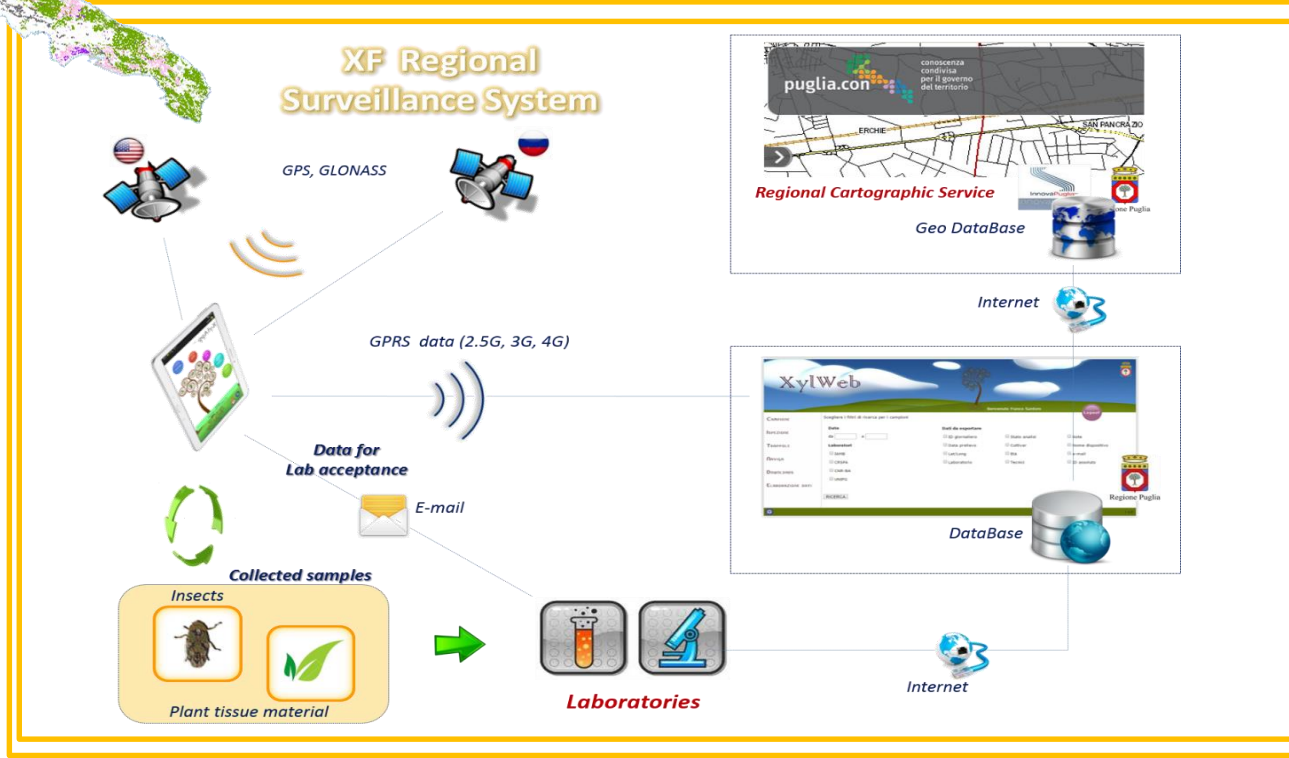


What is XylApp



Xylella Fastidiosa Active Containment Through a multidisciplinary-Oriented Research Strategy

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Santoro et al., 2014

XylApp will be enhanced and structured for its use in the whole EU territory (XylApp_{EU})



European Commission

Horizon 2020
European Union funding
for Research & Innovation



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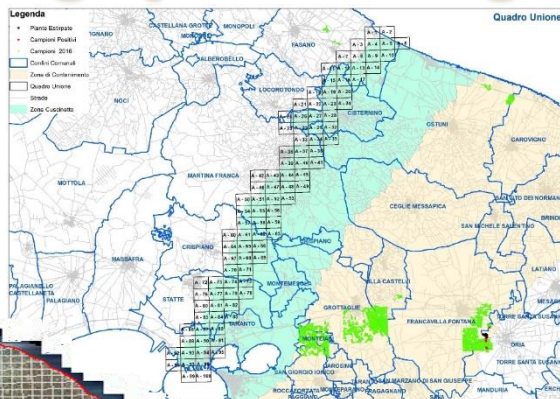
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Locating a position using UTM:



www.cih
www.ia



RCG mesh (1.000 ha about)



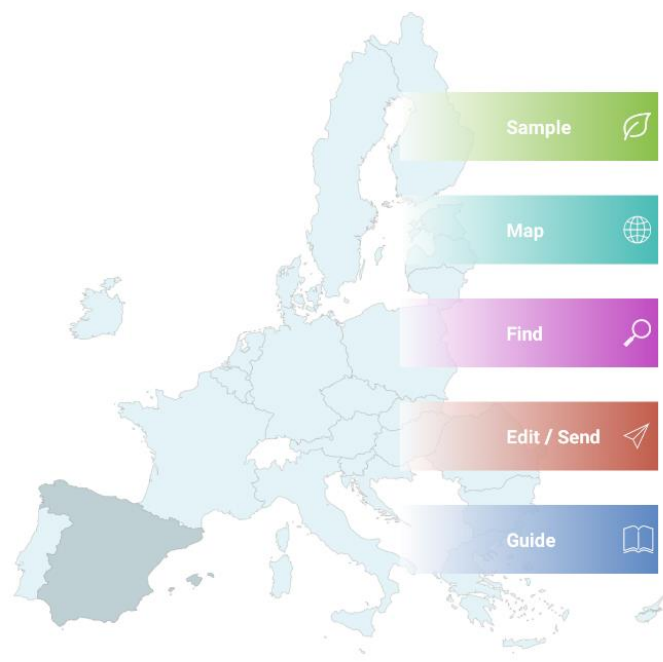
RCG 100x100 mesh (1 ha about)

The Regional Cartographic Grid (RCG) for distributing the samples in a rational and representative way

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XylApp modules



Five modules

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The module "SAMPLE"

It allows to acquire data and geolocate the samples collected in the field, *WITHOUT* the need to "look for the sample in the territory" (eg. It is known the location of the field)

Label created

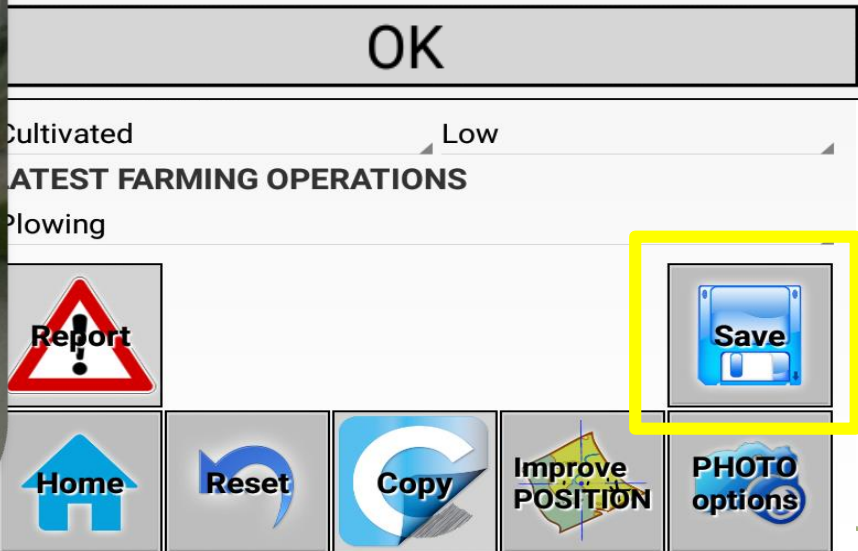
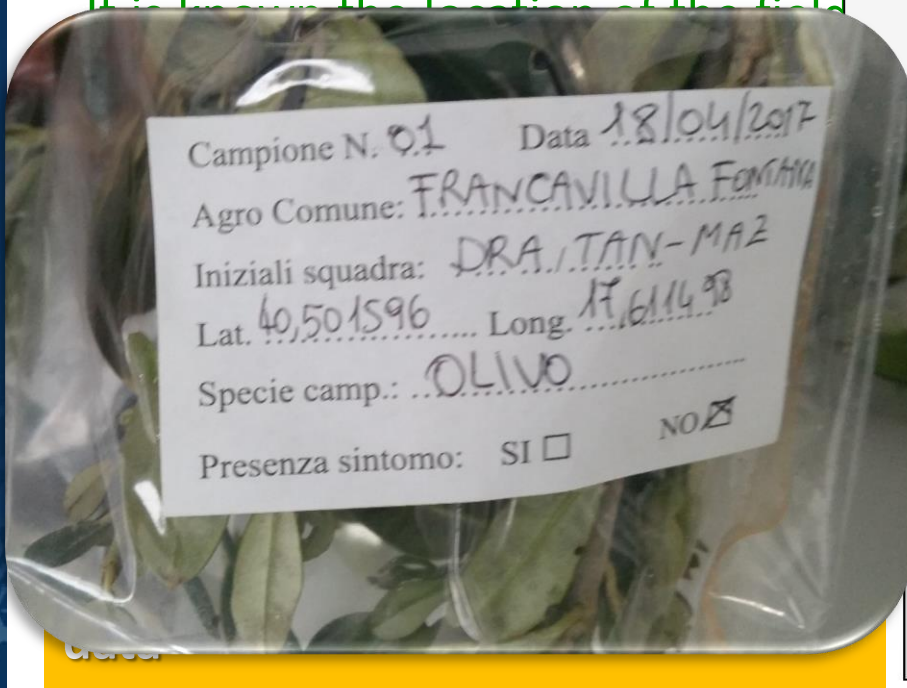
Day ID: 6 DATE: 18/06/2017

TECHNICIAN: DON

LAT: 40.563298 LONG: -5.965874

SPECIES: ACACIA SALIGNA

SYMPTOM: NO



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The module "SAMPLE"

The function "Improve POSITION":

When activated, it allows improving the captured GPS coordinates (only after saving the sample).

XylApp - Take a sample

PAGE PARCEL Add page Delete page

AREA [ha]

ALTITUDE s.l.m. [m]
88.0

MAIN SPECIES
No

SUBSIDIARY SPECIES
None

SPACING BETWEEN PLANTS Irregular SPACING DIMENSIONS x

PHENOLOGICAL STAGE
Vegetative stasis

CULTURE STATE
Cultivated Low

LATEST FARMING OPERATIONS
Plowing

Report Save

Home Reset Copy **Improve POSITION** PHOTO options



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www.ia mb.it

The module “SAMPLE”

The function
“**PHOTO**”:

When activated, it allows you
to take only ONE photo.

XylApp - Take a sample

PAGE PARCEL Add page Delete page

AREA [ha]

ALTITUDE s.l.m. [m]
88.0

MAIN SPECIES
No

SUBSIDIARY SPECIES
None

SPACING BETWEEN PLANTS SPACING DIMENSIONS
Irregular x

PHENOLOGICAL STAGE
Vegetative stasis

CULTURE STATE
Cultivated Low

LATEST FARMING OPERATIONS
Plowing

Report Save

Home Reset Copy Improve POSITION PHOTO options

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The module "SAMPLE"

The function "Report":

If activated (after acquiring all the information related to the plant observed), it allows recording an **alert** (no plant or insect) without generating an label.

XylApp - Take a sample

PAGE PARCEL Add page Delete page

AREA [ha]

ALTITUDE s.l.m. [m]
88.0

MAIN SPECIES
No

SUBSIDIARY SPECIES
None

SPACING BETWEEN PLANTS Irregular SPACING DIMENSIONS x

PHENOLOGICAL STAGE
Vegetative stasis

CULTURE STATE
Cultivated Low

LATEST FARMING OPERATIONS
Plowing

Report Save

Home Reset Copy Improve POSITION PHOTO options



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www.iamb.it

The module “SAMPLE”

The function “Copy”:

If enabled, saves the contents of the sample acquired to propose it again in the next sample (obviously excluding the GPS coordinates). Any information can be modified and re-proposed to constitute the content of the new sample. The same procedure can be used recursively for all samples to follow avoiding the manual entry of the same information in samples of the same species (or different species) of the same field.

XylApp - Take a sample

PAGE	PARCEL	Add page	Delete page
AREA [ha]			
ALTITUDE s.l.m. [m] 88.0			
MAIN SPECIES No			
SUBSIDIARY SPECIES None			
SPACING BETWEEN PLANTS Irregular	SPACING DIMENSIONS x		
PHENOLOGICAL STAGE Vegetative stasis			
CULTURE STATE Cultivated Low			
LATEST FARMING OPERATIONS Plowing			

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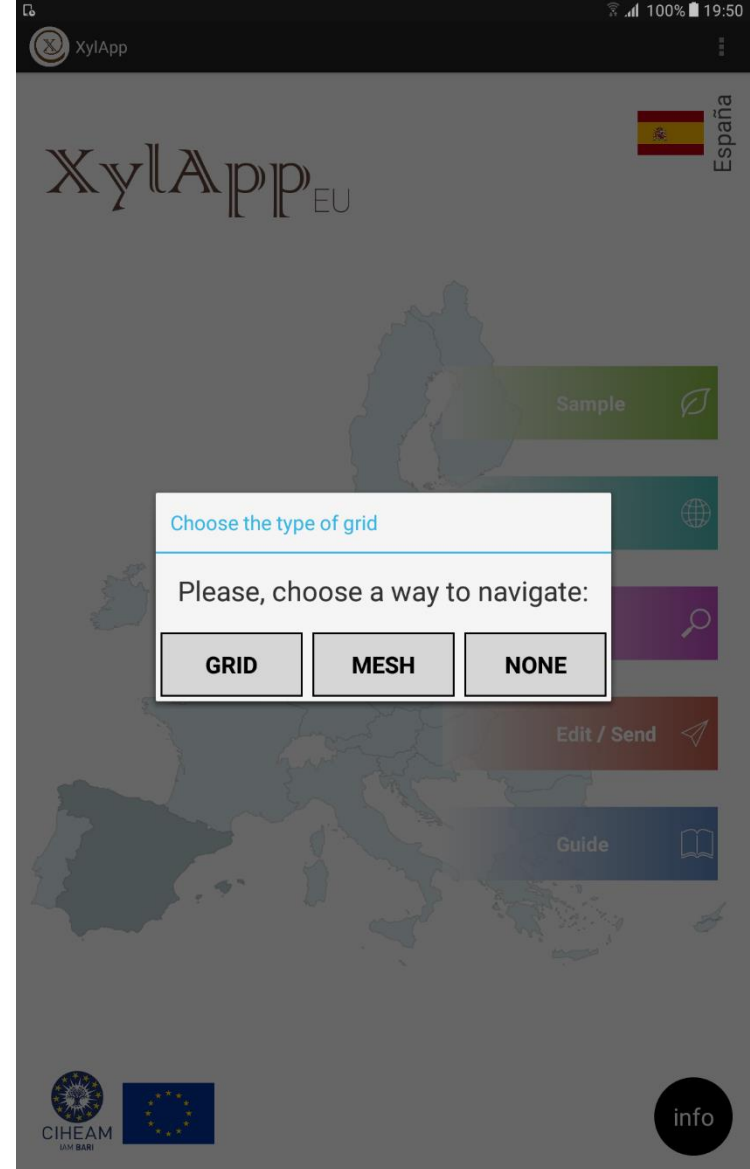




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The module “MAP”

It allows to acquire data from samples taken in the field **WITH** the necessity to look for the sample on the territory (eg. Look for samples within a specific mesh...).



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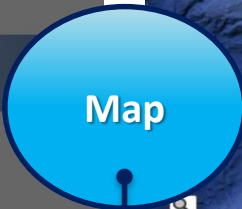
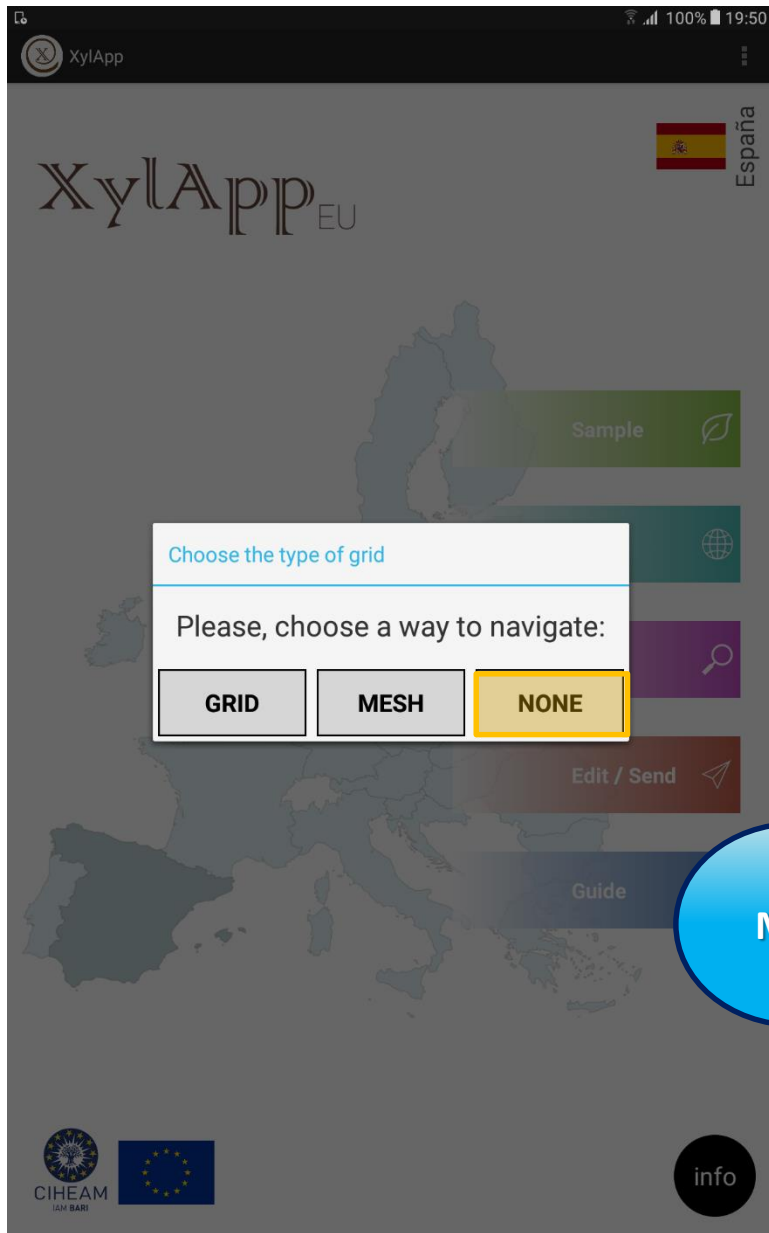
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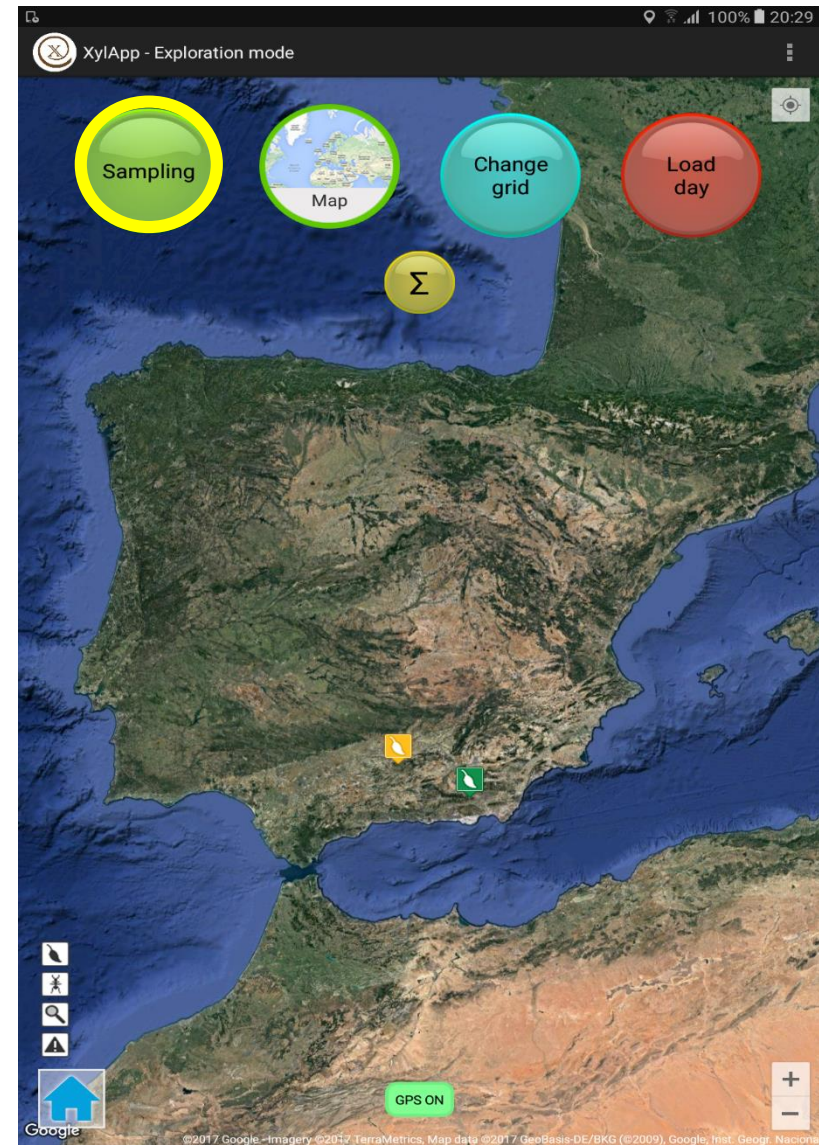




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The module "MAP"

Afterwards, it employs the module *SAMPLE* to acquire the sample data



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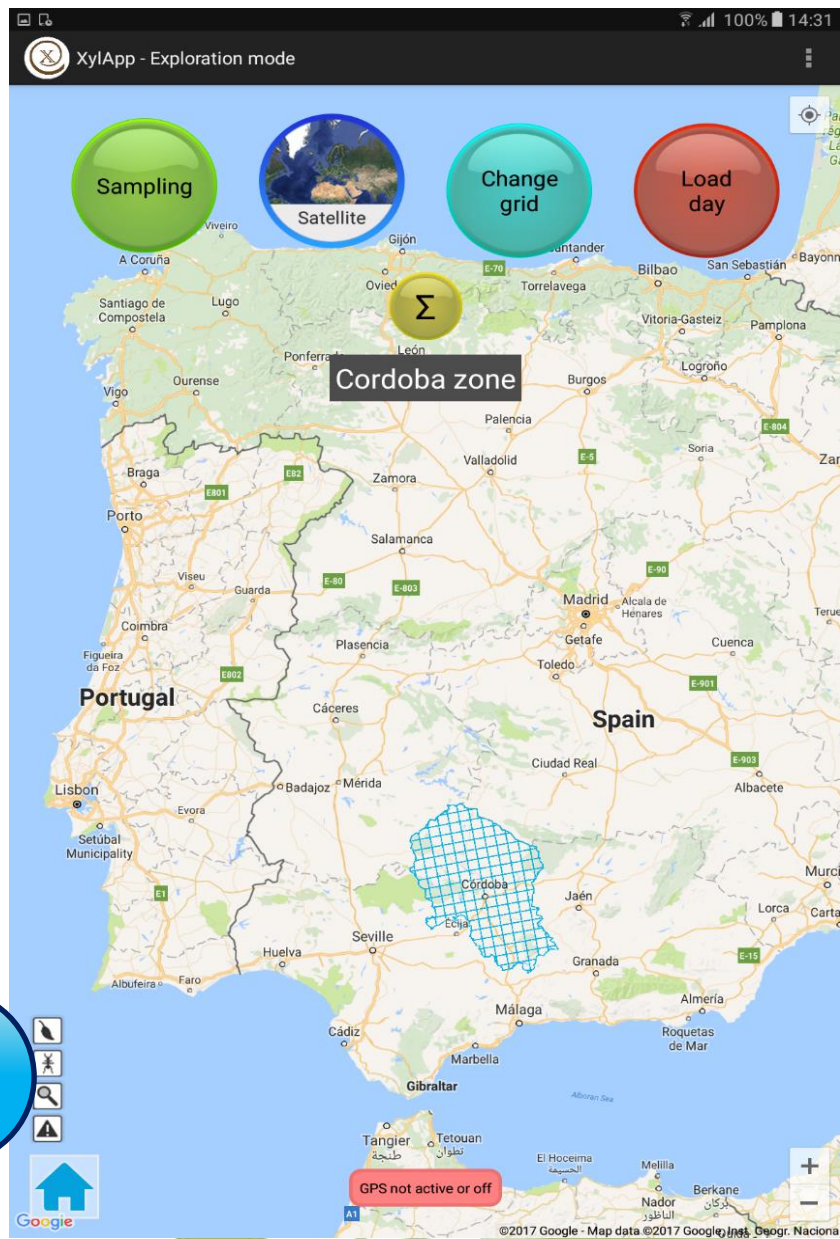
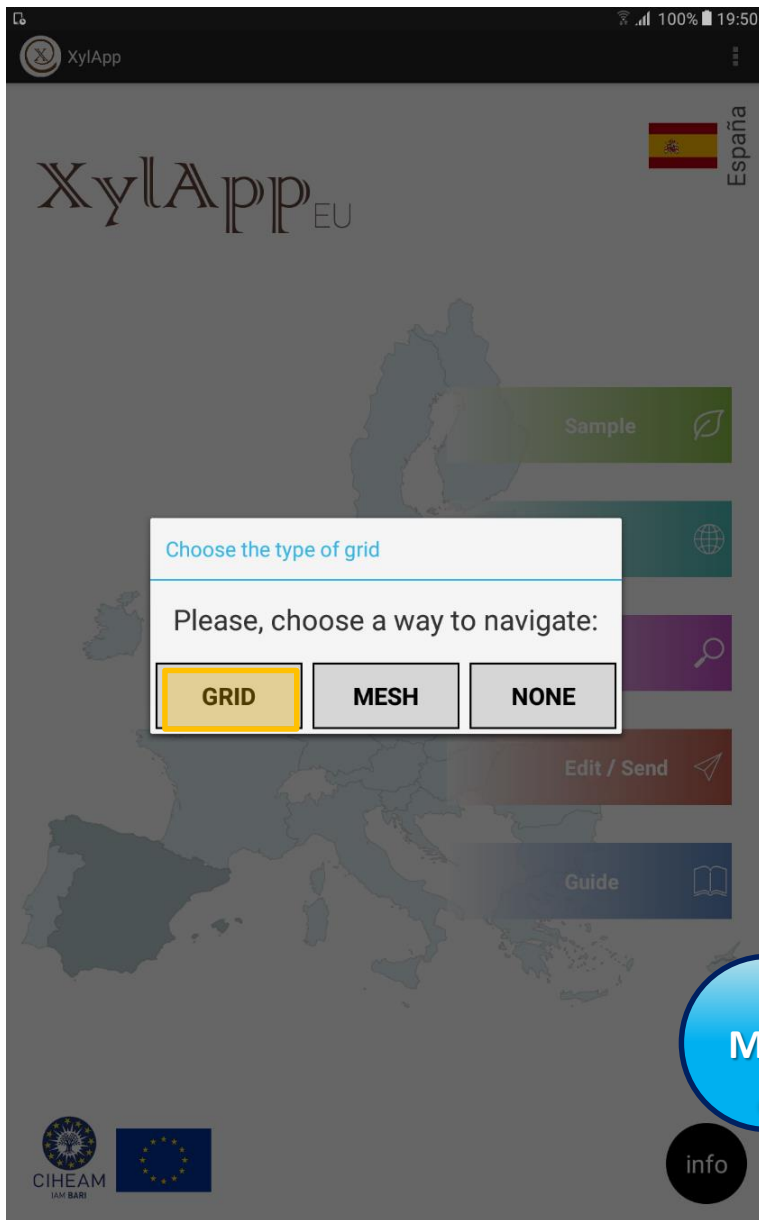
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The module "MAP"

Afterwards, it employs the module *SAMPLE* to acquire the sample data



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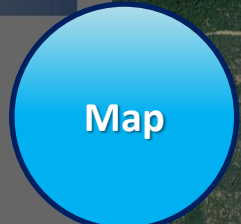
XylApp EU

España

Choose the type of grid

Please, choose a way to navigate:

GRID **MESH** **NONE**



XylApp - Exploration mode

Sampling Map Change grid Load day

Σ

Mesh code: 1kmE3003N1779

Córdoba

Villaviciosa de Córdoba

GPS not active or off

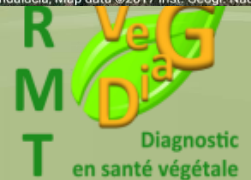
?

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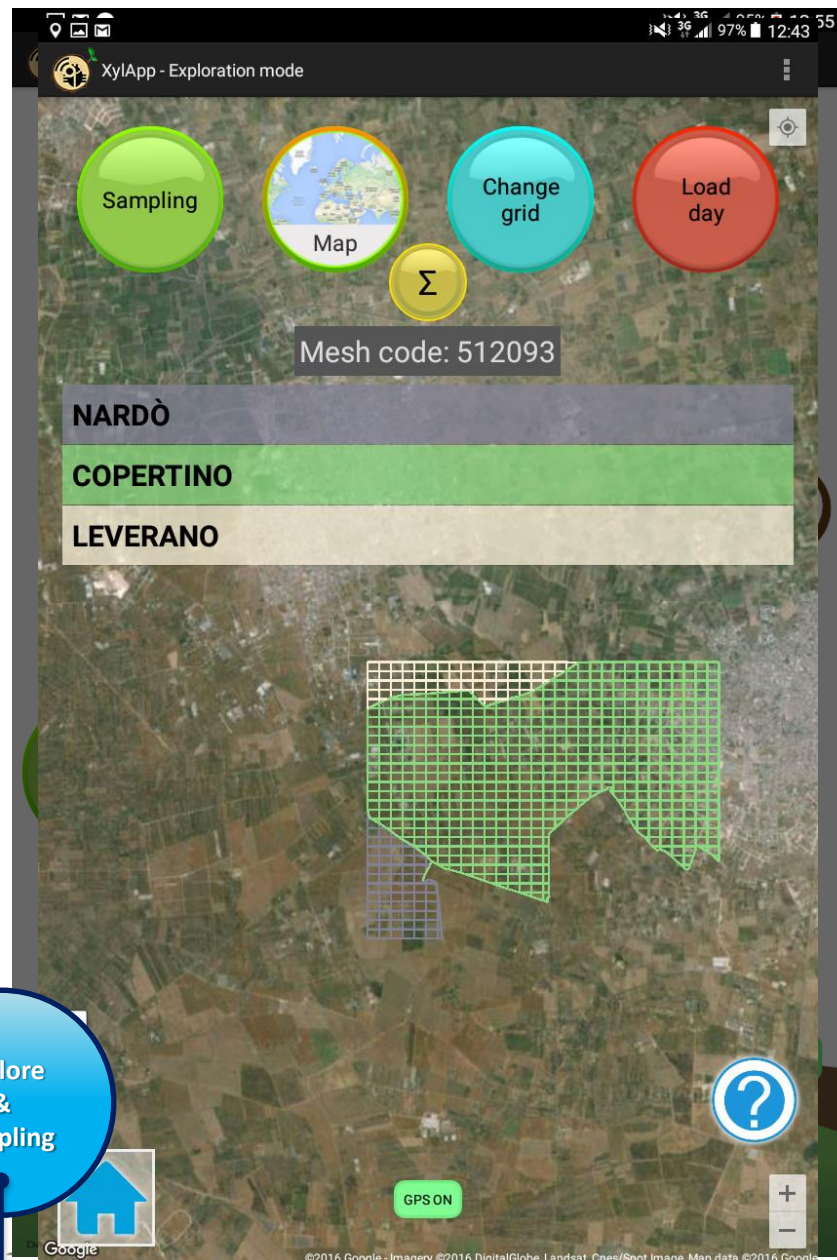
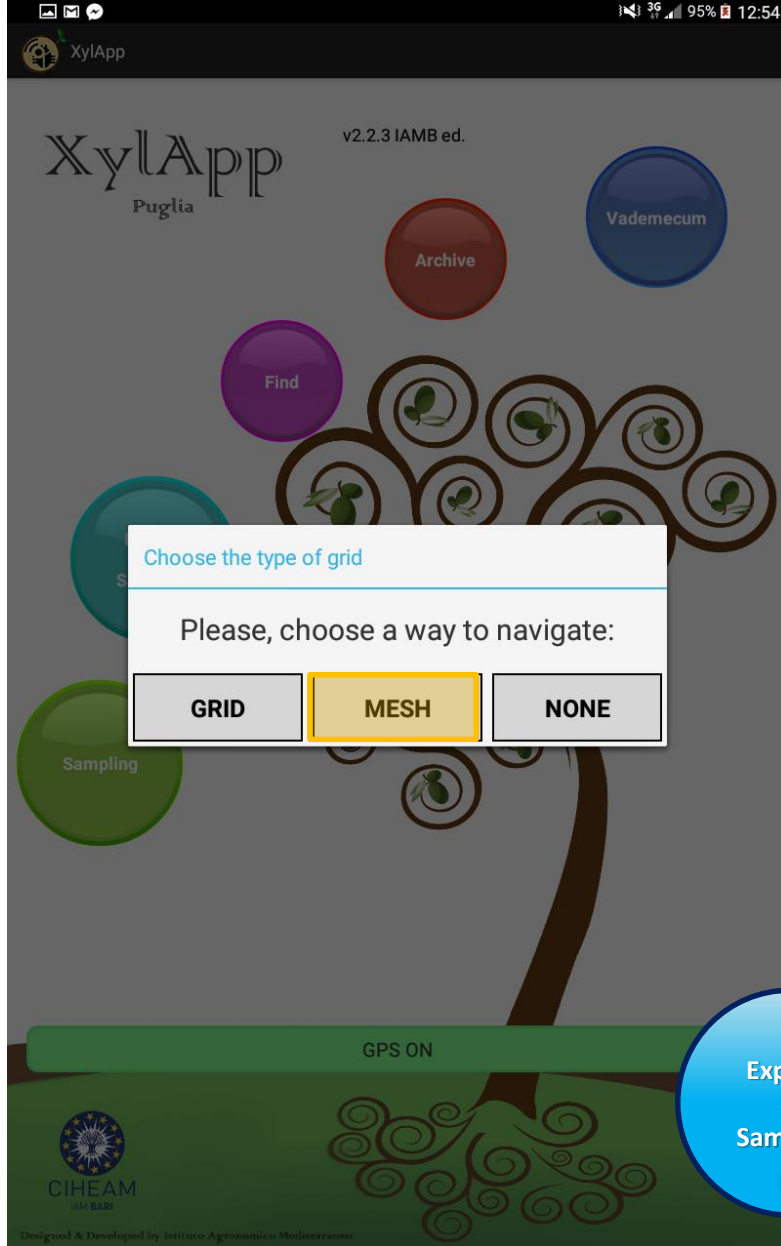
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Explore & Sampling

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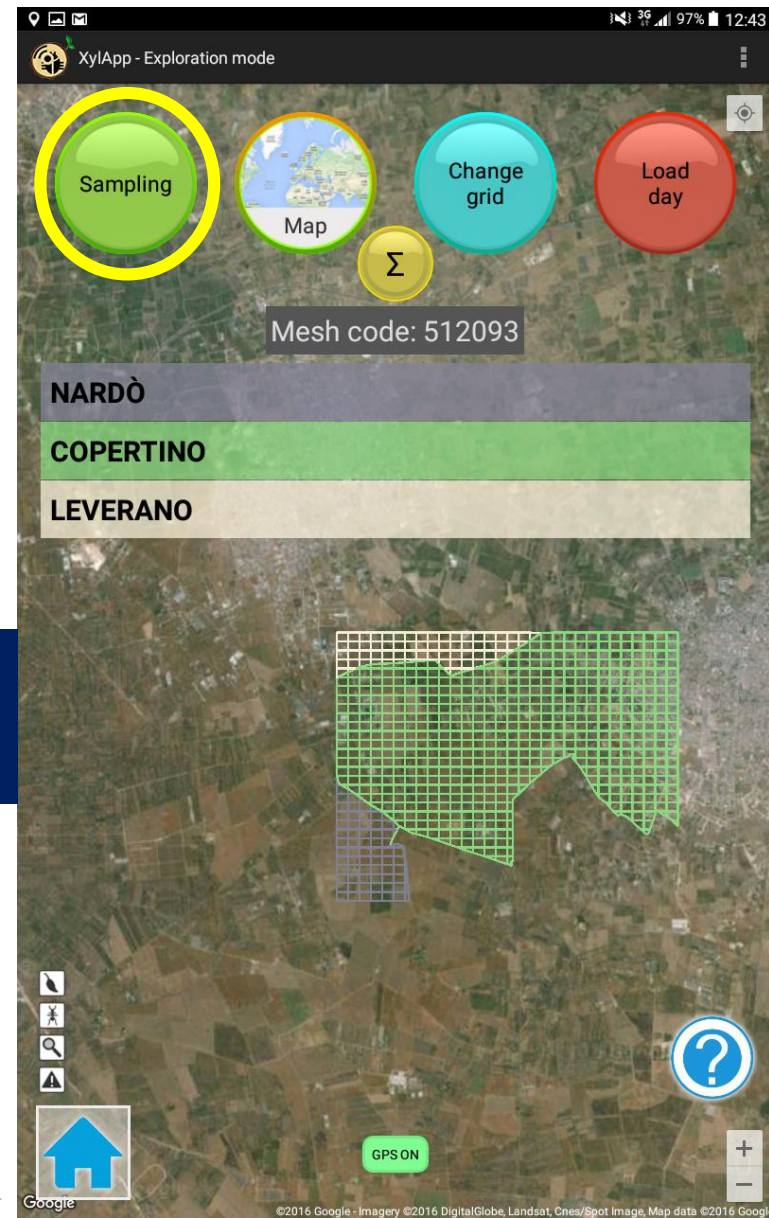




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The module "MAP"

Afterwards, it employs the module *SAMPLE* to acquire the sample data



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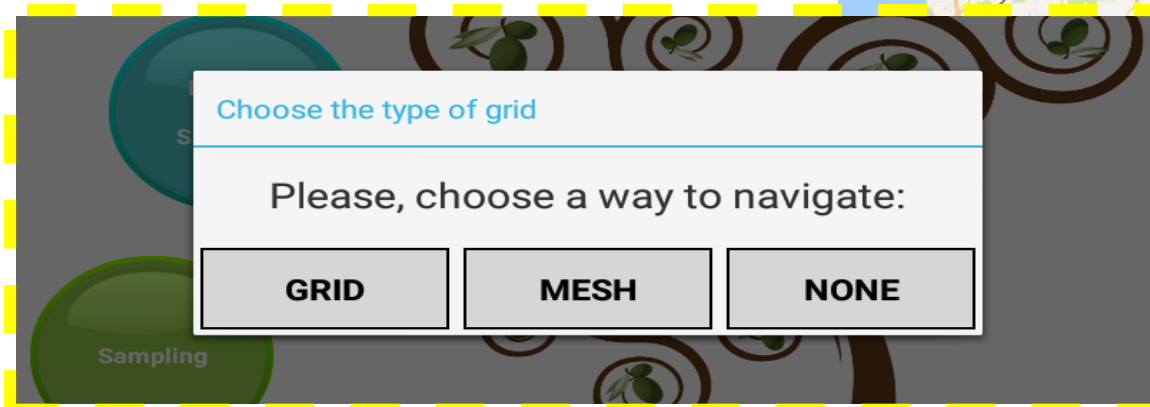


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The module "MAP"

The function "Change grid"

When activated, it allows you to select other geographical navigation mode.



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The module "MAP"

The function "Daily report"

When activated, it returns the "daily report" of the samples collected by the team and/or the laboratory.

The reports, however, are displayed for a while.

The screenshot shows the XylApp interface in 'Exploration mode'. At the top, there are four circular buttons: 'Sampling' (green), 'Satellite' (blue with a globe icon), 'Change grid' (teal), and 'Load day' (red). A central yellow dashed circle contains a summation symbol (Σ). Below the map, a white overlay displays the 'Report del giorno' (Daily report) for 'Report campioni di oggi' (Report samples of today). The report lists the following items:

Totale giornaliero	
Olea europaea (olivo)	n. 3
Insetto	n. 1
Accertamento	n. 1
Sono state registrate 1 segnalazioni	
Vinca minor	n. 2
Cynodon Dactylon (gramigna)	n. 1

An 'OK' button is located at the bottom of the report overlay. The background map shows parts of France, Spain, and Morocco, with a 'GPS ON' indicator at the bottom right.

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The module "MAP"

The function "Load day"

When activated, it allows to view and store, in the memory of the tablet and/or microSD, the samples acquired during the previous days.

Load samples of the day...

Scegliere un giorno tra quelli disponibili

Icon	Date	Colore indicatori
■	25/10/2014	Red
■	23/10/2014	Red
■	22/10/2014	Red
■	20/10/2014	Red
■	19/10/2014	Red
■	18/10/2014	Red
✓	17/10/2014	Blue
■	10/10/2014	Red
■	30/09/2014	Red
✓	27/09/2014	Red

Buttons: OK, Indietro

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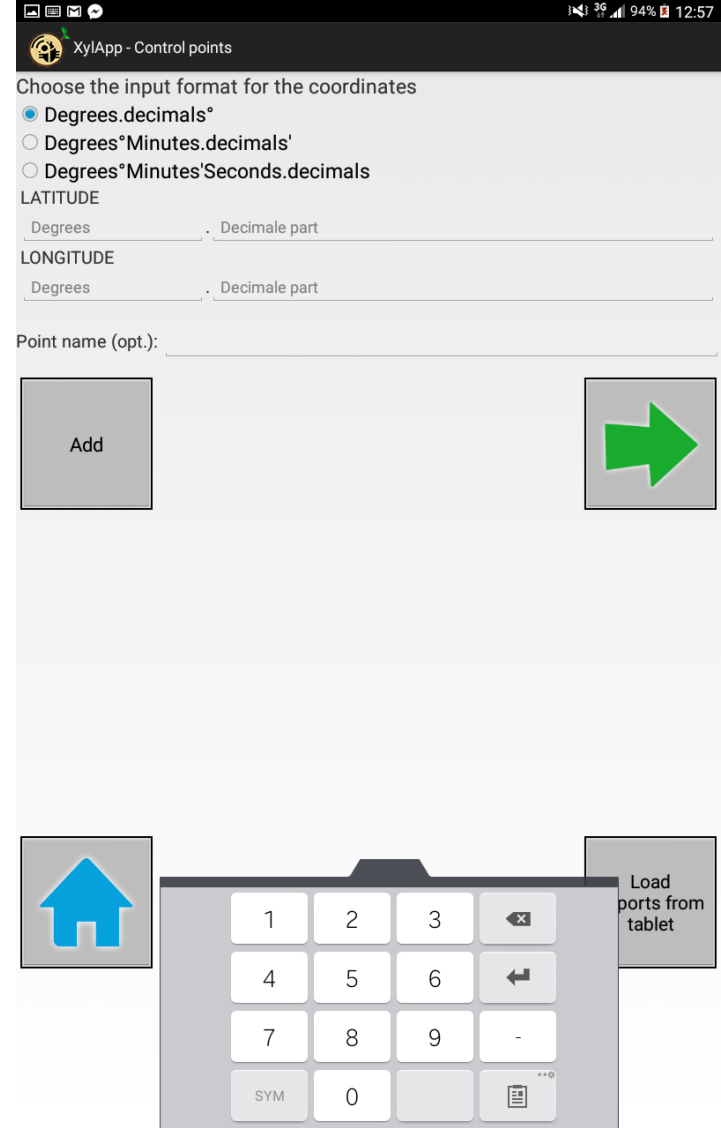
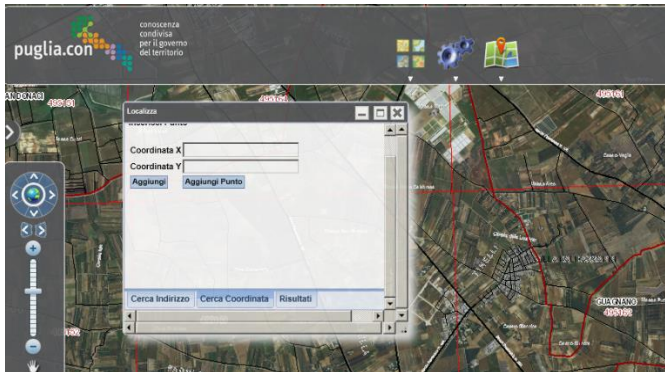




The module "FIND"

it allows you to find on the territory one or more samples through their geographical coordinates

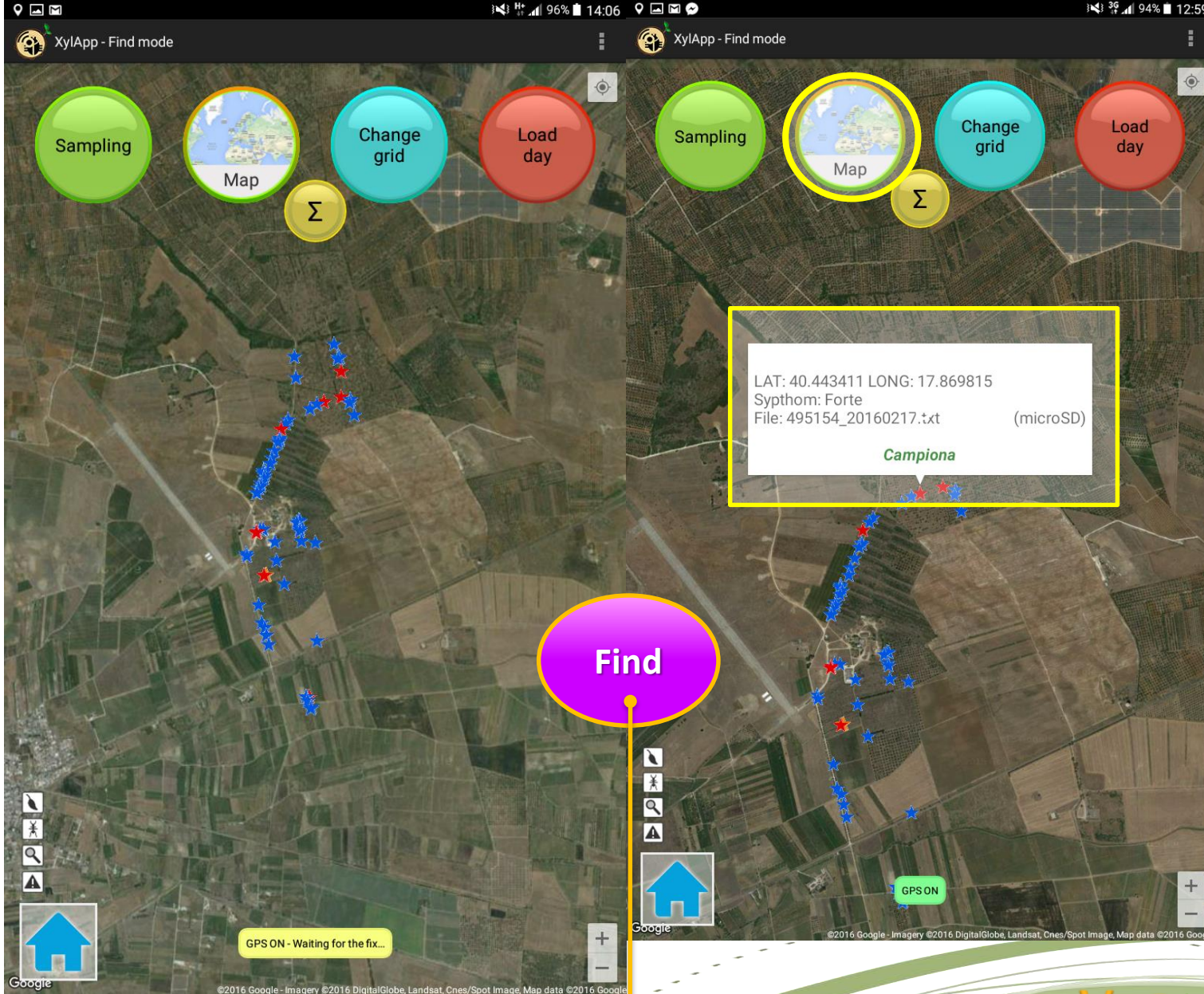
eg. in the office you can plan actions on plants that fall within a specific mesh (identification of eradicated plants, inspections, etc.).





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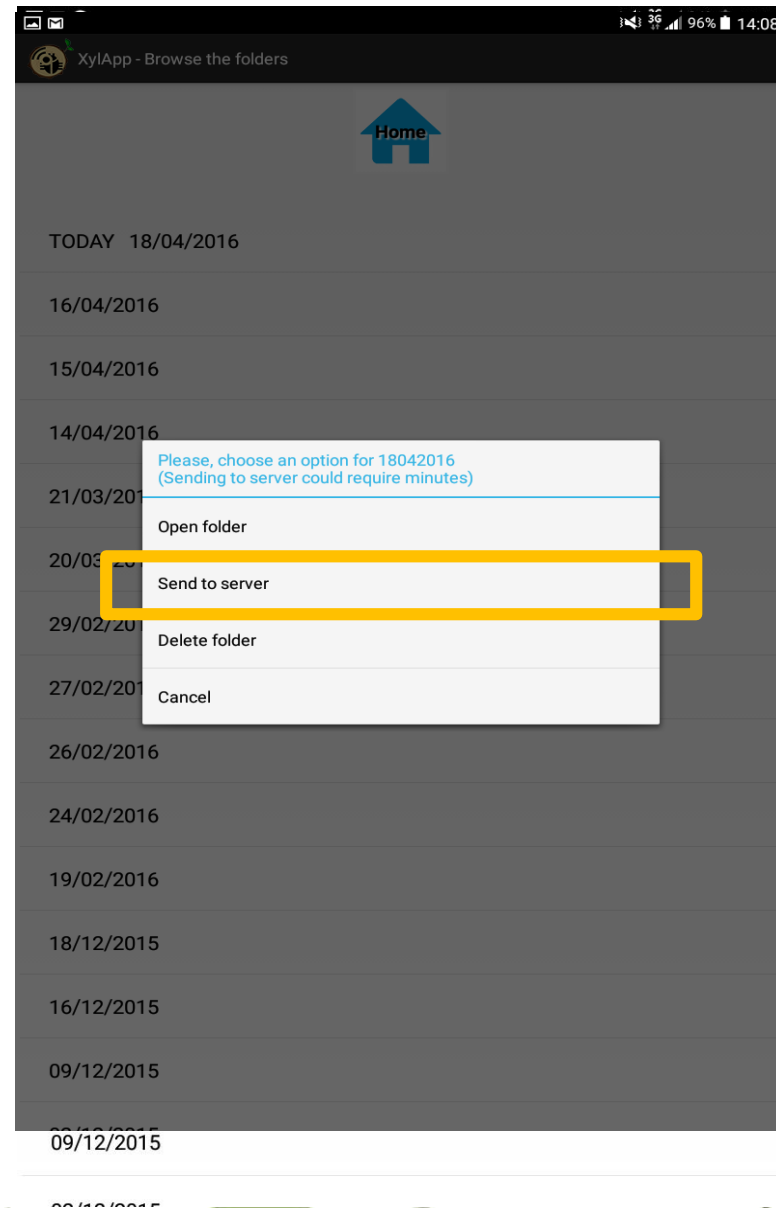




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The module "Edit/Send"

It allows you to **edit, store** (in a renamed folder with monitoring data) and **send** to the central *DataBase* (**XylWeb**) data acquired in the field; you can **generate** a report to excel, **edit** and/or **delete** individual samples, etc.



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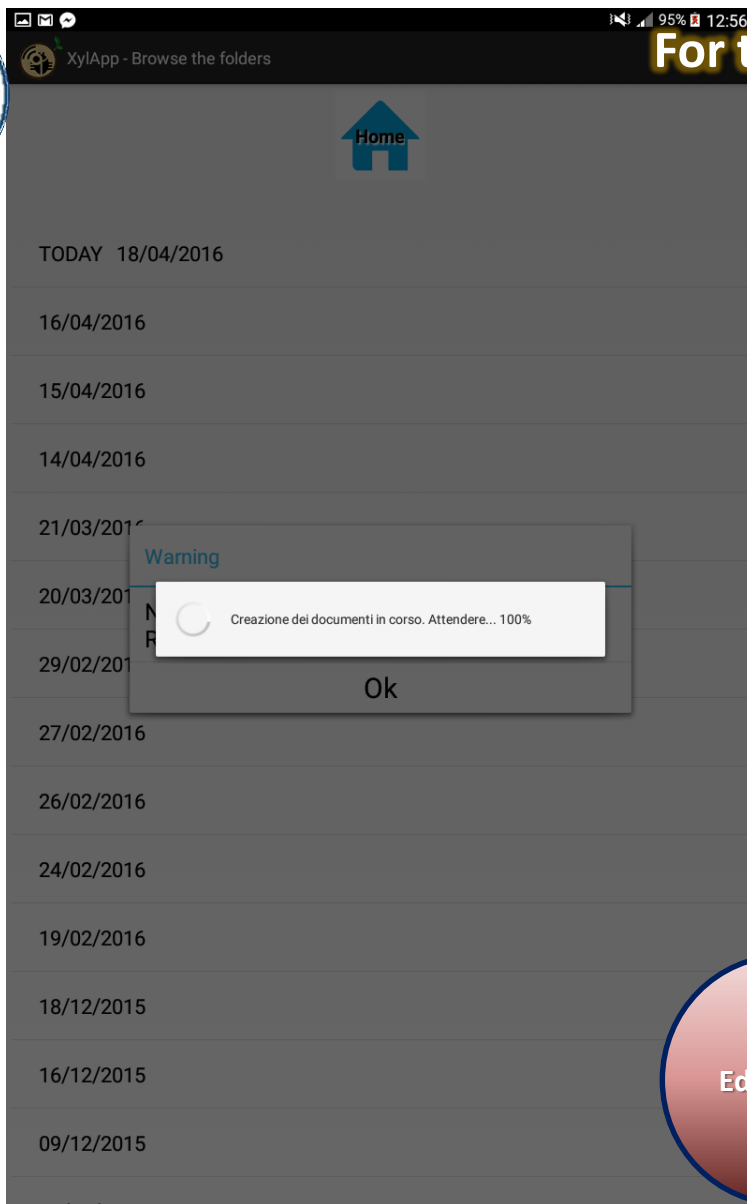
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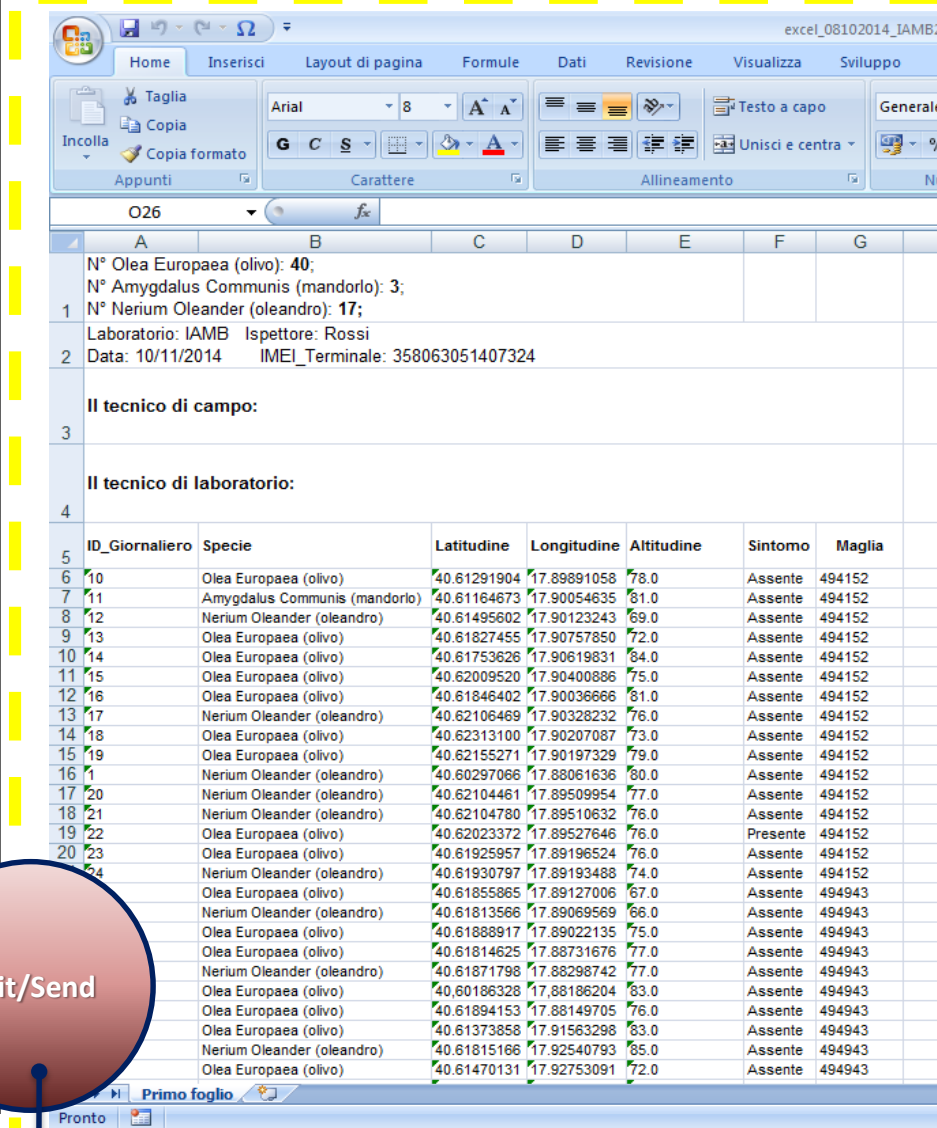




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For the delivery of the samples to laboratories



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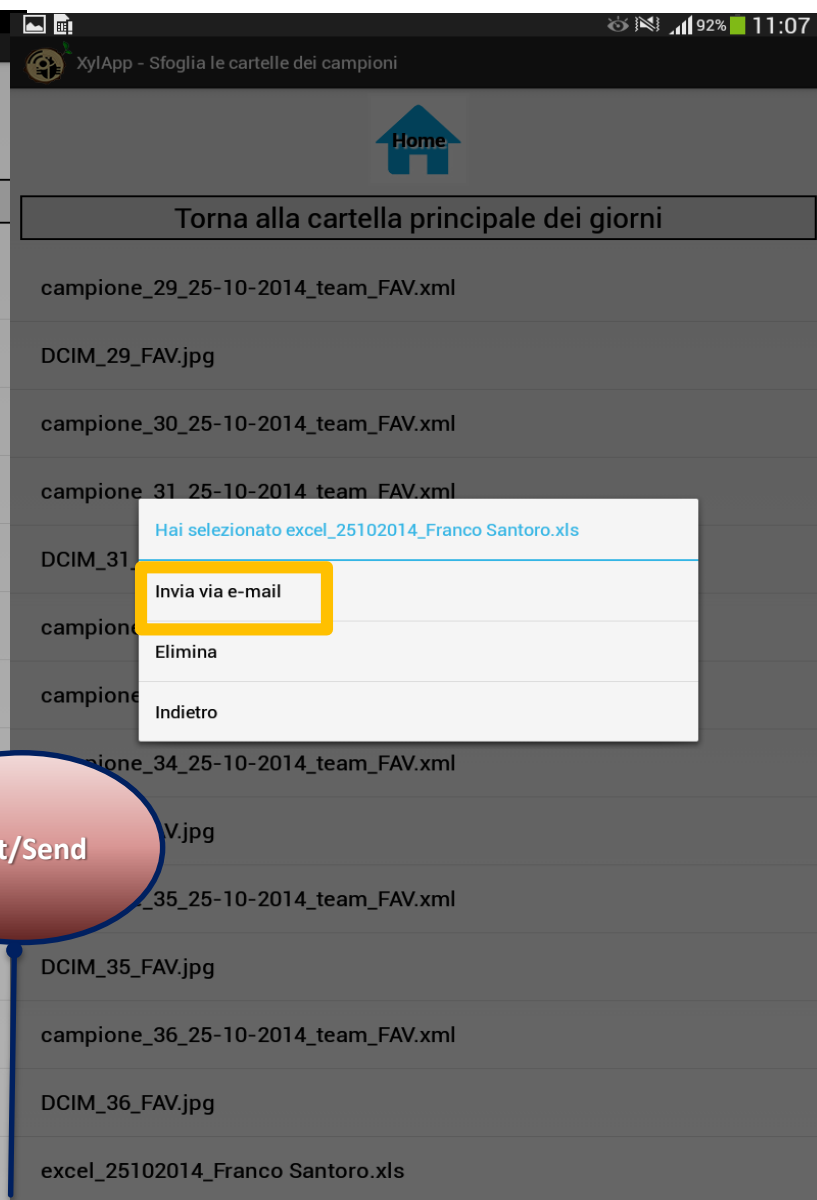
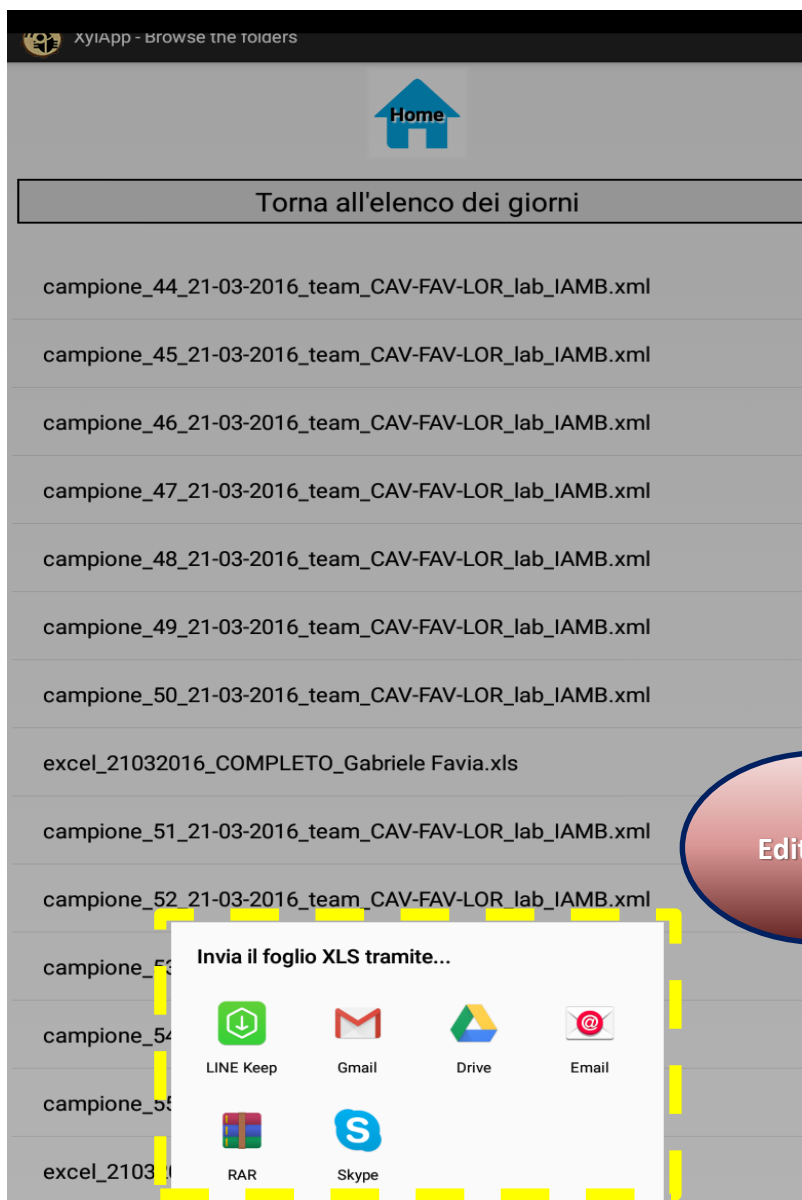
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Procedures of phytosanitary analyses for Xf in plant material

SAMPLE ARRIVAL AND STORAGE

- Sample general **controls** (i.e. number, label, bag status, status of plant material)
- **Anomalies** are described in the acceptance report
- Sample **storage** in Xyl-chamber at 4 ± 2 C° for at least 12h



Sample coding and storage for analyses

- **Data control** of labels, list of samples generated by XylApp and/or enclosed with the delivery report; mistakes/anomalies are reported to the SFR
- **Opening** of the sample bags to exclude the presence of insect
- Sample **storage** in Xyl-chamber





The module "GUIDE"

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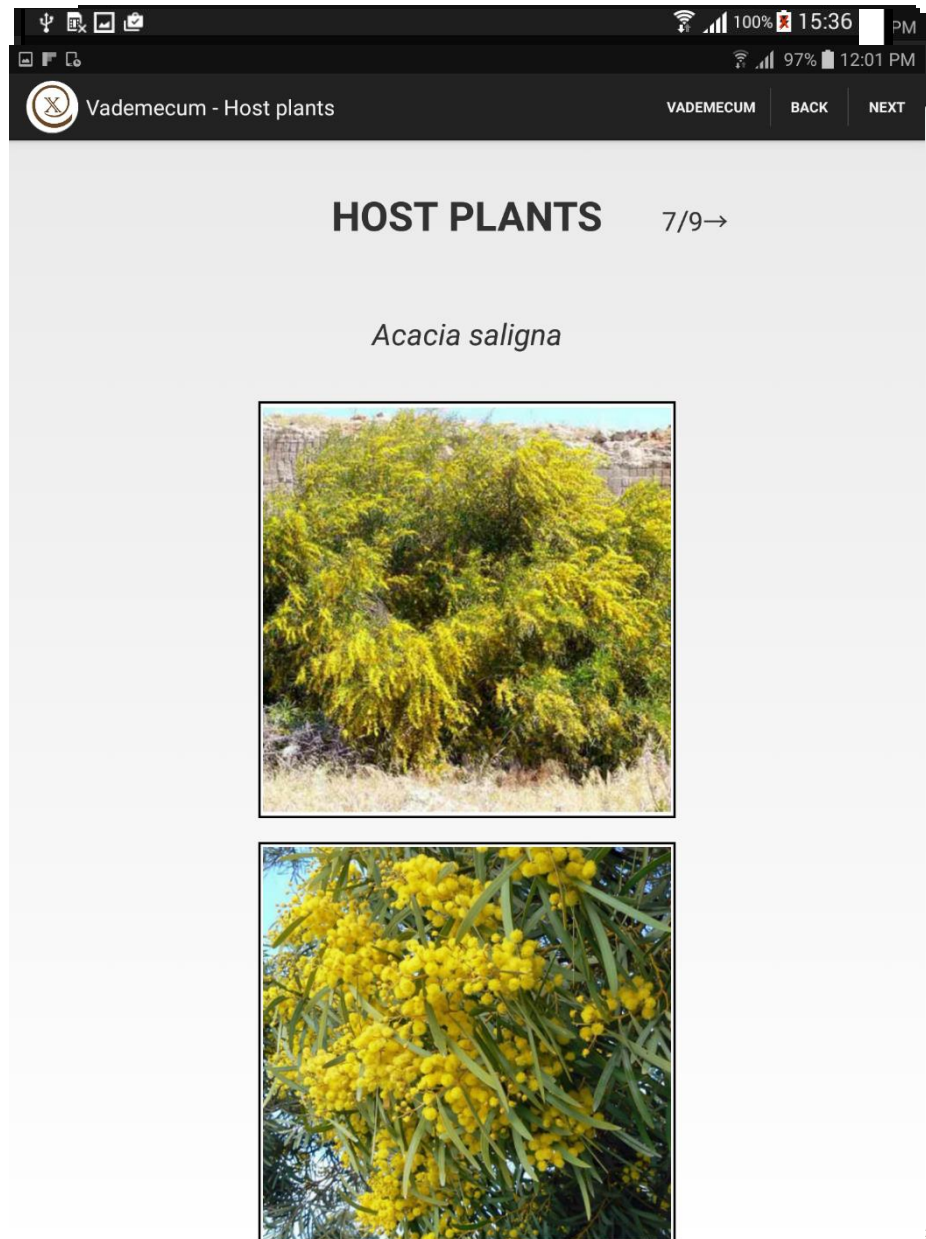
It provides a valuable guide and contains the most important concepts related to monitoring (*equipment, host species, symptoms, vectors, spy insects*, etc.). It constitutes a complete list of information about the field activities.

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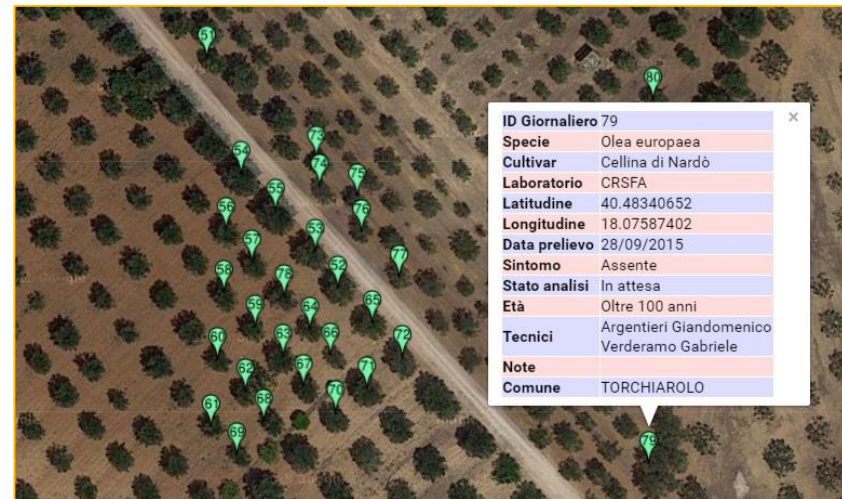


XF Regional Surveillance System

www.ciham.org
www.iamb.it



GPS,
GLONASS



ID Giornaliero 79	
Specie	Olea europaea
Cultivar	Cellina di Nardò
Laboratorio	CRSFA
Latitudine	40.48340652
Longitudine	18.07587402
Data prelievo	28/09/2015
Sintomo	Assente
Stato analisi	In attesa
Età	Oltre 100 anni
Tecnici	Argentieri Giandomenico Verderamo Gabriele
Note	
Comune	TORCHIAROLO



GPRS data (2.5G)

Data for
Lab acceptance

E-mail

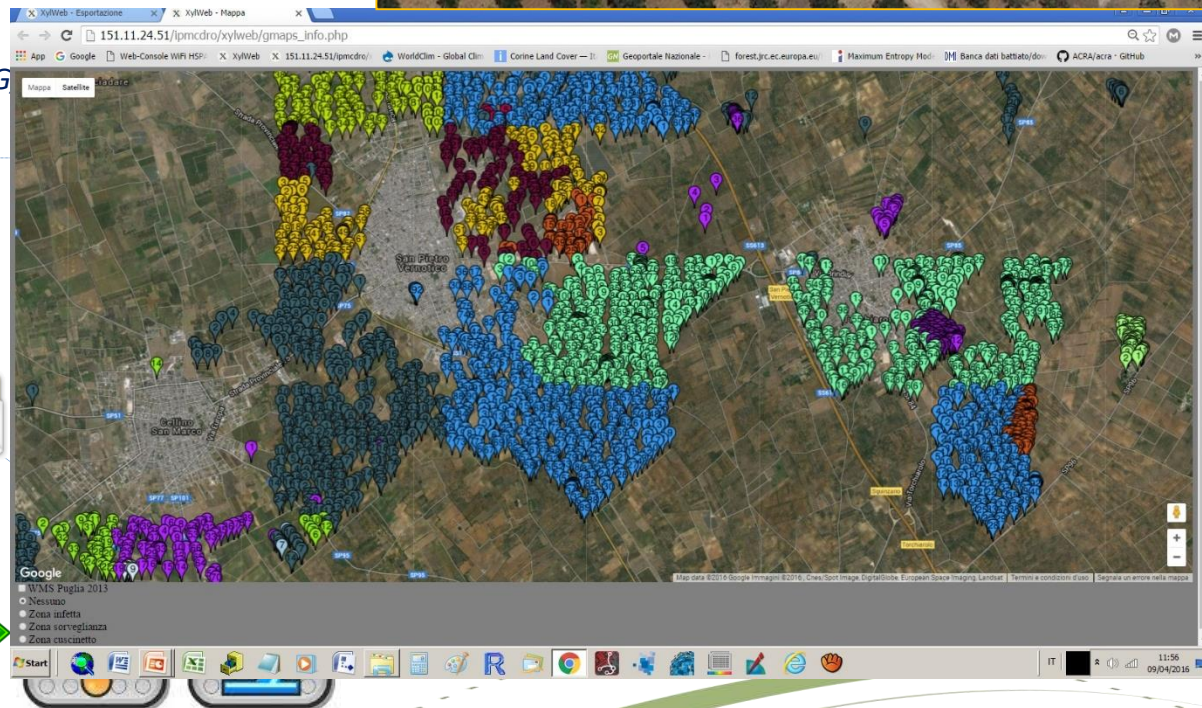


Collected samples

Insects



Plant tissue
material



Laboratories

Séminaire : Invasions biologiques et crises sanitaires
leurs conséquences pour la surveillance et le diagnostic phytosanitaires

Paris – 4 octobre 2017

Santoro 2017





European Commission

Horizon 2020
European Union funding
for Research & Innovation



Xylella fastidiosa Active Containment Through a
multidisciplinary-Oriented Research Strategy

www.cih...am.org
www.ia...nb.it

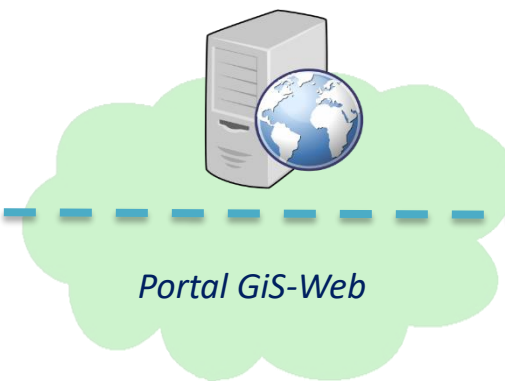
Storing raw data on the server



.xml data
(generation on device)

XylApp Data Packet

Photos
(built-in camera)

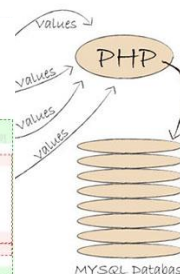


Portal GiS-Web

"http://151.11.24.51/XylAppUE"



```
<html>
<head>
<body>
<div>
<span>
<span>
<span>
<table>
<tbody>
<tr>
<td>
</tr>
</tbody>
</table>
</div>
</body>
</html>
```



"http://151.11.24.51/XylAppUE/my_page_for_acquisition.php"

Santoro 2017



Séminaire : Invasions biologiques et crises sanitaires
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Download of the XylApp_{UE} application



Xylella fastidiosa Active Containment Through a multidisciplinary-Oriented Research Strategy

www.ciham.org
www.ianhb.it

url (uniform resource locator):
<http://www.xfactorsproject.eu/>

Portal Web



Xylella fastidiosa Active Containment Through a multidisciplinary-Oriented Research Strategy



HOME ABOUT RESEARCH CASE STUDIES EVENTS COMMUNICATION LEGISLATION



ABOUT THE PROJECT XF-ACTORS

XF-ACTORS is the first research project in Europe entirely devoted to research on the bacterium Xylella fastidiosa. A multidisciplinary research program implemented by an international consortium of 29 partners. Funded by the European Commission as part of the Horizon 2020 program.

Biology, genetics and pathogenicity of Xf

Ecology and control of Xf vectors

Surveillance programs; tools for early detection and remote sensing approaches



XylApp_{UE} v1.0.0.apk

Séminaire : Invasions biologiques et crises sanitaires
leurs conséquences pour la surveillance et le diagnostic phytosanitaires

Paris – 4 octobre 2017



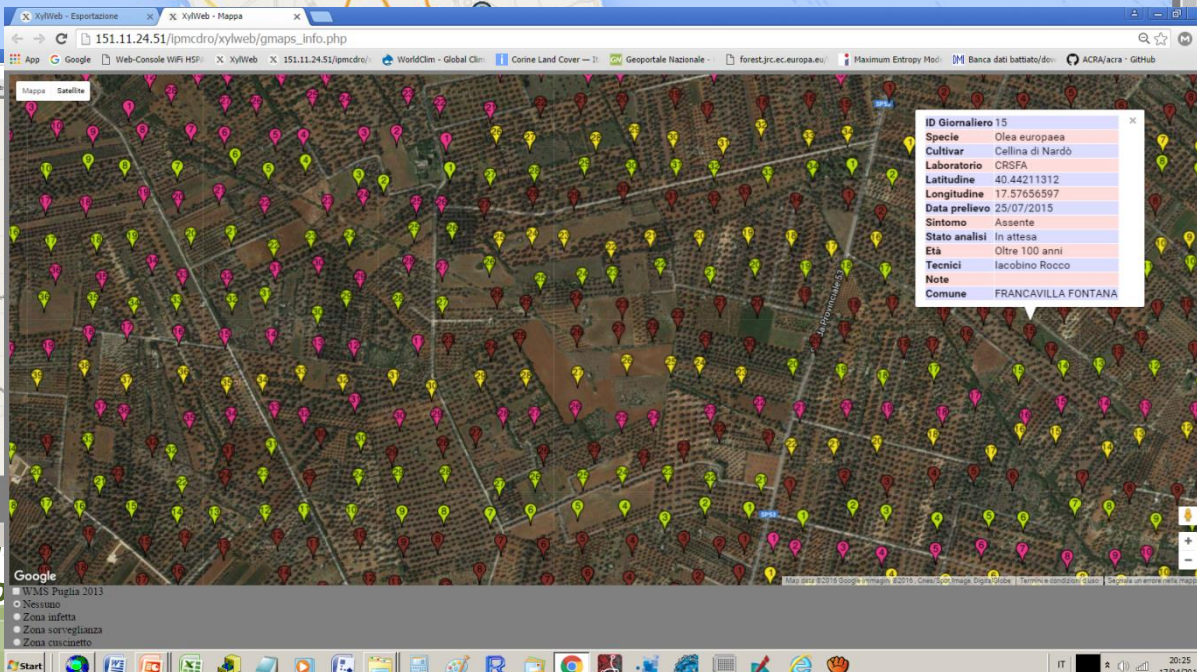
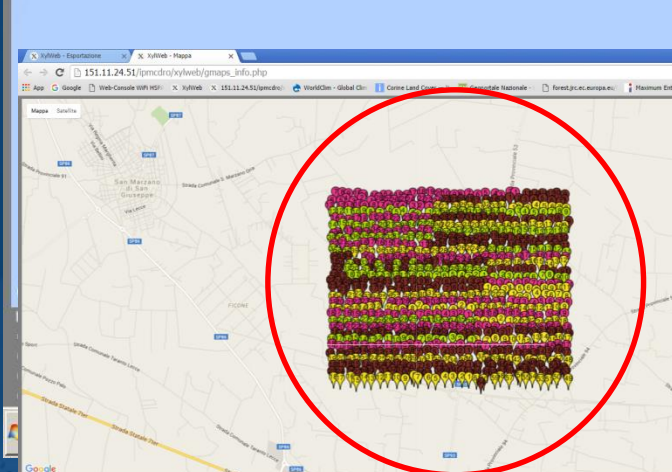
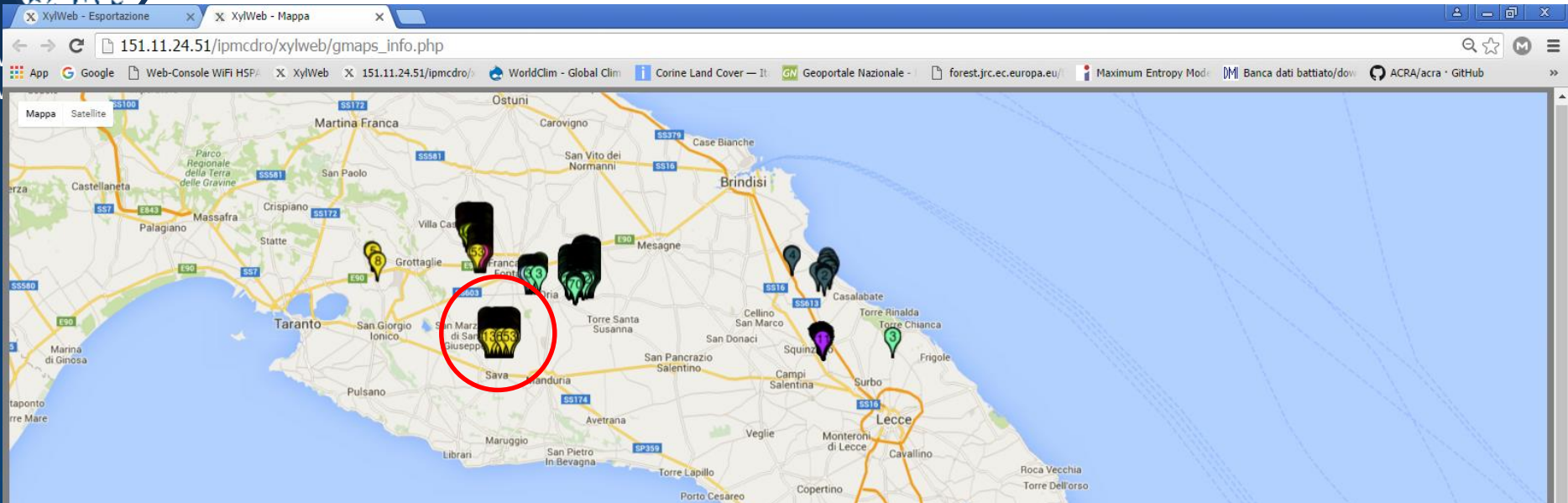
Horizon 2020
European Union Funding
for Research & Innovation



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Using XylApp





Using XylApp (ex. 100 m)

The image displays three screenshots of a web application interface, likely XylApp, showing a map of the Brindisi area in Italy. The top screenshot shows a regional map with several tree icons and a red circle around one. The middle screenshot shows a zoomed-in view of a forest area with many small tree icons. The bottom screenshot shows a zoomed-in view of a specific tree icon with a red circle around it. The browser's address bar shows '151.11.24.51/ipmcdro/xylweb/gmaps_info.php'.

Emergenza Xylella

Using XylApp

Scale: 1000
 X: 759.738,02495
 Y: 4.479.967,25097

Cambia Basemap

Assenza divisa il governo territorio

SAN PANCRAZIO

Regionale InnovaPuglia Regione Puglia

Mappe Satellite

ID Giornaliero 49

Specie	Olea europaea
Cultivar	Cellina di Nardò
Laboratorio	IAMB
Latitudine	40.42905661
Longitudine	18.06248711
Data prelievo	14/07/2015
Sintomo	Assente
Stato analisi	In attesa
Età	Da 20 a 50 anni
Tecnici	Signore Pierpaolo Mazzotta Eugenio
Note	
Comune	TREPUIZZI

Google
 © WMS Puglia 2013
 © Nesvao
 ● Zona infetta
 ● Zona sorveglianza

XylWeb

Benedetto Franco Santoro Logout

Contenitori: Scegliere i filtri di ricerca per i campioni

Esprzione: da [] a []

Terripote: [] Stato analisi [] Note

Flavign: [] Cultivar [] Nome dispositivo

Danni.ons: [] Età [] e-mail

Elisnozione dati: [] Tecnici [] ID assoluto

RICERCA

Santoro 2016

Réseau Français pour la Santé Végétale

Paris – 4 octobre 2017

phytosanitaires

R M T

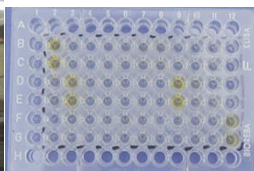
VeG Dia

Diagnostic en santé végétale

LIBRETTI • RUFFINO • FRANCESCHI
 RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE L'AGRICULTURE ET DE LA PÊCHE
 MINISTÈRE DE L'AGROALIMENTAIRE ET DE LA FORÊT

ELISA



Immediate delivery to CNR of SUSPECTED & POSITIVE samples (and relative documentation) for confirmation tests

Delivery report which is signed by IAMB and CNR



At the end of the analyses all material (tubes, bags etc.) are sterilized in autoclave at 121°C, 1 atm, per 15 min.

Identification of the 'spy insects' and analyses

PCR or RT-PCR



Séminaire : Invasions biologiques et crises sanitaires
leurs conséquences pour la surveillance et le diagnostic phytosanitaires

Delivery of all results to SFR

Paris - 4 octobre 2017



XylWeb

Home

Welcome Stefania Gualano

Logout

SAMPLE

Analysis

reception
coding
analysis
I level
confirmatory tes
result

BROWSE

MANAGEMENT

DOWNLOADS

LINKS

Sampling date

Sampling date

01/12/2015

Laboratories

- IAMB
- CRSFA
- CNR-BA
- UNIFG

Sampling

Plants

Insects

Sampling

Plants

Insects

Samples lot

da a2 a a4

Analysis type

ELISA

Start date analysis (1st level)

02/12/2015

SEARCH

Show 25 rows Order by Lab coding ASC DESC

Elements found: 3

Absolute ID	Lab coding	Laboratory	Symptom	Species	Analysis type (I level)	Start date analysis
42557	A2	IAMB	Absent	Olea europaea	Real-Time LAMP	02/12/2015
42568	A3	IAMB	Absent	Olea europaea	DTBIA	02/12/2015
42579	A4	IAMB	Absent	Olea europaea	ELISA	02/12/2015

SAVE PAGE 1

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XylWeb

Home

Welcome Stefania Gualano

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SAMPLE

PROCESSING

export
statistics
report

BROWSE

MANAGEMENT

DOWNLOADS

LINKS

Export

Date

from to

Laboratories

- IAMB
- CRSFA
- CNR-BA
- UNIFG

Sampling

- Plants
- Reports
- Insects
- Check

Data to export

- Daily ID
- Monitoring date
- Lat/Long
- Laboratory
- Analysis result
- Cultivar
- Age
- Technicians
- Notes
- Municipality
- All

SEARCH

Show rows Order by ASC DESC Export all the rows

Elements found: 2888

Absolute ID	Daily ID	Monitor. date	Latitude	Longitude	Altitude	Area	Lab	Species	Main spec
42334	10	01/12/2015	40.55043060	17.99547974	77	-	CRSFA	Olea europaea	Yes
42335	11	01/12/2015	40.55131178	17.99534228	75	-	CRSFA	Olea europaea	Yes



www.cih an
www.ia nb

Cartel1 - Microsoft Excel

Strumenti tabella

Home Inserisci Layout di pagina Formule Dati Revisione Visualizza Sviluppo Acrobat Progettazione

Nome tabella: Tabella1

Riepiloga con tabella pivot
Rimuovi duplicati
Ridimensiona tabella

Proprietà

Esporta Aggiorna
Apri nel browser
Scollega

Dati tabella esterna

Riga di intestazione
Riga Totale
Righe alternate evidenziate

Prima colonna
Ultima colonna
Colonne alternate evidenziate

Opzioni stile tabella

Stili tabella

A1	=ID_assoluto									
	A	B	C	D	E	F	G	H	I	J
1	ID assoluto	Data monitor	Latitudine	Longitudine	Laboratorio	Specie	Sintomo	Esito analisi	Cultivar	Tecnici
2	138	02/02/2015	40.27135064	40.27135064	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
3	139	02/02/2015	40.27323319	40.27323319	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
4	141	02/02/2015	40.27124347	40.27124347	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Carmignano Pasquale Mariano
5	142	02/02/2015	40.27924584	40.27924584	CRSFA	Olea Europaea	-	-	Ogliarola salentina	Carmignano Pasquale Mariano
6	143	02/02/2015	40.268845	40.268845	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Carmignano Pasquale Mariano
7	144	02/02/2015	40.26848142	40.26848142	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
8	145	02/02/2015	40.26839789	40.26839789	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Carmignano Pasquale Mariano
9	146	02/02/2015	40.27940213	40.27940213	CRSFA	Olea Europaea	-	-	Ogliarola salentina	Carmignano Pasquale Mariano
10	148	02/02/2015	40.27948986	40.27948986	CRSFA	Olea Europaea	-	-	Ogliarola salentina	Carmignano Pasquale Mariano
11	149	02/02/2015	40.26358141	40.26358141	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
12	150	02/02/2015	40.26093159	40.26093159	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
13	151	02/02/2015	40.26120512	40.26120512	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
14	152	02/02/2015	40.26116923	40.26116923	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Carmignano Pasquale Mariano
15	153	02/02/2015	40.28030452	40.28030452	CRSFA	Olea Europaea	-	-	Ogliarola salentina	Carmignano Pasquale Mariano
16	154	02/02/2015	40.2823277	40.2823277	CRSFA	Olea Europaea	-	-	Ogliarola salentina	Carmignano Pasquale Mariano
17	155	02/02/2015	40.2719462	40.2719462	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
18	156	02/02/2015	40.26938457	40.26938457	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
19	158	02/02/2015	40.26937652	40.26937652	CRSFA	Olea Europaea	Assente	-	Bella di Cerignola	Iacobino Rocco
20	159	02/02/2015	40.26903145	40.26903145	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
21	160	02/02/2015	40.26929554	40.26929554	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
22	161	02/02/2015	40.26717503	40.26717503	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
23	162	02/02/2015	40.26728488	40.26728488	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
24	163	02/02/2015	40.26694909	40.26694909	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
25	164	02/02/2015	40.26701206	40.26701206	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
26	166	02/02/2015	40.26456862	40.26456862	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
27	167	02/02/2015	40.26460805	40.26460805	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Iacobino Rocco
28	168	02/02/2015	40.26426904	40.26426904	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Iacobino Rocco
29	169	02/02/2015	40.26464003	40.26464003	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
30	170	02/02/2015	40.26440233	40.26440233	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Iacobino Rocco
31	171	02/02/2015	40.26436984	40.26436984	CRSFA	Olea Europaea	Assente	-	Ogliarola salentina	Iacobino Rocco
32	172	02/02/2015	40.26432783	40.26432783	CRSFA	Olea Europaea	Assente	-	Cellina di Nardò	Iacobino Rocco



Séminaire : Invasions biologiques et crises sanitaires
leurs conséquences pour la surveillance et le diagnostic phytosanitaires

Paris – 4 octobre 2017





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The module "Processing"

SEARCH

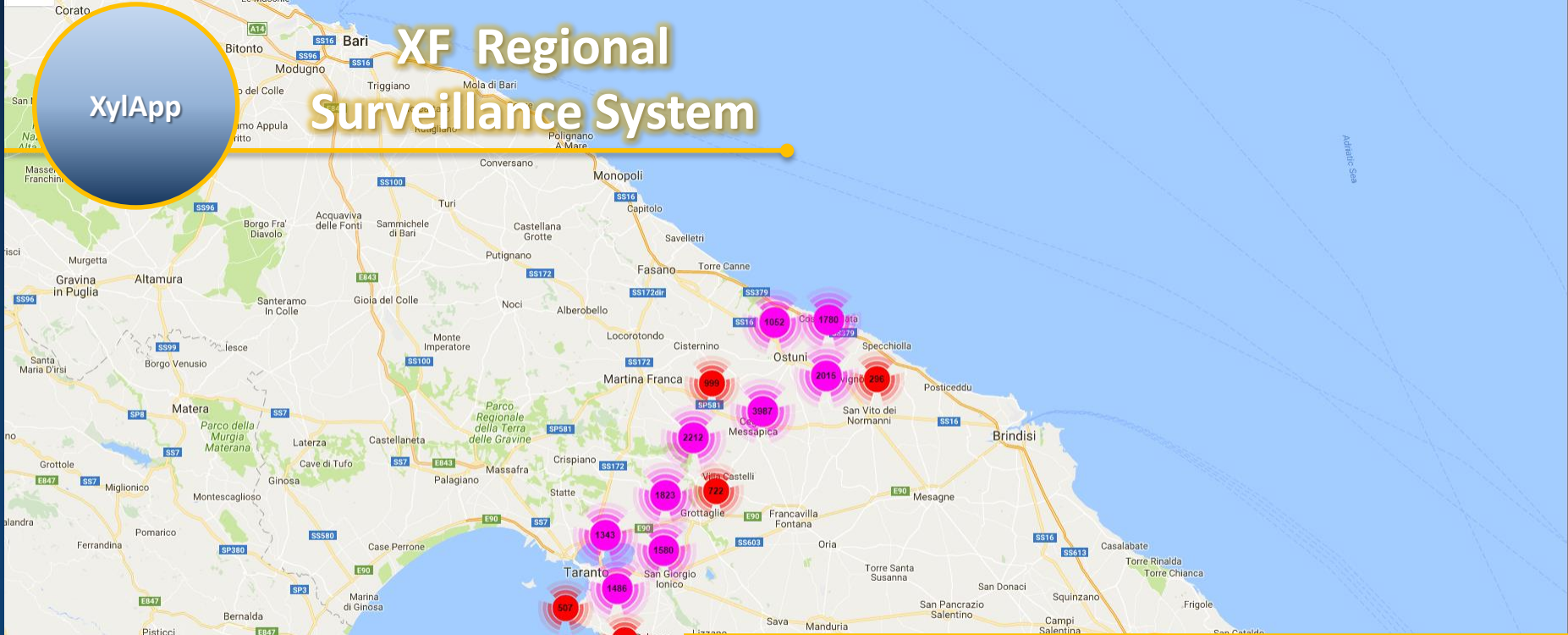
Show 25 rows Order by Absolute ID ASC DESC **Show on map** Export to Excel Export all the rows

Elements found: 1382

Daily ID	Monitor. date	Latitude	Longitude	Lab	Species	Symptom	Analysis results	Eradicated	Cultivar
10	01/12/2015	40.43153155	17.94754335	IAMB	Nerium oleander	Absent		<input type="checkbox"/>	-
11	01/12/2015	40.43181179	17.94724021	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Cellina di Nardò
12	01/12/2015	40.43187483	17.94708129	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Cellina di Nardò
13	01/12/2015	40.43212927	17.94724625	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
14	01/12/2015	40.43201953	17.94780917	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
15	01/12/2015	40.43178423	17.94658676	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
16	01/12/2015	40.43183706	17.94630546	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
17	01/12/2015	40.43207057	17.94648383	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
18	01/12/2015	40.43197913	17.94648394	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
19	01/12/2015	40.43245235	17.94690091	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
1	01/12/2015	40.43032419	17.94948589	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Cellina di Nardò
20	01/12/2015	40.43246563	17.94673763	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
21	01/12/2015	40.43260650	17.94684023	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino
22	01/12/2015	40.43245261	17.94722177	IAMB	Olea europaea	Absent		<input type="checkbox"/>	Leccino

XylApp

XF Regional Surveillance System



www.ciheam.org

www.iamb.it

Santoro 20167



XylApp

XF Regional Surveillance System

Puglia con | Emergenza Xylella - Sito | Consultazione Dati Zone

webapps.sit.puglia.it/freewebapps/MonitoraggioXFSintesi/

Emergenza Xylella

Legenda

OLIVO

- ▲ Olivo - Campioni 2016-17
- ▲ POSITIVO ESTIRPATO
- ▲ POSITIVO
- ▲ NEGATIVO
- ▲ IN ATTESA
- ▲ ISPEZIONE VISIVA PIANTA SINTOMATICA

ALTRE SPECIE

- Altre specie - Campioni 2016-17
- POSITIVO
- NEGATIVO

Scala: 1000000
 X: 771.775,81120
 Y: 4.618.316,91375

Desktop 22:05 03/10/2017

www.ciheam.org

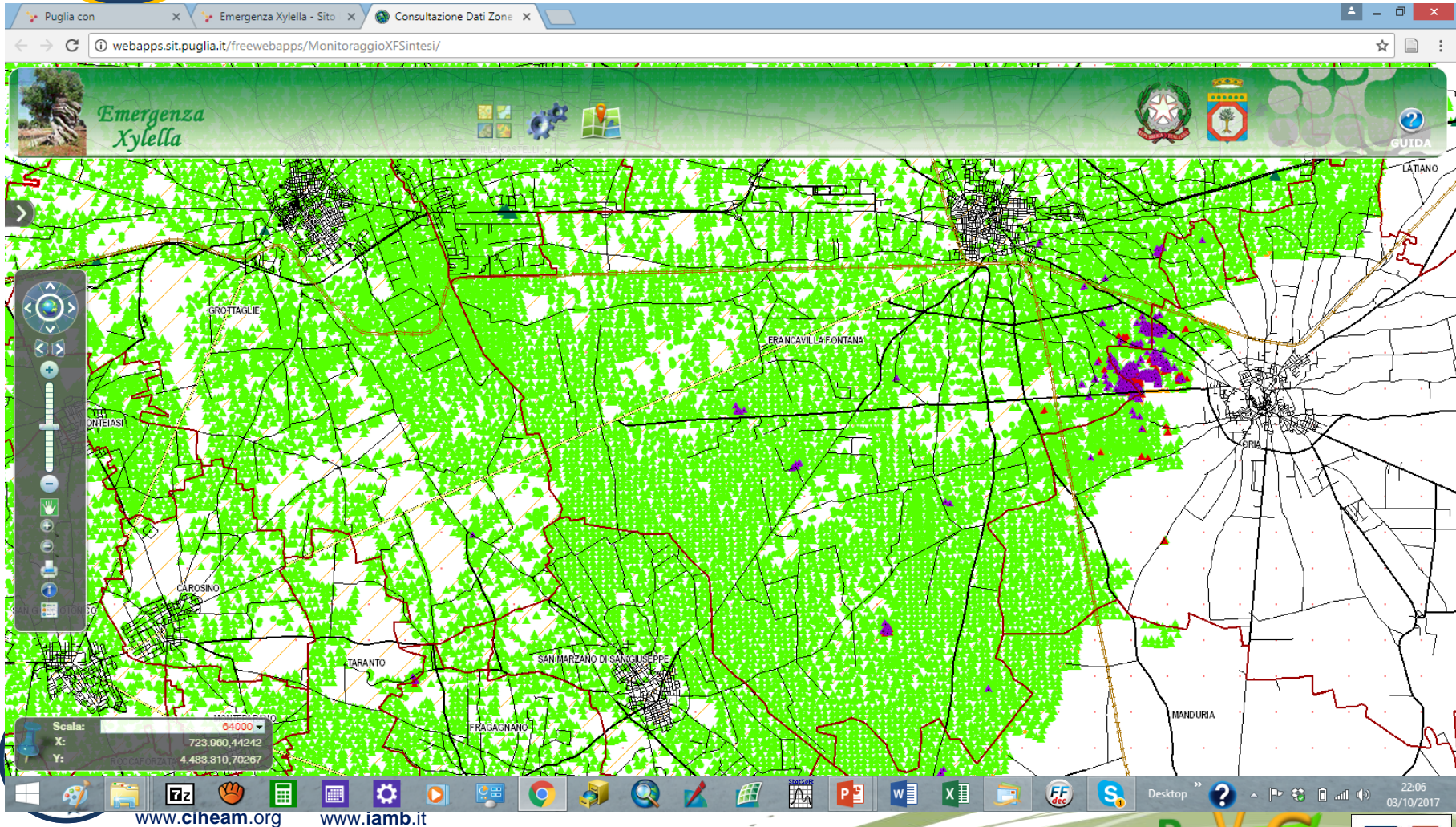
www.iamb.it

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leurs conséquences pour la surveillance et le diagnostic phytosanitaires

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XF Regional Surveillance System



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webapps.sit.puglia.it/freewebapps/MonitoraggioXFSintesi/

Emergenza Xylella

FRANCAVILLA FONTANA | ORIA

Scala: 8000
 X: 721.325,73830
 Y: 4.488.018,21315

Windows taskbar: File Explorer, Chrome, Word, Excel, etc.

System tray: Desktop, 22:07, 03/10/2017



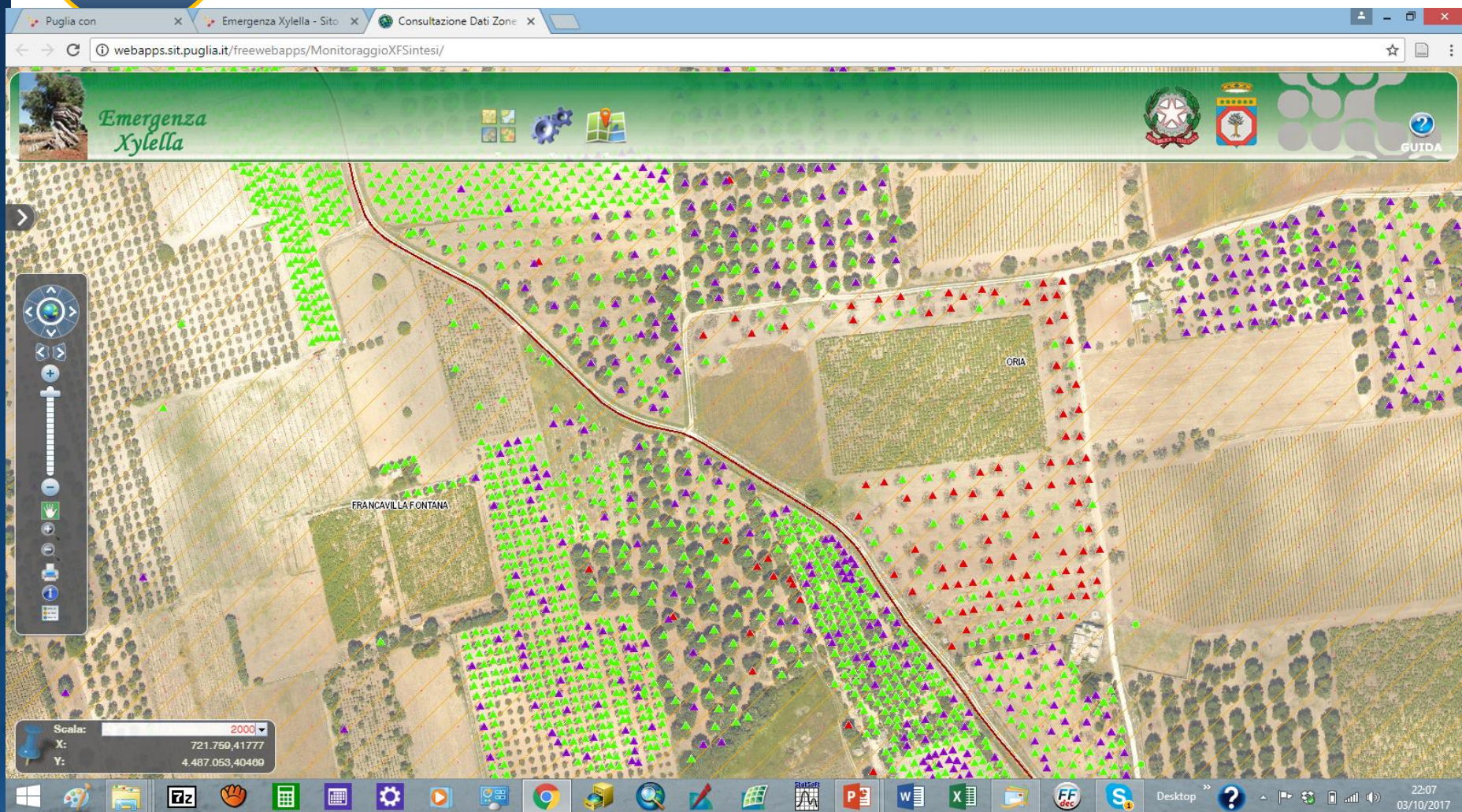
*Séminaire : Invasions biologiques et crises sanitaires
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XF Regional Surveillance System

XylApp



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MAI BARI



XylApp: une application Android appliquée à la surveillance de *Xylella fastidiosa* en Italie

Franco SANTORO and Franco VALENTINI

Centre International de Hautes Etudes Agronomiques Méditerranéennes (CIHEAM)



Merci



Séminaire : Invasions biologiques et crises sanitaires
leurs conséquences pour la surveillance et le diagnostic phytosanitaires

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Cordoba, le 19 juin 2017