

Incontro 2 dicembre 2021



9.30 SALUTI E INTRODUZIONE

- 09.40 "SINTESI DEL PIANO DI SORVEGLIANZA 2021" MARIANGELA
- 09.50 "IL LABORATORIO V 2.0: LE NOSTRE SFIDE" A CURA DI TUTTI I TECNICI DEL LABORATORIO DEL SFR (DA REMOTO)
- 10.30 MATTEO MARCHIORO UNIPD "PIANO DI ERADICAZIONE ALB A CORNUDA (VENETO) E DI MONITORAGGIO CLB IN LOMBARDIA" (DA REMOTO)
- 10.50 RISULTATI PIANO DI CONTROLLO CERAMBICIDI IN LOMBARDIA ALESSANDRO BIANCHI SFR (DA REMOTO)
- 11.00 ELENA CONELLA UNITO "INTERAZIONI PIANTA-INSETTO-MICROORGANISMI IN SPECIE AUTOCTONE E ALLOCTONE DI EMERGENTE INTERESSE FITOSANITARIO" (DA REMOTO)
- 11.20 RISULTATI PIANO DI CONTROLLO DELLA CIMICE ASIATICA IN LOMBARDIA PAOLO CULATTI SFR (DA REMOTO)

11.30 PAUSA

- 11.40 GIORGIO SPERANDIO UNIBS PROGETTO GESPO - STRUMENTI A SUPPORTO DELLA GESTIONE INTEGRATA DI POPILLIA JAPONICA (IN PRESENZA)
- 12.00 ANDREA BATTISTI UNIPD: PROGETTO GESPO APPROCCIO DI SISTEMA PER IL CONTROLLO DI POPILLIA JAPONICA (IN PRESENZA)
- 12.20 GIACOMO SANTOIEMMA UNIPD IMPATTO DELL'INVASIONE DI POPILLIA JAPONICA SULLE COMUNITÀ DI NEMATODI ENTOMOPATOGENI E DI SCARABEIDI INDIGENI (IN PRESENZA)
- 12.40 DOMANDE E DISCUSSIONE

13.00 PAUSA PRANZO

- 14.00 ISPM 6 SURVEILLANCE E NUOVE LINEE GUIDA IPPC MARIANGELA
- 14.30 GEOPORTALE ANNA MARIA MASIELLO, GIORGIO GALIMBERTI (IN PRESENZA) E APP SORVEGLIANZA MARIANGELA
- 14.45 SCHEMA ORGANIZZATIVO PER LA GESTIONE DELLE EMERGENZE DI SORVEGLIANZA E LOTTA MARIANGELA
- 15.00 DISCUSSIONE

15.30 TERMINE INCONTRO



Regione
Lombardia

Servizio Fitosanitario



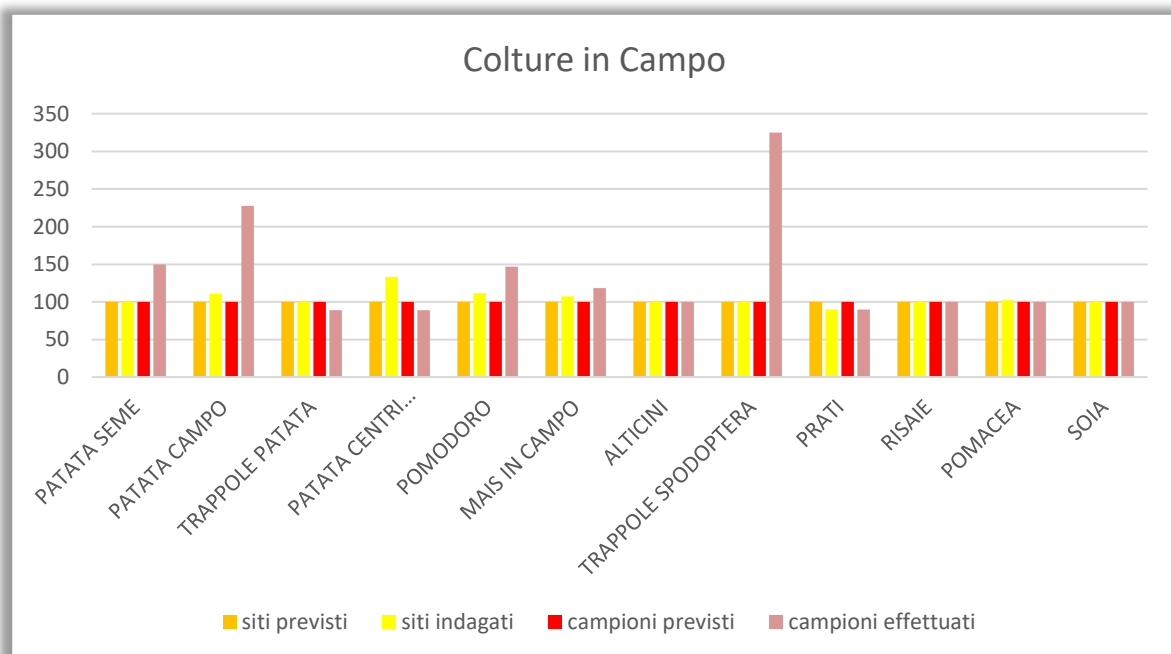
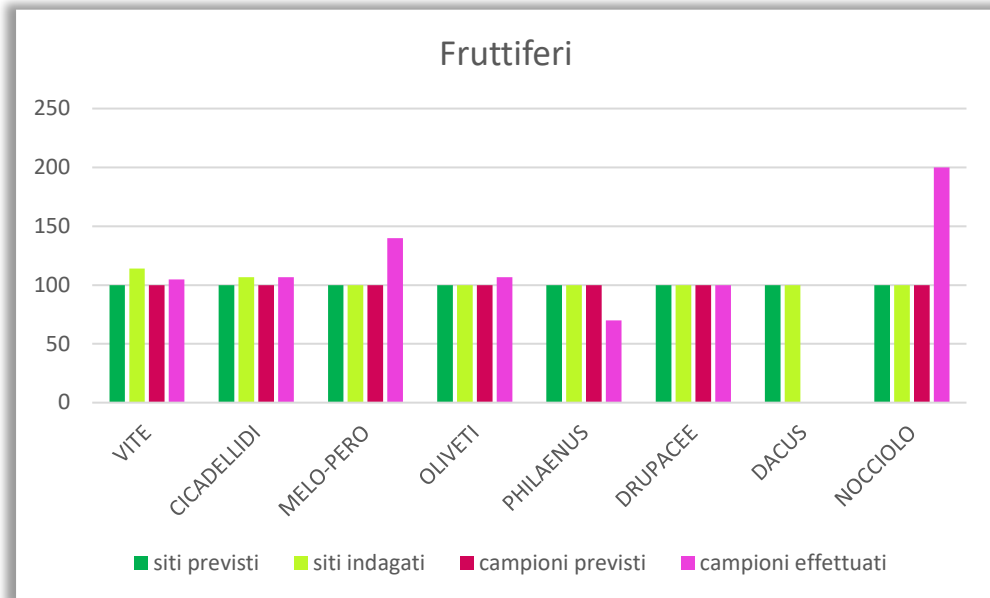
Resoconto Sorveglianza 2021



Regione
Lombardia

Servizio Fitosanitario

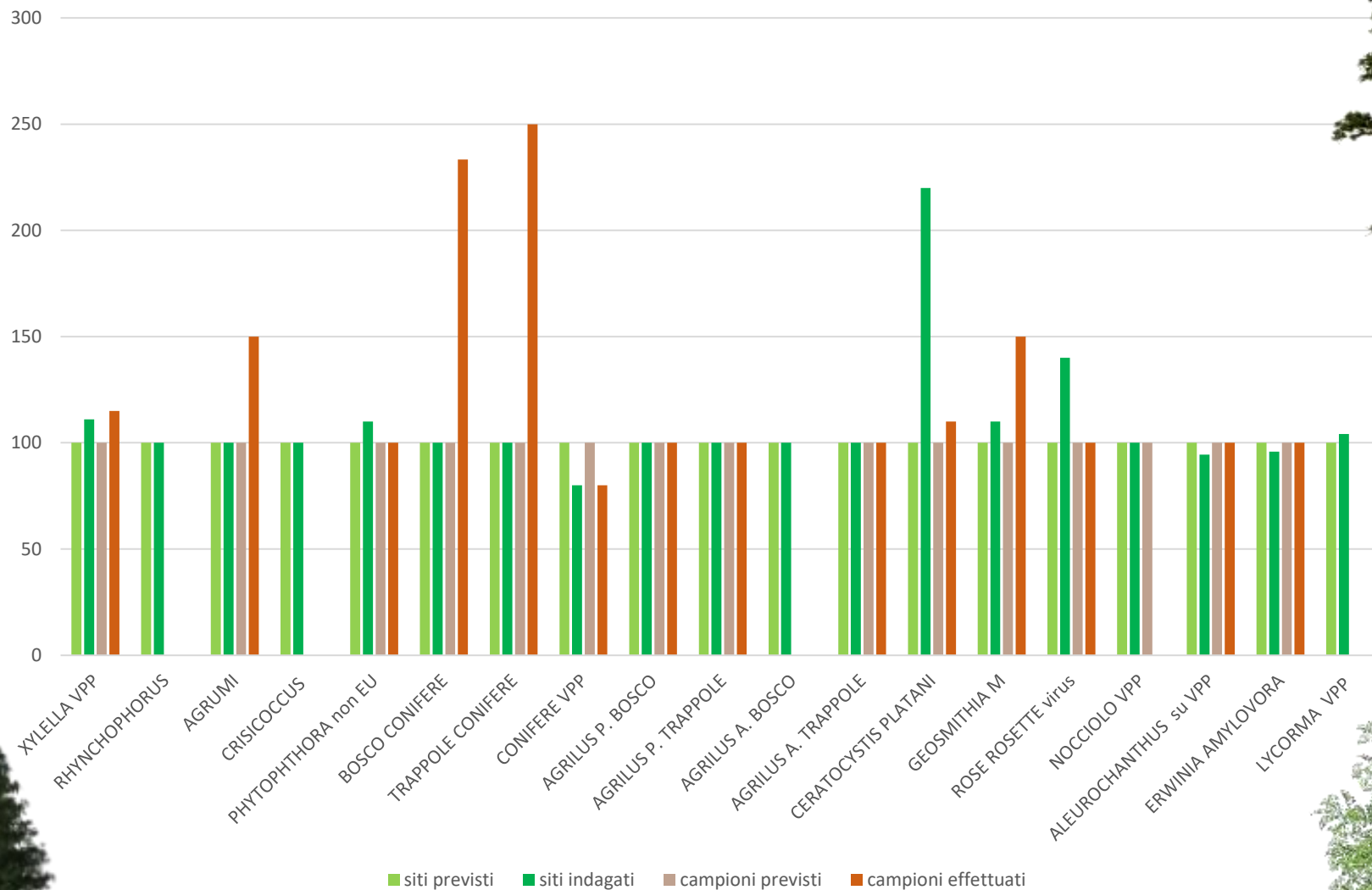
[illegible]



**Regione
Lombardia**

Servizio Fitosanitario

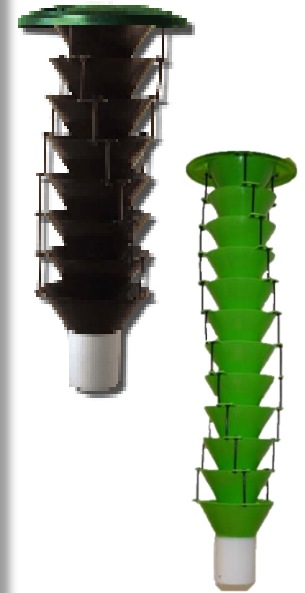
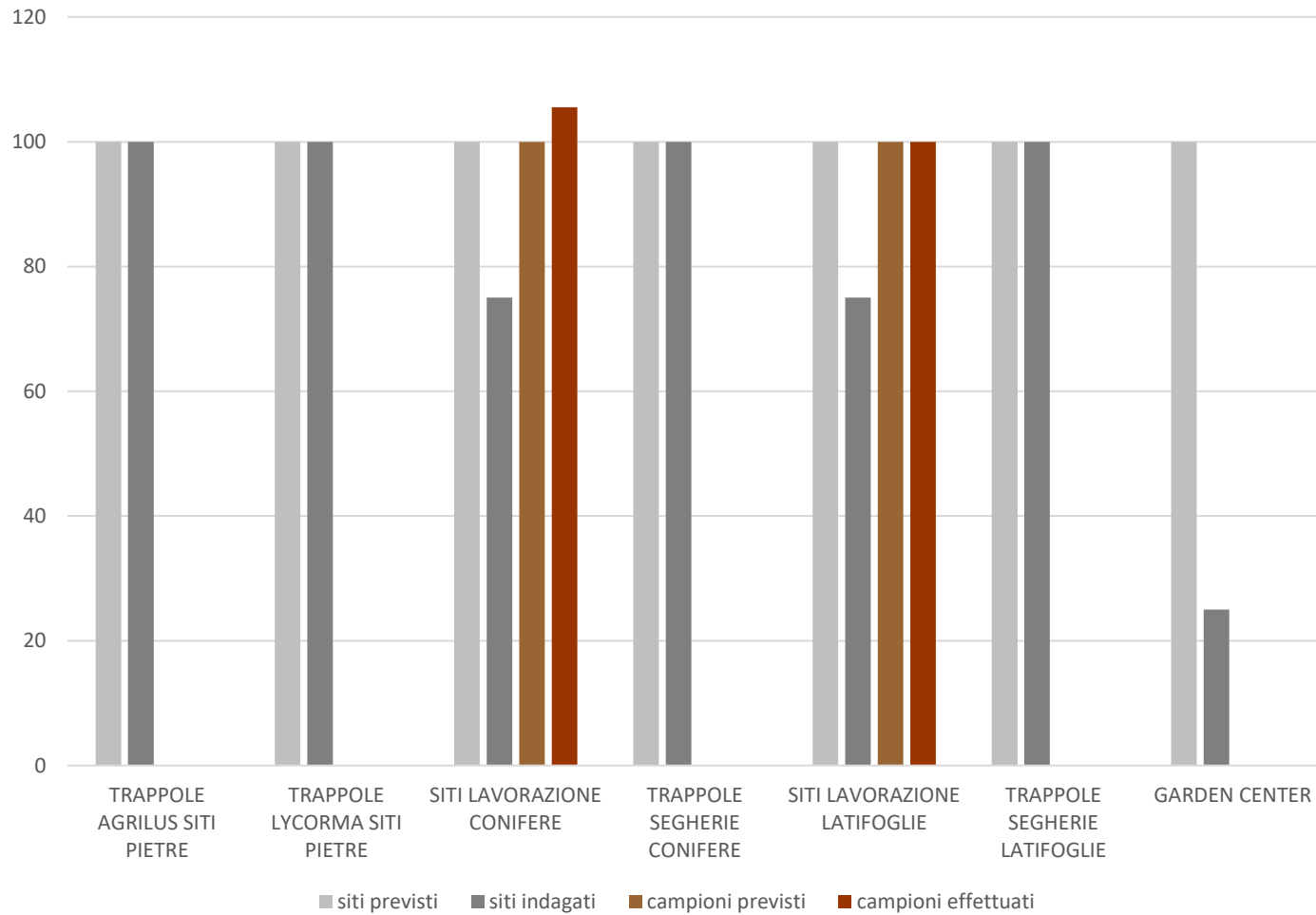
Forestali e Urbane



**Regione
Lombardia**

Servizio Fitosanitario

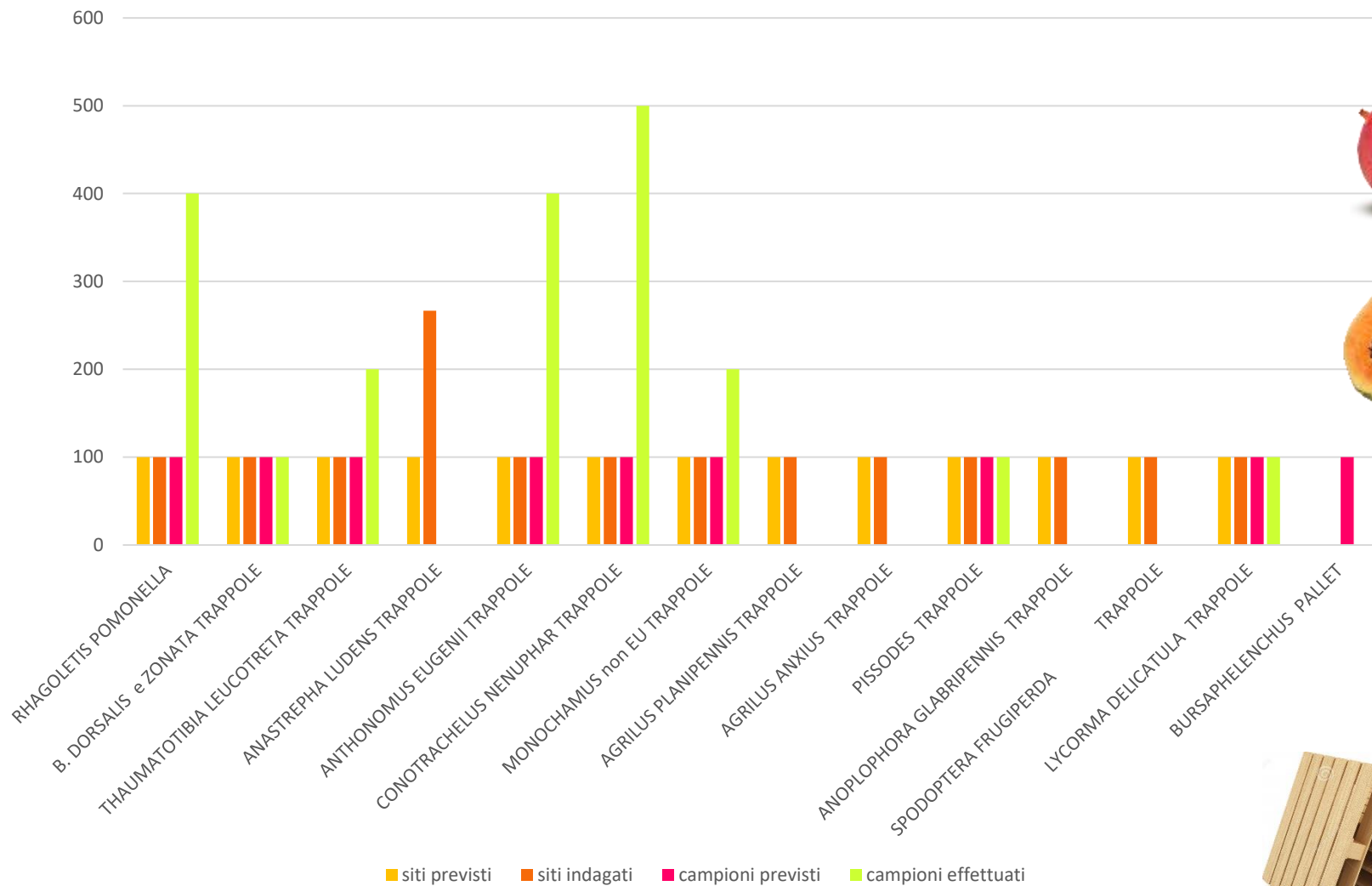
O.N. legno e importatori



Regione
Lombardia

Servizio Fitosanitario

Aeroporti e Ortomercati



**Regione
Lombardia**

Servizio Fitosanitario

Grazie a tutti!



Regione
Lombardia

Servizio Fitosanitario

Sorveglianza Fitosanitaria - Piano 2021

| A. Batteri (P.NAZ) | PRIOR |
|------------------------------------|-------|
| Clavibacter sepedonicus | 2 |
| Erwinia amylovora ZP e ZT | RNQP |
| Pantoea stewartii subsp. stewartii | 3 |
| Ralstonia solanacearum | 2 |
| Ralstonia pseudosolanacearum | |
| Safni | 3 |
| Xylella fastidiosa | 1 |

| B. Funghi e oomiceti | PRIOR |
|--|-------|
| Anisogramma anomala | 3 |
| Ceratocystis platani | 2 |
| Fusarium circinatum | 2 |
| Geosmithia morbida | 2 |
| Phytophthora ramorum (non-EU isolates) | 3 |
| Synchytrium endobioticum | 2 |
| Thecaphora solani | 3 |

| E. Molluschi (P.NAZ) | PRIOR |
|---------------------------|-------|
| Pomacea spp. - Ampullarie | 2 |

| C. Insetti e acari (P.NAZ) | PRIOR |
|---|-------|
| Acrobasis pyrivorella | 3 |
| Agrilus anxius | 1 |
| Agrilus planipennis | 1 |
| Aleurocanthus spiniferus | 2 |
| Anomala orientalis | 3 |
| Anoplophora chinensis | 1 |
| Anoplophora glabripennis | 1 |
| Anthonomus eugenii | 1 |
| Anthonomus quadrigibbus | 3 |
| Aromia bungii | 1 |
| Bactericera cockerelli | 1 |
| Cicadellidae (nn-Eu) vector Pierce's disease | 3 |
| Crisicoccus pini | 4a |
| Conotrachelus nenuphar | 1 |
| Dendrolimus sibiricus | 1 |
| Epitrix cucumeris, E. papa, E. subcrinita, E. tubaris | 2 |
| Monochamus spp. (non-European) | 3 |
| Pissodes spp. | 3 |
| Polygraphus proximus | 3 |
| Pityophthorus juglandis | 2 |
| Popillia japonica | 1 |
| Spodoptera frugiperda | 1 |
| Tecia solanivora | 3 |
| Anastrepha ludens | 1 |
| Bactrocera dorsalis | 1 |
| Bactrocera zonata | 1 |
| Rhagoletis pomonella | 1 |
| Thaumatotibia leucotreta | 1 |

| D. Nematodi (P.NAZ) | PRIOR |
|----------------------------|-------|
| Bursaphelenchus xylophilus | 1 |
| Globodera pallida | 2 |
| Globodera rostochiensis | 2 |
| Hirschmanniella spp. | 3 |
| Meloidogyne chitwoodi | 2 |
| Meloidogyne fallax | 2 |
| Meloidogyne graminicola | 2 |

+ Heterodera helachista (NOSTRO)
+ Heterodera glycines (NOSTRO)

| F. Virus, viroidi, phytoplasmas (P.NAZ) | PRIOR |
|--|-------|
| Grapevine flavescenze doree and its vector Scaphoideus titanus | 2 |
| Tomato brown rugose fruit virus | 2 |
| Tomato leaf curl New Delhi virus | 2 |
| Rose rosette virus and its vector Phylloxera | 2 |

+ Apple Proliferation Phytoplasma (NOSTRO)
+ Plum Pox Virus (NOSTRO)

+ Rhynchosporium ferrugineus (NOSTRO)
+ Lycorma delicatula (NOSTRO)

53 da P.NAZ

6 nostri

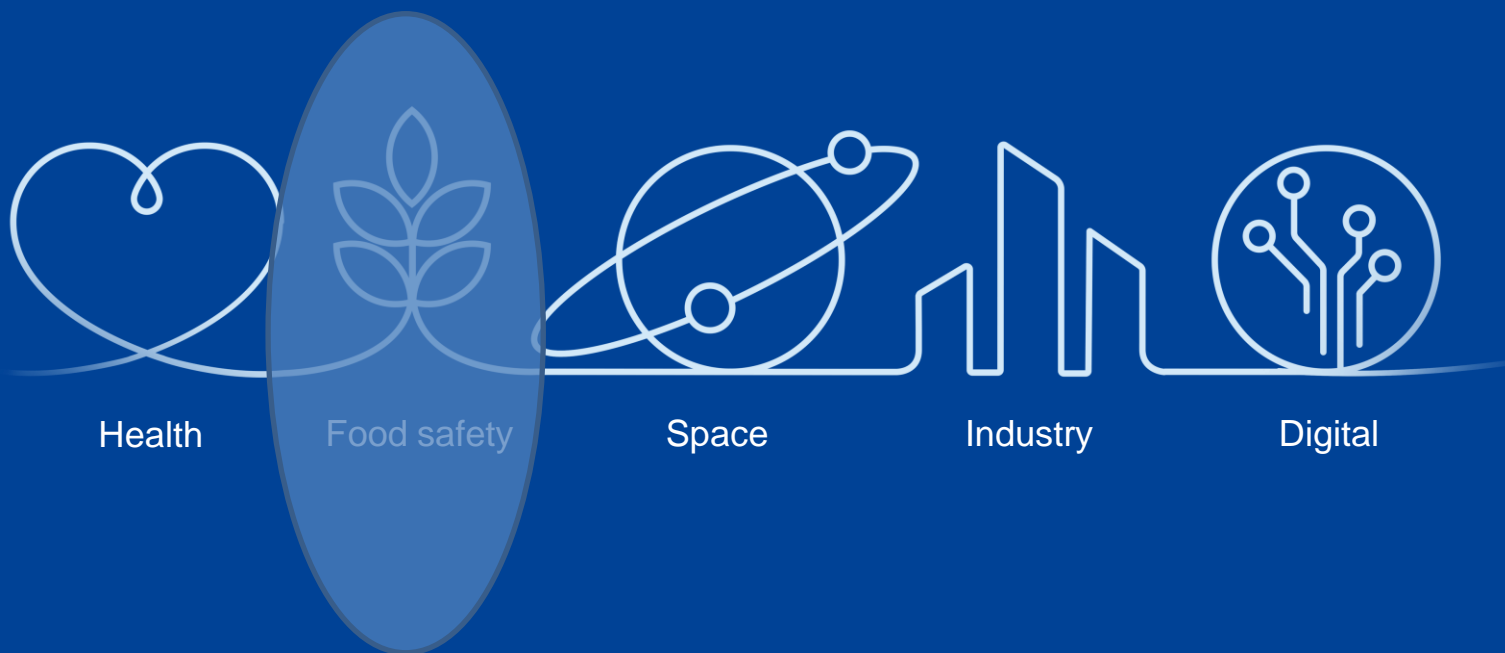
TOT 59 o.n.



Regione
Lombardia

Servizio Fitosanitario

Programme sectors



Regione
Lombardia

Servizio Fitosanitario

Regulation (EU) 2021/690 – Single Market Programme of 28 April 2021

Rules set up by the Commission Implementing Decision on the financing of the Programme for Single Market 2021-2024 on the Implementation of Phytosanitary programmes for 2021 and 2022.

- Based on budget availability, pests eligible for EU co-financing and related measures shall be prioritised in order of importance in 5 priorities
- **Priority 1** - Priority pests listed in the Annex of Commission Delegated Regulation (EU)
- **Priority 2** - Pests subject to Union measures or pests listed in part B of Annex II of Regulation (EU) 2019/2072.
- **Priority 3** – Other Union quarantine pests, listed in Part A of Annex II of Commission Implementing Regulation (EU) 2019/2072 not listed above, included by each Member State in their multiannual surveillance programmes in line with EU legal obligations of Regulation (EU) 2016/2031.



**Regione
Lombardia**

Servizio Fitosanitario

Regulation (EU) 2021/690 – Single Market Programme of 28 April 2021

- **Priority 4** - Emerging pests
- **Priority 5** – Pests referred in priority 2 group and which are subject to Union measures or listed in part B of Annex II of Regulation (EU) 2019/2072

As per Delegated act for priority pests: Commission Delegated Regulation (EU)2019/1702

Following the order of priorities established in section 2.8.4., for the first group of measures where the co-funding requests exceed the budget available, the co-funding rates will be reduced by the number of points necessary to fit with the total budget available (EUR 20,000,000). The remaining priorities and measures, if any, will not be co-funded.

The budget adopted in the work program 2021-2022 has been set at :

EUR 20.000.000 for 2021 and EUR 20.000.000€ for 2022



**Regione
Lombardia**

Servizio Fitosanitario

Regulation (EU) 2021/690 – Single Market Programme of 28 April 2021

Applications 2021

| Member States | 50% Co-funded (incl. 7% flat rate) | 75% co-funded (incl. 7% flat rate) |
|----------------|---------------------------------------|---------------------------------------|
| Austria | €133,765.91 | |
| Belgium | €349,534.00 | |
| Cyprus | | €34,466.73 |
| Czech Republic | | €248,029.14 |
| Germany | €1,816,139.22 | |
| Denmark | €217,334.04 | |
| Estonia | | €157,553.86 |
| Spain | €8,027,921.30 | |
| Finland | €211,945.41 | |
| France | €3,139,418.53 | |
| Greece | | €755,393.94 |
| Croatia | | €267,829.22 |
| Ireland | €144,509.83 | |
| Italy | €5,418,204.84 | |
| Lithuania | | €108,606.74 |
| Luxembourg | €69,373.46 | |
| Latvia | | €124,593.29 |
| Malta | €67,508.91 | |
| Netherlands | €722,028.26 | |
| Poland | | €829,961.27 |
| Portugal | | €3,889,505.11 |
| Sweden | €422,955.75 | |
| Slovenia | | €540,024.25 |
| Slovakia | | €236,984.55 |

Programme 2021

**Total eligible co-financing requested by MSs:
€27,933,587.56**

- Situation as of 5/11/2021
- 24 MS applied
- Evaluation of the measures (technical and financial): completed



**Regione
Lombardia**

Servizio Fitosanitario

Applications 2021 by priority group

Total eligible co-financing requested by the MSs for **Pest Priority 1**

| Member States | 50% Co-funded (incl. 7% flat rate) | 75% co-funded (incl. 7% flat rate) |
|----------------|---------------------------------------|---------------------------------------|
| Austria | €53,770.31 | |
| Belgium | €70,738.61 | |
| Cyprus | | €21,177.81 |
| Czech Republic | | € 97,066.13 |
| Germany | € 1,665,330.82 | |
| Denmark | €94,472.53 | |
| Estonia | | €62,424.55 |
| Spain | € 6,462,343.00 | |
| Finland | € 76,860.24 | |
| France | € 1,985,725.80 | |
| Greece | | €545,850.42 |
| Croatia | | € 81,686.49 |
| Ireland | €17,678.01 | |
| Italy | € 4,200,087.15 | |
| Lithuania | | €20,706.75 |
| Luxembourg | €12,926.83 | |
| Latvia | | €49,503.22 |
| Malta | € 44,921.39 | |
| Netherlands | €156,486.43 | |
| Poland | | €238,425.25 |
| Portugal | | € 3,402,786.88 |
| Sweden | €96,510.79 | |
| Slovenia | | € 274,832.03 |
| Slovakia | | €109,680.32 |

Total eligible co-financing requested by the MSs for **Pest Priority 2**

| Member States | 50% Co-funded (incl. 7% flat rate) | 75% co-funded (incl. 7% flat rate) |
|----------------|---------------------------------------|---------------------------------------|
| Austria | €67,587.85 | |
| Belgium | €270,017.99 | |
| Cyprus | | €13,243.66 |
| Czech Republic | | €107,872.05 |
| Germany | €121,267.40 | |
| Denmark | €78,382.04 | |
| Estonia | | €50,326.69 |
| Spain | €919,567.88 | |
| Finland | €124,744.99 | |
| France | €910,794.70 | |
| Greece | | €137,509.73 |
| Croatia | | €123,914.07 |
| Ireland | €74,208.15 | |
| Italy | €875,259.72 | |
| Lithuania | | €83,568.98 |
| Luxembourg | €55,150.59 | |
| Latvia | | €45,274.14 |
| Malta | €6,796.45 | |
| Netherlands | €415,769.39 | |
| Poland | | €521,729.60 |
| Portugal | | €278,411.28 |
| Sweden | €275,654.31 | |
| Slovenia | | € 194,771.60 |
| Slovakia | | €81,272.50 |

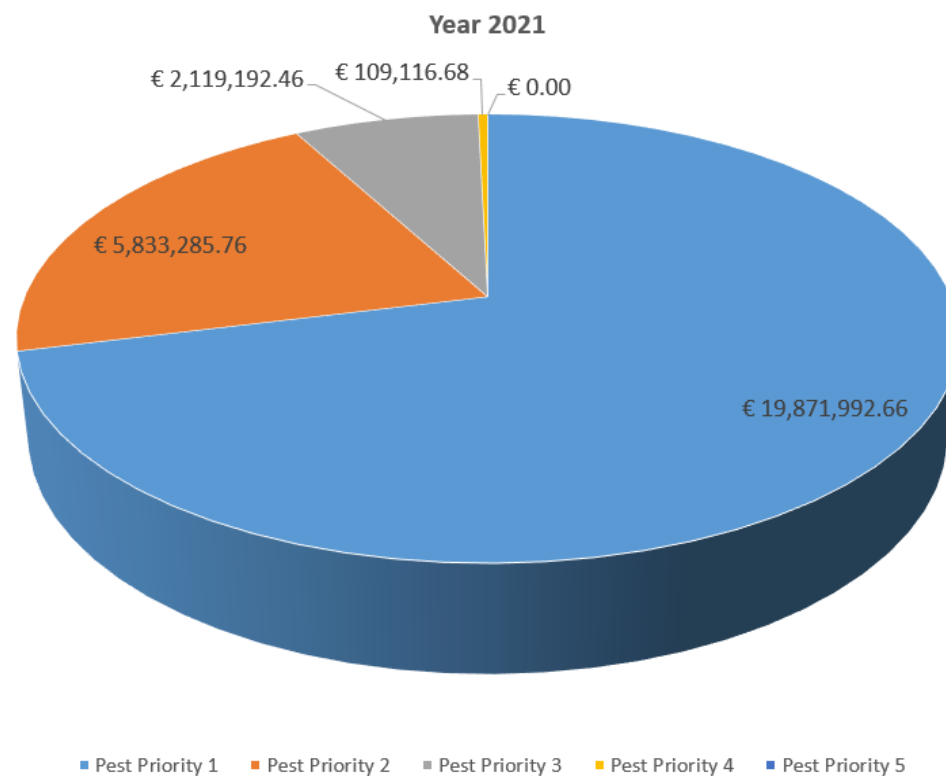


Regione
Lombardia

Servizio Fitosanitario

**Total eligible
co-financing requested by
the MSs per Pest Priority
for 2021**

| | |
|-----------------------------------|----------------|
| Priority 1 (incl.7% flat rate) | €19,871,992.66 |
| Priority 2 (incl.7% flat rate) | €5,833,285.76 |
| Priority 3 (incl.7% flat rate) | €2,119,192.5 |
| Priority 4 (incl.7% flat rate) | €109,116.68 |
| Priority 5 (incl.7% flat rate) | €0.00 |



Provisional Grant Agreement 2021-Priority 1 and Priority 2

Co-Funding Rate:

Priority 1 – 100% of 50/75%

Priority 2 – 0,6% of 50/75%

| Member States | Eligible requested amount Priority 1 | Provisional Grant amount Priority 1 | Eligible requested amount Priority 2 | Provisional Grant amount Priority 2 |
|----------------|--------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| Austria | € 53,770.31 | € 54,000.00 | € 67,587.85 | € 1,000.00 |
| Belgium | € 70,738.61 | € 71,000.00 | € 270,017.99 | € 6,000.00 |
| Cyprus | € 21,177.81 | € 21,000.00 | € 13,243.66 | € - |
| Czech Republic | € 97,066.13 | € 97,000.00 | € 107,872.05 | € 2,000.00 |
| Germany | € 1,665,330.82 | € 1,665,000.00 | € 121,267.40 | € 3,000.00 |
| Denmark | € 94,472.53 | € 94,000.00 | € 78,382.04 | € 2,000.00 |
| Estonia | € 62,424.55 | € 62,000.00 | € 50,326.69 | € 1,000.00 |
| Spain | € 6,462,343.00 | € 6,462,000.00 | € 919,567.88 | € 20,000.00 |
| Finland | € 76,860.24 | € 77,000.00 | € 124,744.99 | € 3,000.00 |
| France | € 1,985,725.80 | € 1,986,000.00 | € 910,794.70 | € 20,000.00 |
| Greece | € 545,850.42 | € 546,000.00 | € 137,509.73 | € 3,000.00 |
| Croatia | € 81,686.49 | € 82,000.00 | € 123,914.07 | € 3,000.00 |
| Ireland | € 647,678.01 | € 648,000.00 | € 74,208.15 | € 3,000.00 |
| Italy | € 4,200,087.15 | € 4,200,000.00 | € 875,259.72 | € 19,000.00 |
| Latvia | € 26,788.73 | € 27,000.00 | € 83,588.98 | € 2,000.00 |
| Luxembourg | € 12,926.83 | € 13,000.00 | € 55,150.59 | € 1,000.00 |
| Malta | € 44,921.39 | € 45,000.00 | € 6,796.45 | € - |
| Netherlands | € 156,486.43 | € 156,000.00 | € 415,769.39 | € 9,000.00 |
| Poland | € 238,425.25 | € 238,000.00 | € 521,729.60 | € 11,000.00 |
| Portugal | € 3,402,786.88 | € 3,403,000.00 | € 278,411.28 | € 6,000.00 |
| Sweden | € 96,510.79 | € 97,000.00 | € 275,654.31 | € 6,000.00 |
| Slovenia | € 274,832.03 | € 275,000.00 | € 194,771.60 | € 4,000.00 |
| Slovakia | € 109,680.32 | € 110,000.00 | € 81,272.50 | € 2,000.00 |
| Total: | €19,871,992.66 | € 19,873,000.00 | € 5,833,285.76 | € 127,000.00 |

| | APPLICATION SOLO PRIORITY 1 da M10 A Aree Indenni | APPLICATION SOLO PRIORITY 1 da M10 B Aree Demarcate | APPLICATION SOLO PRIORITY 2 da M10 A Aree Indenni | APPLICATION SOLO PRIORITY 2 da M10 B Aree Demarcate |
|------------------------------|---|---|---|---|
| Campania | € 313.131,53 | € 0,00 € 39.551,86 | € 191.599,67 | € 0,00 € 0,00 |
| Emilia-Romagna | € 314.233,90 | € 0,00 € 0,00 | € 256.435,92 | € 79.089,15 € 0,00 |
| Friuli Venezia Giulia | € 73.776,85 | | € 11.784,48 | |
| Lazio | € 55.660,93 | € 8.594,87 € 0,00 | € 14.785,31 | € 0,00 € 0,00 |
| Liguria | € 93.842,91 | | € 16.239,26 | |
| Lombardia | € 174.627,67 | € 412.547,27 € 1.063.941,42 | € 53.321,08 | € 0,00 € 286.568,95 |
| Marche | € 217.457,85 | | € 42.508,14 | |
| Molise | € 146.097,80 | | € 120.409,54 | |
| Piemonte | € 88.239,39 | € 585.400,48 € 0,00 | € 22.008,80 | € 0,00 € 0,00 |
| Puglia | € 451.759,83 | € 371.727,00 € 1.605.196,00 | € 61.971,62 | € 0,00 € 0,00 |
| Sardegna | € 128.422,03 | | € 30.828,58 | |
| Sicilia | € 167.212,52 | | € 56.097,05 | |
| Toscana | € 164.994,77 | € 189.167,93 € 0,00 | € 82.151,19 | € 0,00 € 0,00 |
| Umbria | € 36.549,97 | | € 15.895,44 | |
| Valle d'Aosta | € 12.622,94 | | € 11.376,10 | |
| Veneto | € 70.126,23 | | € 21.636,23 | |
| Provincia Autonoma Trento | € 50.753,18 | | € 10.999,24 | |
| ITALIA | € 2.914.575,40 | € 4.276.126,83 | € 1.157.400,96 | € 365.658,10 |
| TOTALE | € 7.190.702,22 | | € 1.523.059,06 | |
| | PRIORITY 1 da sistema Aree indenni | PRIORITY 1 da sistema Aree demarcate | PRIORITY 2 da sistema Aree indenni | PRIORITY 2 da sistema Aree demarcate |
| ITALIA | € 3.428.157,56 | € 4.460.689,44 | € 1.246.143,69 | € 389.855,79 |
| TOTALE approvato 100% | € 7.850.467,29 | | € 35.514,02 | |

*Italia 2021
approvato*

Eradicazione

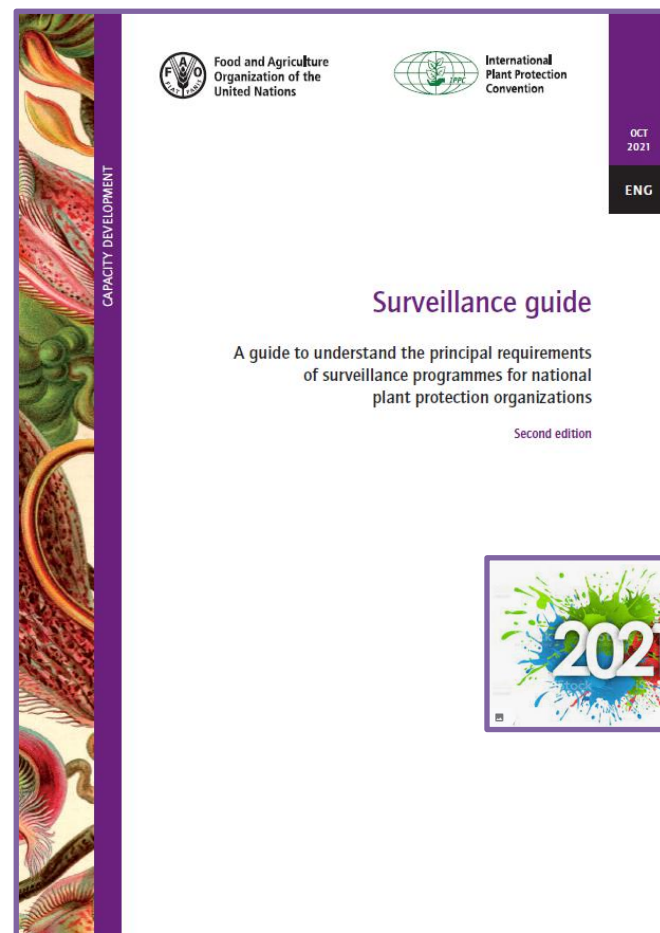
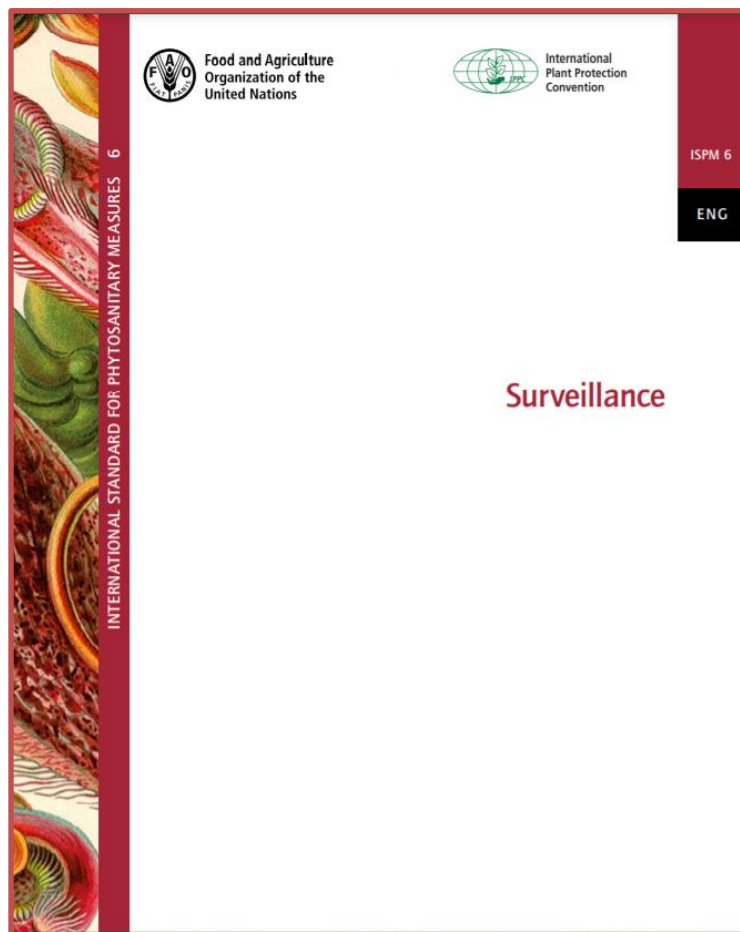
Contenimento



**Regione
Lombardia**

Servizio Fitosanitario

ISPM 6 Surveillance e nuove linee guida IPPC



Regione
Lombardia

Servizio Fitosanitario

Definizioni ISPM 5

surveillance

An **official** process which collects and records data on **pest** presence or absence by **survey**, **monitoring** or other procedures [CEPM, 1996; revised CPM, 2015]

survey (of pests)

An **official** procedure conducted over a defined period to determine the presence or absence of **pests**, or the boundaries or characteristics of a **pest** population, in an **area**, **place of production** or **production site** [FAO, 1990; revised CEPM, 1996; CPM, 2015; CPM, 2019]

monitoring

An **official** ongoing process to verify phytosanitary situations [CEPM, 1996]

monitoring survey

Ongoing **survey** to verify the characteristics of a **pest** population [ISPM 4, 1995]



Regione
Lombardia

Servizio Fitosanitario

Proposta di nuove definizioni ISPM 5 2022

Proposed addition¶

**general
surveillance**¶

An **official** process whereby data on **pests** in an **area** are collected from various sources other than **surveys**, analysed and verified.¶

Proposed addition¶

**specific
surveillance**¶

An **official** process whereby information on **pests** in an **area** is obtained through **surveys**.¶

Proposed revision¶

Surveillance¶

General surveillance, specific surveillance or a combination of both.
An **official** process which collects and records data on **pest** presence or absence by **survey, monitoring** or other procedures.¶



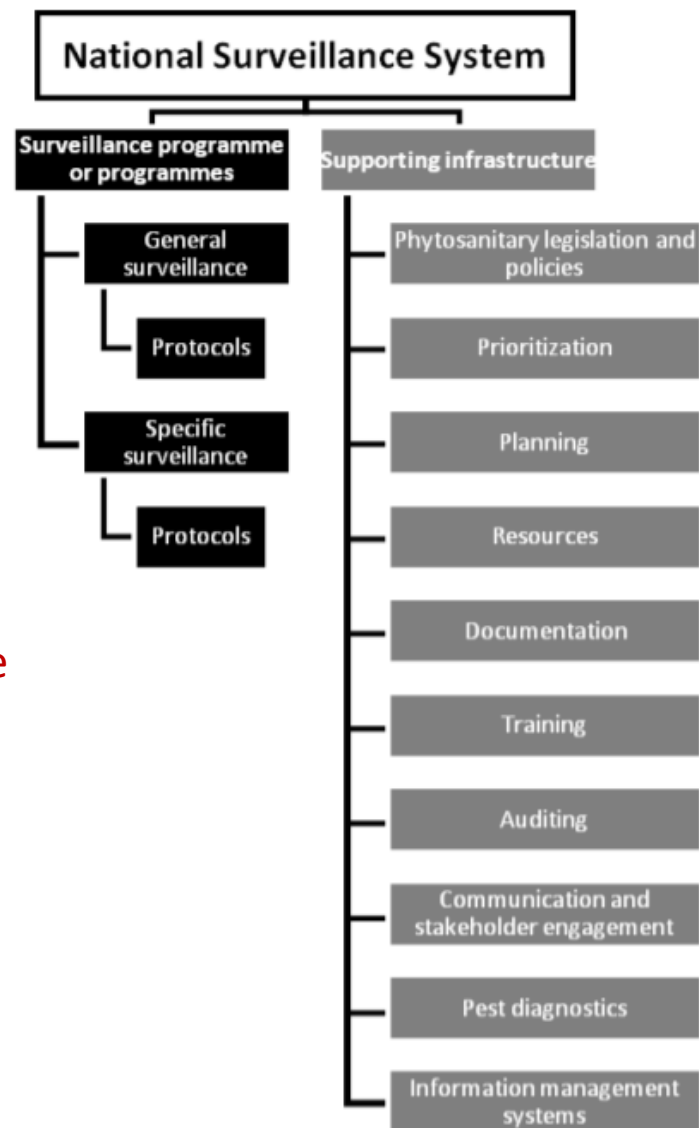
Regione
Lombardia

Servizio Fitosanitario

ISPM 6 Surveillance

Surveillance underpins several activities, including:

- - the **early detection** of pests new to an area
- - the compilation of **host pest lists, commodity pest lists and pest distribution records** (e.g. to support pest risk analysis and phytosanitary certification)
- - the **establishment and maintenance of pest free** areas, pest free places of production, pest free production sites or areas of low pest prevalence
- - the determination of **pest status in an area**
- - **pest reporting** to other countries
- - measuring changes in the characteristics of a pest population or **pest incidence** (e.g. for areas of low pest prevalence or for research)
- - **delimiting** a pest population in an area
- - **eradication** and **pest management**



Regione
Lombardia

Servizio Fitosanitario

General surveillance

Examples of **general surveillance approaches**

- receipt of reports from the general public
- **scanning** of sources of pest information
- general encouragement of **public reporting through official channels**
- encouragement of public reporting **on specific pests**
- encouragement of reporting by groups involved with specific crops (e.g. producers, community groups)
- involvement of specific groups in plant health activities organized by the NPPO to obtain surveillance data (e.g. scientific societies, plant health clinics, agricultural extension services)
- cooperation with other governmental services (e.g. forestry or environmental services)
- cooperation with institutions that carry out **research**
- general surveillance carried out **by NPPO staff**



Regione
Lombardia

Servizio Fitosanitario

Elements of general surveillance

- mechanisms to facilitate reporting:

- ❑ **legislative obligations** (for the general public, growers or specific agencies)
- ❑ cooperative agreements (between NPPOs and, for example, stakeholders or scientific societies)
- ❑ the use of contact personnel to enhance communication channels to and from NPPOs
- ❑ public education and awareness raising initiatives

- tools for collecting reports from the public:

- ❑ publicly accessible free call phone numbers
- ❑ systems for free delivery of samples
- ❑ smartphone and mobile device applications (apps)
- ❑ social media channels and email

- systems or processes to enhance the quality of reporting:

- ❑ a **filtering process** at the point of initial contact
- ❑ the ability to send and receive images for initial identification
- ❑ publicity material to allow submitters to self-filter (e.g. **leaflets and websites** with pest information and photos)
- ❑ training for submitters

- means to consolidate, analyse and communicate the information gathered:

- ❑ integrated national, regional or global databases and **alert systems for emerging pests**
- ❑ spatial modelling tools embedded in web-based systems (e.g. geographical information systems)
- ❑ mathematical and simulation models of data collected



Regione
Lombardia

Servizio Fitosanitario

Specific surveillance

3 types of surveys may be utilized by NPPOs depending on the objectives of the specific surveillance programme:

- **detection survey**: conducted in an area to determine if pests are present (or absent)
- **delimiting survey**: conducted to establish the boundaries of an area considered to be infested by or free from a pest
- **monitoring survey**: ongoing survey to verify the characteristics of a pest population.

These surveys may be developed for pests in relation to one or more areas, sites, hosts, pathways or commodities and should include the collection of pest presence and absence records.

The result of every observation or sample taken should be recorded, including when the pest was not found.

Data on pest absence collected during surveys can be used by NPPOs to support a country's pest status and pest free areas, as well as its trade and market access.

The most important factor for the validity of pest absence data is the design of the specific surveillance programme.



Regione
Lombardia

Servizio Fitosanitario

Supporting Infrastructure



Phytosanitary legislation and policies

Prioritization

Planning

Resources

Documentation

Training

Auditing

**Communication and stakeholder
engagement**

Pest diagnostics

Information management systems



**Regione
Lombardia**

Servizio Fitosanitario

Supporting Infrastructure

Phytosanitary legislation and policies

A national surveillance system should be supported by phytosanitary legislation and policies that ensure that **authority**, **responsibilities** and **financial resources** are assigned to the appropriate administrative levels.

Contracting parties should include the following provisions in their phytosanitary legislation or in official procedures:

- ❑ - the **legal power**, process and protection for NPPO officers or other authorized personnel to undertake surveillance activities, including entering premises or land to inspect plants, plant products or other articles that may be capable of harbouring pests, or to collect samples for testing
- ❑ - the establishment and maintenance of facilities for **diagnostics** or appropriate access to up-to-date diagnostic services to ensure that pests are properly identified
- ❑ - **mandatory domestic reporting** (e.g. by research institutions, diagnostic laboratories, nongovernmental organizations, industry, growers, local government or scientific groups) to the NPPO on detection or suspected presence of:
 - targeted pests
 - pests new to an area, host or pathway.



Regione
Lombardia

Servizio Fitosanitario

Surveillance



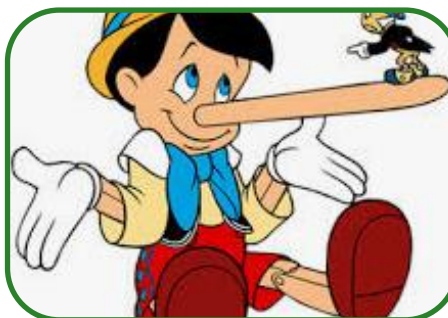
Pest records



Analysis



Reporting



Transparency



Regione
Lombardia

Servizio Fitosanitario

Surveillance guide

Decision support process for planning pest surveillance

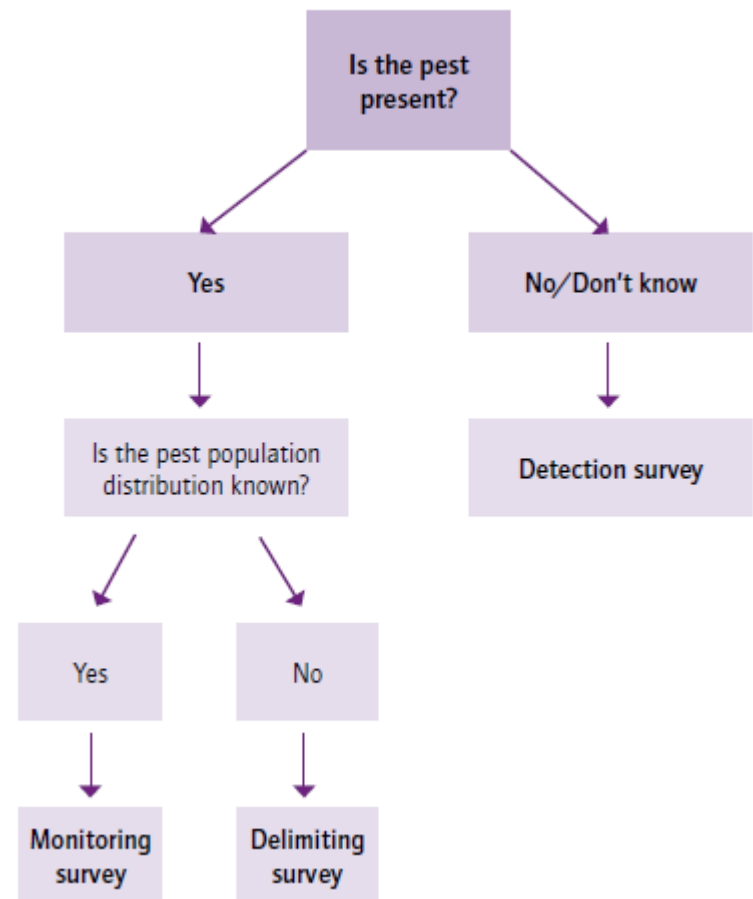
Section 1: Introduction Specific surveillance

Specific surveillance may be focused on a pest or on a host or commodity. Types of specific surveillance include:

- Detection survey
- Delimiting survey
- Monitoring survey

Specific surveillance outcomes should:

- support NPPO declarations of pest freedom
- aid in the early detection of exotic pests
- assist in reporting to organizations, such as other NPPOs, RPPOs and FAO



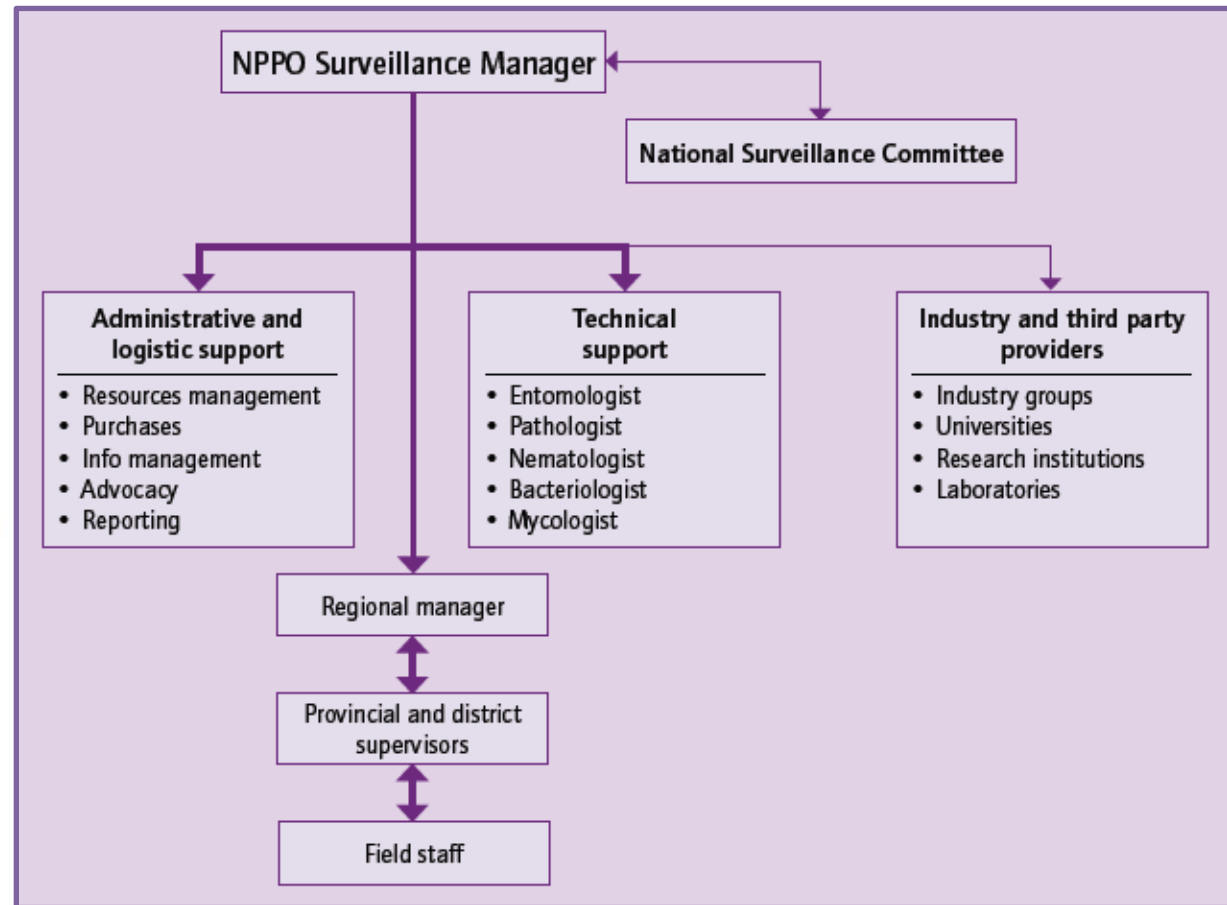
Regione
Lombardia

Servizio Fitosanitario

Conceptual organization of a management structure for a national surveillance programme

Section 2: Organizational Arrangements

3. National Legislation
4. Funding and Sustainability
 - 4.1 Potential sources of funding
5. Management
 - 5.1 Strategy
 - 5.2 Authority
 - 5.3 Responsibilities
 - 5.4 Planning
 - 5.5 Resources and budget allocation
 - 5.6 Engagement mechanisms
 - 5.7 Performance review
 - 5.8 Monitoring and evaluation



Regione
Lombardia

Servizio Fitosanitario

Prioritization factors of surveillance programmes

Section 3: Planning and Prioritization

9. Planning a Surveillance Programme

9.1 Cost–benefit analysis

9.2 Key issues

9.3 Surveillance implementation

10. Prioritization

10.1 Early detection

10.2 Stakeholder interests

10.3 Responses to outbreaks or incursions

High priority

- Quarantine pest
- Easy detection method
- Stakeholder requests
- Pest outbreak
- A high-value agricultural commodity, general surveillance for export

Low priority

- Non-quarantine pest
- Difficult detection method
- No stakeholder requests
- No pest outbreak
- A low-value agricultural commodity, general surveillance for export



Regione
Lombardia

Servizio Fitosanitario

Planning and prioritization

Section 3: Planning and Prioritization

- 11. Designing a Specific Plant Pest Surveillance Programme
 - 11.1 Survey design
 - 11.2 Pest-specific surveillance
 - 11.3 Commodity-specific surveillance
 - 11.4 Examples of survey design
- 12. Response, Delimiting and Trace-back Surveillance
 - 12.1 Early warning detection surveys
 - 12.2 Investigation plan
 - 12.3 Delimiting surveillance



Regione
Lombardia

Servizio Fitosanitario

Use of three types of surveys for different pest situations

Section 4: Operations

13. Resource Requirements

13.1 Human resources

13.2 Financial resources

13.3 Physical resources

14. Methodologies

14.1 General surveillance

14.2 Specific surveys

14.3 Methods

14.4 Inspection

14.5 Sample coding

14.6 Sample collection

14.7 Submission to diagnostic laboratory

| Specific surveillance | Pest situation | | | | |
|-----------------------|---|--|---|--|---|
| | Pest present without control | Pest present under suppression | Pest present under eradication | Pest absent under exclusion | Pest transient, eradication of an incursion |
| Monitoring | Uncontrolled pest subject to monitoring surveys | Pest under suppression subject to monitoring surveys | Pest under eradication subject to monitoring and verification surveys | | |
| Detection | | | | No pest; detection surveys including intensive trapping for exclusion in a PFA | |
| Delimiting | | | | | Incursion detected through ongoing detection surveys, therefore additional implementation of delimiting surveys |



Regione
Lombardia

Servizio Fitosanitario

Altre definizioni ISPM 5

suppression

The application of **phytosanitary measures** in an infested **area** to reduce **pest** populations [FAO, 1995; revised CEPM, 1999]

containment

Application of **phytosanitary measures** in and around an infested **area** to prevent **spread** of a **pest** [FAO, 1995]

eradication

Application of **phytosanitary measures** to eliminate a **pest** from an **area** [FAO, 1990; revised FAO, 1995; formerly “eradicate”]

control (of a pest)

Suppression, containment or eradication of a **pest** population [FAO, 1995]

incursion

An isolated population of a **pest** recently detected in an **area**, not known to be **established**, but expected to survive for the immediate future [ICPM, 2003]

outbreak

A recently detected **pest** population, including an **incursion**, or a sudden significant increase of an **established pest** population in an **area** [FAO, 1995; revised ICPM, 2003]

interception (of a pest)

The detection of a **pest** during **inspection** or **testing** of an imported **consignment** [FAO, 1990; revised CEPM, 1996]



Regione
Lombardia

Servizio Fitosanitario

Trapping: semiochemicals traps

Allomones: a signal that benefits the sender, but not the receiving species;

Kairomones: a signal that benefits a receiving species, but not the sender;

Pheromones: a chemical released by a species for species-specific communication;

Synomones: a chemical that benefits both the sender and receiver species.

| Advantages | Disadvantages |
|--|---|
| More selectively attract certain pests depending on the lure | Lure may be too specific or not specific enough to trap target pest |
| Easy to deploy in the field | Lure may not be available for target pest |
| Relatively inexpensive | Trap may need a particular field set-up to be effective |
| Can yield good population data with a minimum effort | Lure may not attract the primary pestiferous life stage of the pest or may not indicate pest distribution |



Regione
Lombardia

Servizio Fitosanitario

Trapping: Attractant-based traps

Attractant-based traps often use food or insect- attracting visual clues to selectively trap a particular type of pest

Examples of visual-based attractant traps include:

Light traps

Yellow or blue sticky cards

| Advantages | Disadvantages |
|--|---|
| Low cost and easy to deploy | Not as specific as semiochemical-based traps |
| Some selectivity may occur depending upon the available research for the pest | Light traps and sticky cards attract several non-target pests; sorting less target-specific samples may be challenging |
| May be constructed and designed from local materials | Food-baited attractant traps will require more maintenance and generally degrade more rapidly than semiochemical-based trapping methods |
| May be used to enhance and improve semiochemical-based trapping methods | May be less specific in terms of trap placement |
| Species- or genera-specific attraction may occur for some species (e.g. fruit flies within the genus <i>Anastrepha</i> are more attracted to protein-based food lures) | |



Regione
Lombardia

Servizio Fitosanitario

Trapping: physical traps

Physical traps generally take the form of a mechanical or physical barrier that prevents pest movement.

For example, a band of folded burlap can be placed around tree trunks that may be potentially infested with the Asian gypsy moth, *Lymantria dispar asiatica*.

Caterpillars will use the burlap as a resting site and can then be destroyed.

| Advantages | Disadvantages |
|---|--|
| Not generally harmful to the environment | Often difficult to implement on a larger scale |
| Effective on small-scale areas of concern | Not as effective as chemical control methods |
| Relatively easy to deploy | Potentially time intensive for data collection |



Regione
Lombardia

Servizio Fitosanitario

| Dry | Liquid | Sticky trap |
|---|---|--|
| Shipped in vials or glassine envelope | Mites, insect larvae, soft-bodied and hard-bodied adult insects can be transferred to vials of 75–90 percent ethanol or an equivalent, such as isopropyl alcohol | Specimens (Lepidoptera, Diptera, etc.) are fragile and require special handling and shipping techniques |
| May break during shipment and only recommended for larger insects | Funnel trap samples may have rainwater in them; drain off all the liquid and replace with alcohol to prevent decay of insects | Specimens in traps should not be manipulated or removed for preliminary screening unless expertise is available |
| If a soft envelope is used, wrap it in shipping bubble sheets; if a rigid cardboard box is used, pack it in such a way that the samples are restricted from moving in the container | Vials used to ship samples should contain samples from a single trap and a printed or hand-written label with the associated collection number using a micron pen or a pencil | Traps can be folded, with Stick Em glue on the inside, but only without the sticky surfaces touching, and secured loosely with a rubber band for shipping |
| Always include sample collection data | | Inserting a few polystyrene (styrofoam) beads on trap surfaces without insects will cushion and prevent the two sticky surfaces from sticking during shipment to taxonomists |
| | | Do not fold traps flat or cover traps with transparent wrap (or other material), because this will damage the specimen making identification difficult or impossible |

Sample packaging



**Regione
Lombardia**

Servizio Fitosanitario

| Equipment | Reagents | Supplies | Tools for data collection |
|---|------------------------------------|---|--|
| Ethanol flame lamp | Ethanol (70–90 percent) | Brightly coloured ribbons | GPS unit |
| Spade | Calcium chloride chips (desiccant) | Spray paint | Maps |
| Soil sieves for nematodes | Water | Ice packs | Mobile phone, radio or satellite phone |
| Sweep net | Ethyl acetate | Camel-hair brushes | Diagnostic keys |
| Pooter or aspirator | Ammonium carbonate | Corrugated cardboard | Random number generator |
| Collecting vacuum | | Plastic tubes with snap on caps (assorted sizes) | Digital camera |
| Mounting boards | | Tape | Watch |
| Scissors | | Clear plastic bags (assorted sizes with zip lock or ties) | Notebook |
| Plant press | | Newspaper | Permanent marker pens |
| Pruning saw | | Pins for insects | Compass |
| Water spray | | Lures | Laptop or personal handheld device |
| Small combination pick, mattock or trowel | | Traps | Aerial drones |
| Field microscope | | Glassine envelopes for delicate specimens (moths, etc.) | |
| Beating sheets | | Specimen pots | |
| Hammer | | Glass vials with screw caps (assorted sizes) | |
| Chisel | | Parafilm | |

Surveillance equipment



Regione
Lombardia

Servizio Fitosanitario

Operations

Section 4: Operations

- 15. Data Collection and Submission
- 16. Field Communication and Feedback
 - 16.1 Pre-survey briefing
 - 16.2 Survey (in-field) communications
 - 16.3 Methods of communication
- 17. Interaction with Stakeholders
- 18. Supervision of Activities



Identifying damage caused by *Stenoma catenifer*. © Agencia de Regulación y Control Fito y Zoosanitario



Regione
Lombardia

Servizio Fitosanitario

Cases studies

1. (General Surveillance) Surveillance for invasive forest pests: Innovative national trapping and rearing surveys in Canada
 - Two early detection general pest surveys, 1) the Invasive Alien Species (IAS) Forest Trapping Survey and 2) the IAS Insect Rearing Survey
2. (General Surveillance) Observatree – an early warning system for tree health using citizen science in United Kingdom
 - Early warning surveys for tree health: network of specialist, trained volunteers (citizen scientists) undertake surveys to assist with spotting new tree pests and diseases
3. (Specific Surveillance) Monitoring of the avocado seed moth (*Stenoma catenifer*) using pheromones in Ecuador
 - Monitoring of the avocado seed moth including activities such as training, mobile application and taking samples



Setting an IAS trap in the field. © Her Majesty the Queen in Right of Canada



Regione
Lombardia

Servizio Fitosanitario

Cases studies

4. (Specific Surveillance) Phytosanitary measures and procedures taken to manage the risk of fall armyworm in Egypt
 - Specific surveillance on fall armyworm in cooperation with the FAO regional office
5. (Specific Surveillance) The International Plant Sentinel Network Spittlebug Hunt in United Kingdom
 - Activities to improve understanding of host plants of spittlebugs that are known to vector or are potential vectors of *Xylella fastidiosa*
6. (General surveillance) Management of an expert network in Argentina
 - Developing a general plant pest surveillance network under in cooperation between the NPPO and non-NPPO experts in the national phytosanitary system



Spittlebug on fireweed (*Chameaneron angustifolium*). ©David Knott RBGE UK



Regione
Lombardia

Servizio Fitosanitario