

PROCEDURES AND TRAININGS ON PHYTOSANITARY RISK
MANAGEMENT AND MONITORING PROCEDURES

Sarajevo 2015-07-13/17

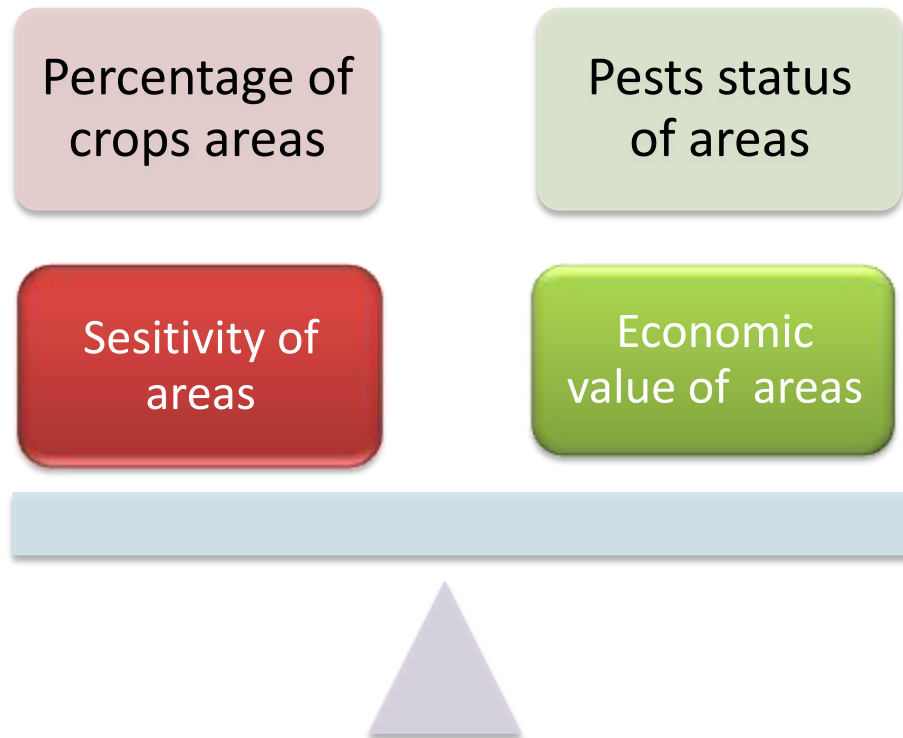


*Plant Health Service
surveys on Orchards*

Francesca Siena - Lombardy Region Plant Health Service –

Planning surveys and monitoring


Which criteria using for planning surveys on orchards?



Planning surveys and monitoring


1) PERCENTAGE of crops

Potatoes crops in Lombardy (about 5% of cultivated area)
No particular problems, all the region pest free area

UPDATE	PROV	ATTIVITA'	PERIODO DEI CONTROLLI		HA COLTIVATI PER PROVINCIA	HA-SITI-N° CONTROLLI
			DA	A		
	CR PV	PATATA IN CAMPO (Globodera, Ralstonia, Clavibacter, Tignola e PSTVd, Epitrix, Synchritium)	maggio/giugno	metà luglio	790 Ha 5% <small>(Dichiaraz. SIARE 2014)</small>	40 HA in almeno 10 appezzamenti diversi prendere 3 punti GPS diversi per ogni HA controllato a distanza di almeno 60m
	BS	GLOBODERA, RALSTONIA CLAVIBACTER E TIGNOLA PATATA CONTROLLI DI CAMPO	maggio/giugno	metà luglio	193 5% 10 HA	
	CO	GLOBODERA, RALSTONIA CLAVIBACTER E TIGNOLA PATATA CONTROLLI DI CAMPO	maggio/giugno	metà luglio	64 5% 3 HA	
	CR	GLOBODERA, RALSTONIA CLAVIBACTER E TIGNOLA PATATA CONTROLLI DI CAMPO	maggio/giugno	metà luglio	89 5% 5 HA	
	MN	GLOBODERA, RALSTONIA CLAVIBACTER E TIGNOLA PATATA CONTROLLI DI CAMPO	maggio/giugno	metà luglio	189 5% 10 HA	
	PV	GLOBODERA, RALSTONIA CLAVIBACTER E TIGNOLA PATATA CONTROLLI DI CAMPO	maggio/giugno	metà luglio	195 5% 10 HA	

Planning surveys and monitoring

2) PEST STATUS of AREAS

	PROV	ATTIVITA'	PERIODO DEI CONTROLLI		HA COLTIVATI PER PROVINCIA	HA-SITI-N° CONTROLLI
			DA	A		
VITE 	BG BS LC MI LO MN PV SO	XYLELLA e FD VIGNETI + CONTROLLO VETTORE	luglio	settembre	da dichiarazioni SIARL 2014 (esclusi vivai): 21656 Ha	150
	BS	FD VIGNETI + CONTROLLO VETTORE	luglio	settembre	5671	30
	MI-LO	FD VIGNETI + CONTROLLO VETTORE	luglio	settembre	172	10
	MN	FD VIGNETI + CONTROLLO VETTORE	luglio	settembre	1713	20
	PV	FD VIGNETI + CONTROLLO VETTORE	luglio	INFESTED AREA	12627	70
	SO	FD VIGNETI + CONTROLLO VETTORE	luglio	PEST FREE AREA	776	8

Planning surveys and monitoring

3) SENSITIVITY of AREAS

Bursaphelenchus xylophilus in Lombardy region

UPDATE	PROV	ATTIVITA'	PERIODO DEI CONTROLLI		HA COLTIVATI PER PROVINCIA	HA-SITI-N° CONTROLLI
			DA	A		
	BS CO MI VA	BURSAPHELENCHUS XYLOPHILUS	maggio	metà novembre		10 siti di Verde pubblico
	BS	NEMATODE DEL PINO BURSAPHELENCHUS XYLOPHILUS	maggio	metà novembre		1 siti
	CO	NEMATODE DEL PINO BURSAPHELENCHUS XYLOPHILUS	maggio	metà novembre		1 siti
	LC	NEMATODE DEL PINO BURSAPHELENCHUS XYLOPHILUS	maggio	metà novembre		1 siti
	MI	NEMATODE DEL PINO BURSAPHELENCHUS XYLOPHILUS	maggio	met	EXPO	4 siti
	VA	NEMATODE DEL PINO MALPENSA INTERNATIONAL AIRPORT				3 siti
			TRAPPOLE			

Planning surveys and monitoring

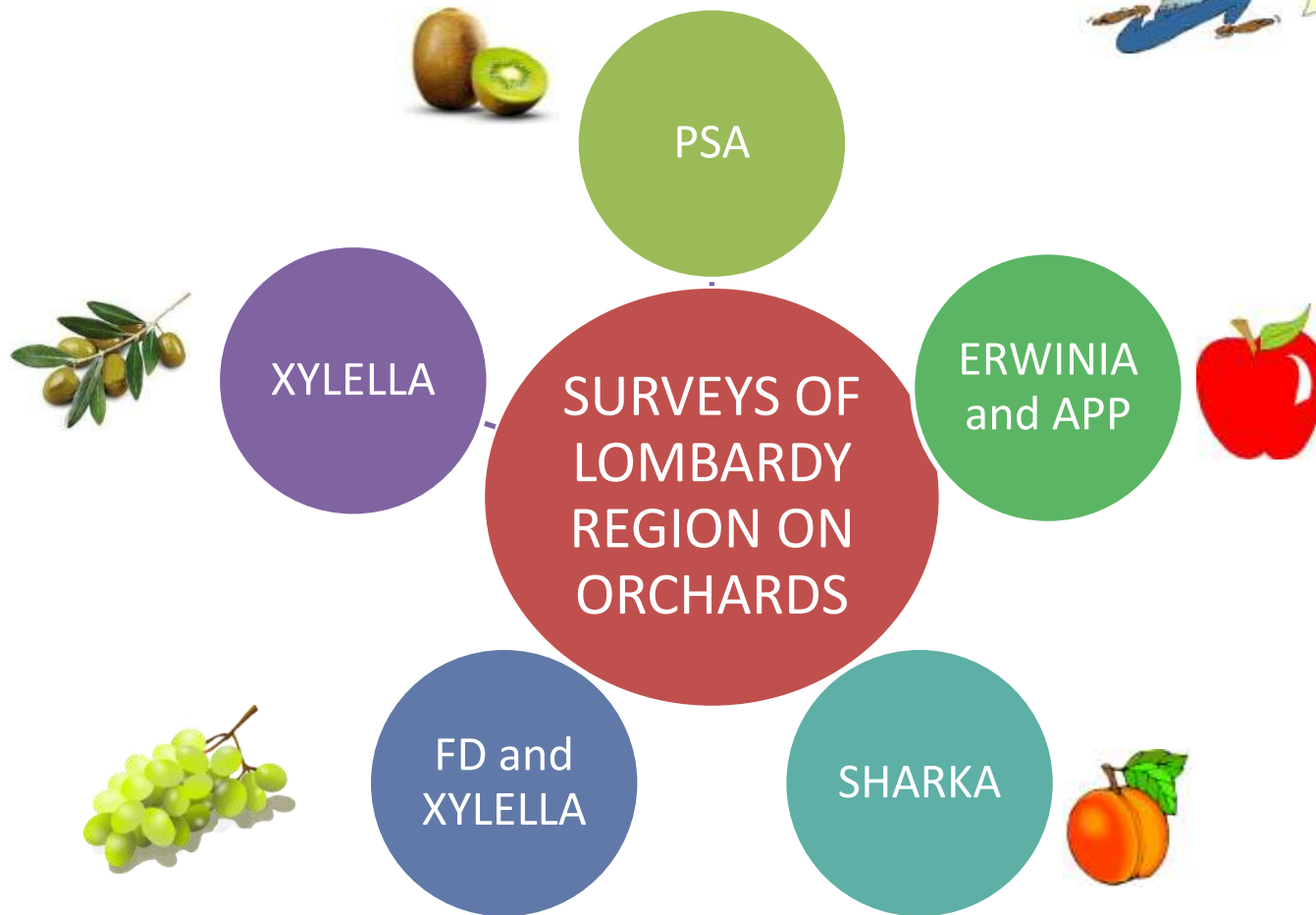
4) ECONOMICAL VALUE of AREA

Rinforced surveillance for Anoplophora in the strategic area for nurseries in MN province (very faraway from Anoplophora outbreaks)



Plant Health Service surveys on Orchards

➤ Plant Protection Surveys addresses monitoring on **quarantine/regulated pests** (in orchards too)



PPS surveys on Orchards (Pome fruits)

Host



Pome Fruits

Target pests

Erwinia amylovora

**Apple Proliferation
Phytoplasma**

Surveys (other than nurserie)

1) Orchards

➤ New orchards (1-2 year)

➤ Orchards in Pest Free Area (ZTMN1)

➤ Orchards in Strategic area (nurseries of propagating material of apple plants- ZFT)

2) Regional network

3) Delimited area of outbreaks

1) Orchards

➤ During autumnal surveys of *Erwinia* in apple fields

Erwinia amylovora (fire blight)

Pome Fruits



Quarantine pest



- Decision 2000/29/CE Annex .II
- **D.M.10** settembre 1999, n. **356**

In case of findings



-creation of demarcated area (1km buffer) that has to be inspected twice a year for 3 growing season

-distruction of infected plant, all hosts whitin 10m from infected plants, other symptomatic hosts inside the outbreak

-measure on nurseries inside demarcated area

Erwinia amylovora (fire blight): Biology and pathways

Pome Fruit



• Bacteria Gram -

• Pathways: principally through ooze during springtime, carried by

- ✓ Insects,
- ✓ Birds,
- ✓ Rain
- ✓ Wind,
- ✓ Pruning
- ✓ Infected plants



• Entryway:

- ✓ Natural openings on leaves and flowers (stomi)
- ✓ wounds caused by storms, by pruning, by stings of insects



Erwinia amylovora (fire blight): Biology and pathways

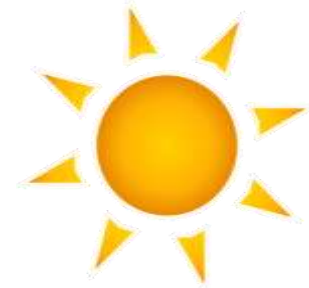
Pome Fruits



-Growing range of temperature (optimum)



> 15-18°C and < 32-35°C



-Time for monitoring (twice a year)

1° turn : from the half of May to the half July.

&

2° turn from the half of September to the end of October

- Host plants : Rosacee **Maloidaea** (Pomoidee) - pome fruit, wild and ornamental plants -

Erwinia amylovora (fire blight): Host plants

Amelanchier spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Chaenomeles (*Cydonia*) *japonica*

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Cotoneaster spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Cotoneaster spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Cotoneaster spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Crataegus spp.

Pome Fruits



Erwinia amylovora (fire blight): Host plants

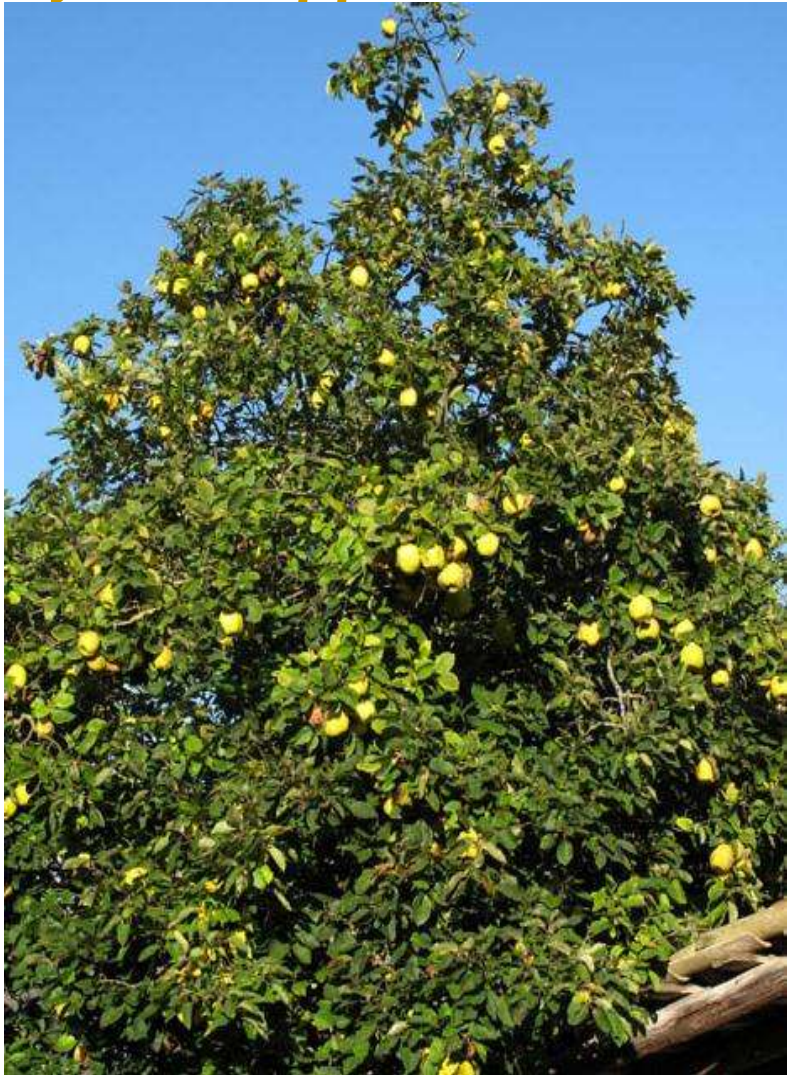
Crataegus spp.

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Cydonia spp.



Erwinia amylovora (fire blight): Host plants

Eriobotrya spp.

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Malus spp.

Pome Fruits



Erwinia amylovora (fire blight): Host plants

***Malus* spp.**

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Mespilus spp.

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Photinia davidiana

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Pyracantha spp

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Pyrus spp.

Pome Fruits



Erwinia amylovora (fire blight): Host plants

Pyrus spp



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Sorbus spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Sorbus spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Sorbus spp.



Pome Fruits



Erwinia amylovora (fire blight): Host plants

Sorbus spp.



Pome Fruits



Erwinia amylovora (fire blight): Symptoms

Pome Fruits



- Wilting on flowers and leaves
- Leaves become black, are similar to leather on touch, don't fall down but remain joined to the branches, don't crumble
- Young shoots bend (*'shepherds crook'*)
- Little fruits dry, become black, remain joined to the branches
- Canckers and cracks can appear on bark
- Under the bark the tissue is reddish
- With favourable weather conditions infected tissues can produce grey/white ooze like little drops

Erwinia on Pyrus

Pome Fruits



Erwinia on Cotoneaster

Pome Fruits



Erwinia on Malus

Pome Fruits



Erwinia on Crataegus

Pome Fruits



Erwinia on *Pyracantha*

Pome Fruits



Other symptoms

Pome Fruits



Other symptoms

Pome Fruits



Erwinia amylovora (fire blight): surveys in orchards

Pome Fruits



➤ Symptoms are easily visible (1 person can check on left and right)



➤ Record all the information of survey (extention, species, data, adress, etc.) on field data sheet

ERSAF Servizio Fitosanitario Regionale
Via Po, 12 - 30123 MANTOVA - TEL. 0376/43111 - FAX 0376/43111
Scheda di rilevazione malattie fitopatologiche
SCHEDA DI RILEVAMENTO FRUTTETO/VIVINETO

Nome e cognome/Regione/Prov.: Mantova/regione/LOMBARDIA
Sede appostamento/Comune: Mantova/regione/LOMBARDIA
Data raccolta: 22/6/2012
Mappa: 155
Mappa: 155
Mappa: 155
Mappa: 155

SPECIE	VARIETÀ	N°	INFL.	W	FRUTTIFERA	VAL. PLANT.	ANNO	PROVENIENZA	USO	NOTE
Prugna	Prugna	1	50	75	500					15/50
		2	50	75	500					
		3	50	75	500					
		4	50	75	500					
		5	50	75	500					
		6	50	75	500					
		7	50	75	500					
		8	50	75	500					
		9	50	75	500					
		10	50	75	500					
		11	50	75	500					
		12	50	75	500					
		13	50	75	500					
		14	50	75	500					
		15	50	75	500					
		16	50	75	500					
		17	50	75	500					
		18	50	75	500					
		19	50	75	500					
		20	50	75	500					
		21	50	75	500					
		22	50	75	500					
		23	50	75	500					
		24	50	75	500					
		25	50	75	500					
		26	50	75	500					
		27	50	75	500					
		28	50	75	500					
		29	50	75	500					
		30	50	75	500					

NOTE: utilizzare una scheda per ogni appezzamento. In caso di progressione della fita (vedi mappa) utilizzare la cartina con il nome di via e via appostamento. In caso di progressione della fita (vedi mappa) utilizzare la cartina con il nome di via e via appostamento.

Data compilazione: 22/6/2012

Firma Fitosanitario Regionale: [Signature]

➤ Make an official report of survey and take coordinates of the orchard monitored

ERSAF Servizio Fitosanitario Regionale
Via Po, 12 - 30123 MANTOVA - TEL. 0376/43111 - FAX 0376/43111
Scheda di rilevazione malattie fitopatologiche
SCHEDA DI RILEVAMENTO FRUTTETO/VIVINETO

Nome e cognome/Regione/Prov.: Mantova/regione/LOMBARDIA
Sede appostamento/Comune: Mantova/regione/LOMBARDIA
Data raccolta: 22/6/2012
Mappa: 155
Mappa: 155
Mappa: 155
Mappa: 155

NOTE: utilizzare una scheda per ogni appezzamento. In caso di progressione della fita (vedi mappa) utilizzare la cartina con il nome di via e via appostamento. In caso di progressione della fita (vedi mappa) utilizzare la cartina con il nome di via e via appostamento.

Data compilazione: 22/6/2012

Firma Fitosanitario Regionale: [Signature]



Erwinia amylovora (fire blight): surveys in orchards

Pome Fruits



➤ Other diseases and abiotic factors can cause symptoms similar to ones caused by Erwinia (ex. Pseudomonas, Nectria, Zeuzera, weeding)

If there are at least 2 or 3 symptoms of Erwinia take a sample

Make an **official report** of sample and give a copy to the owner of the orchards



Remember to **sterilize** scissor/pruner and other instruments used

Mark the plant and **take coordinates** indicating the official number of the sample



Erwinia amylovora (fire blight): surveys in orchards

Pome Fruits



➤ NB: if you take the sample, cut about 10cm under the infected part order to **sample** the transition area **between diseased and healthy part**



Erwinia amylovora (fire blight): surveys in orchards

Pome Fruits



And... If the sample is positive to lab test?

Official
management of
situation

Practical
management of
situation

➤ Official notification to national / european authorities

➤ Official institution of demarcated area (1km radius)

➤ Official measure on beehive



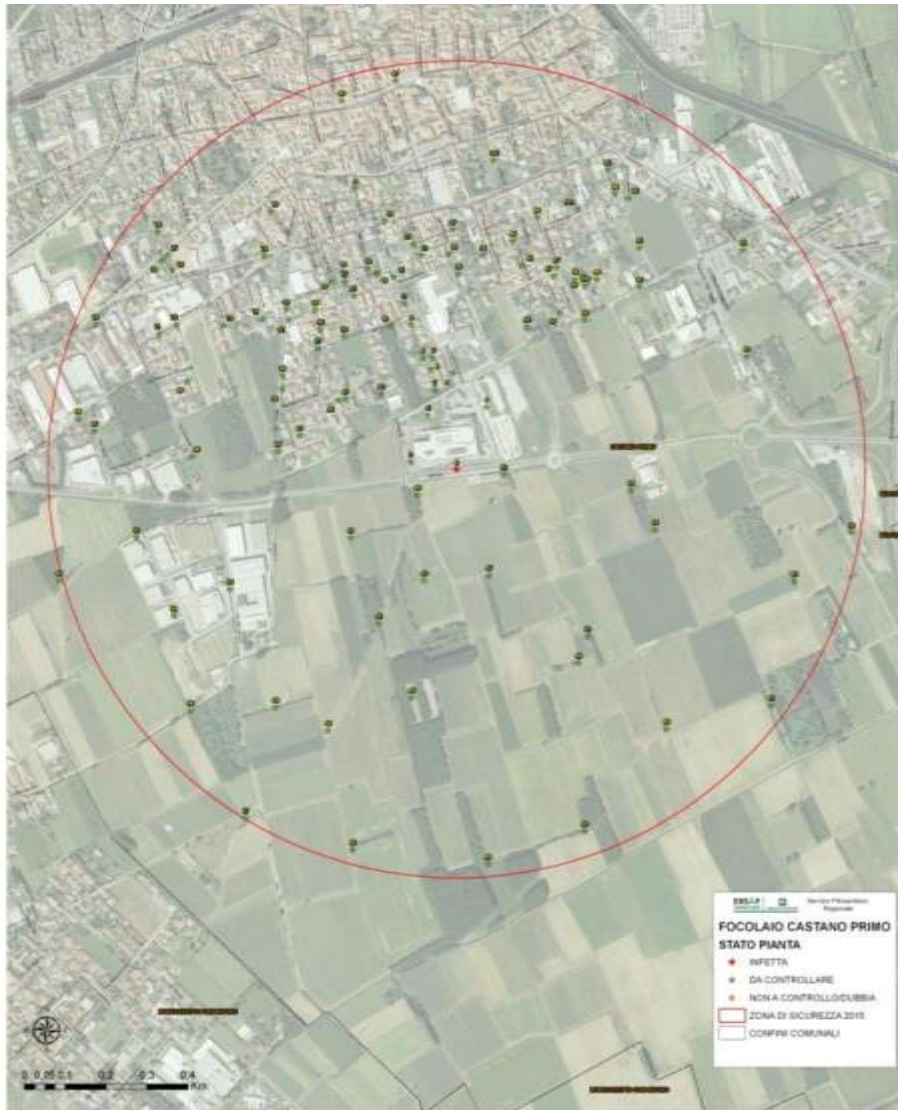
➤ Application of phytosanitary measure on infected field

➤ Verify if nurseries of host plants are inside delimited area (eventual application of phytosanitary measure)

➤ Surveys on delimited area for 3 years

Erwinia amylovora (fire blight): surveys

Pome Fruits

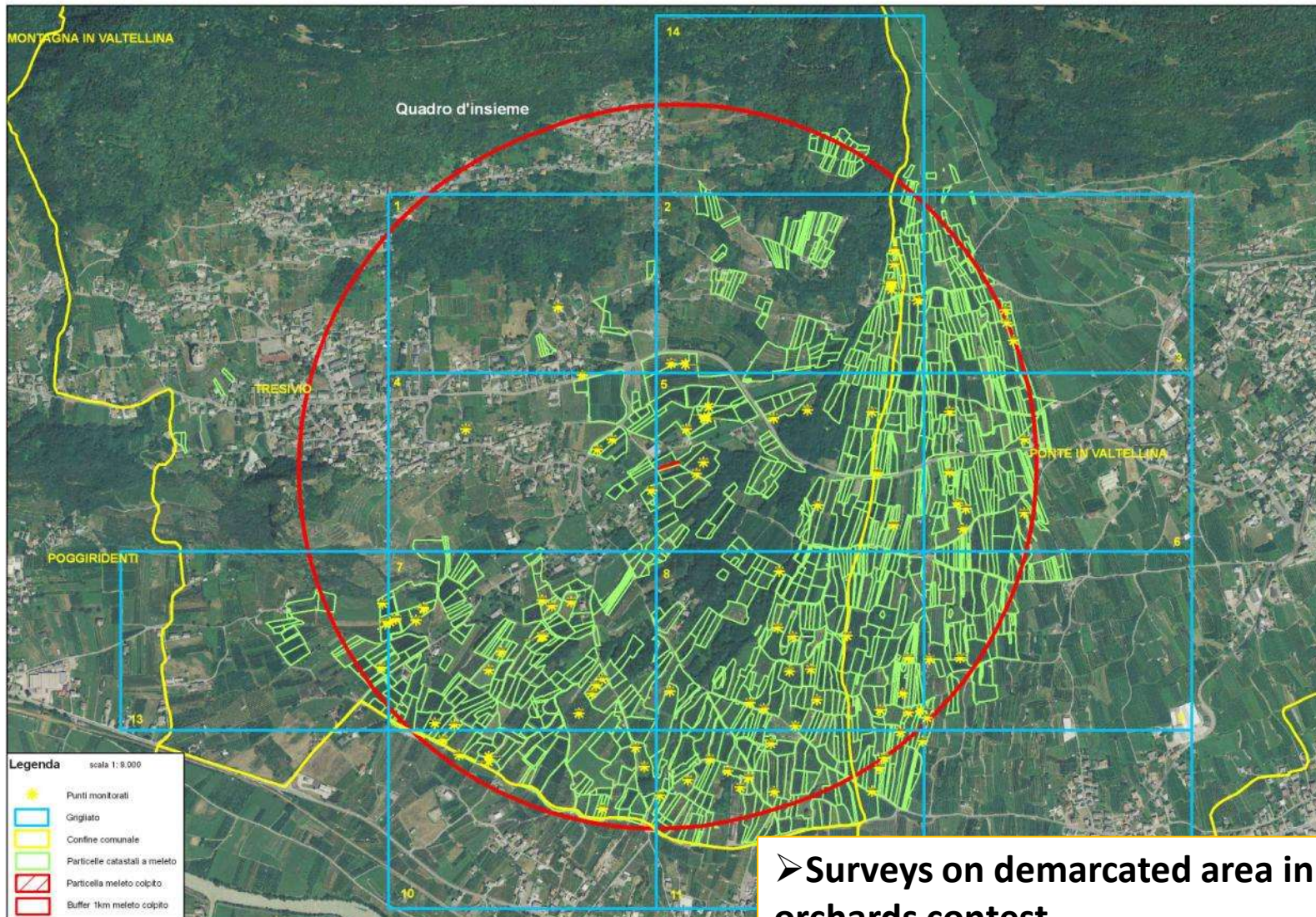


Date	Nome	Count_X	Count_Y	Data_Orto (month/year)	N° piante (total/infected)	Specie presenti	Tipologia (pianta A/C)	Year 2013	Year 2014
1	area fr. paranchemia 1	338820.00	508870.00	11/10/12	30/0				
2	area fr. paranchemia 2	338830.00	508884.00	11/10/12	5/0				
3	area fr. paranchemia 3	338845.00	508893.00	11/10/12	80/0				
4	area fr. composita 4	338898.00	508928.00	11/10/12	7/0				
5	area fr. 199	338912.00	508972.00	11/10/12					
6	area fr. paranchemia 5	338970.00	509002.00	11/10/12	20/0				
7	area fr. paranchemia 6	338942.00	509008.00	11/10/12	20/0				
8	area fr. paranchemia 4	338942.00	509008.00	11/10/12	1/0				
9	area fr. paranchemia 7	338947.00	509050.00	11/10/12	20/0				

➤ Surveys on demarcated area in urban context

Erwinia amylovora (fire blight): surveys

Pome Fruits



➤ Surveys on demarcated area in orchards contest