

Innovative IPM tools for managing major diseases on grapevine

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WP6 - IPM solutions to reduce pesticides reliance in grapevine



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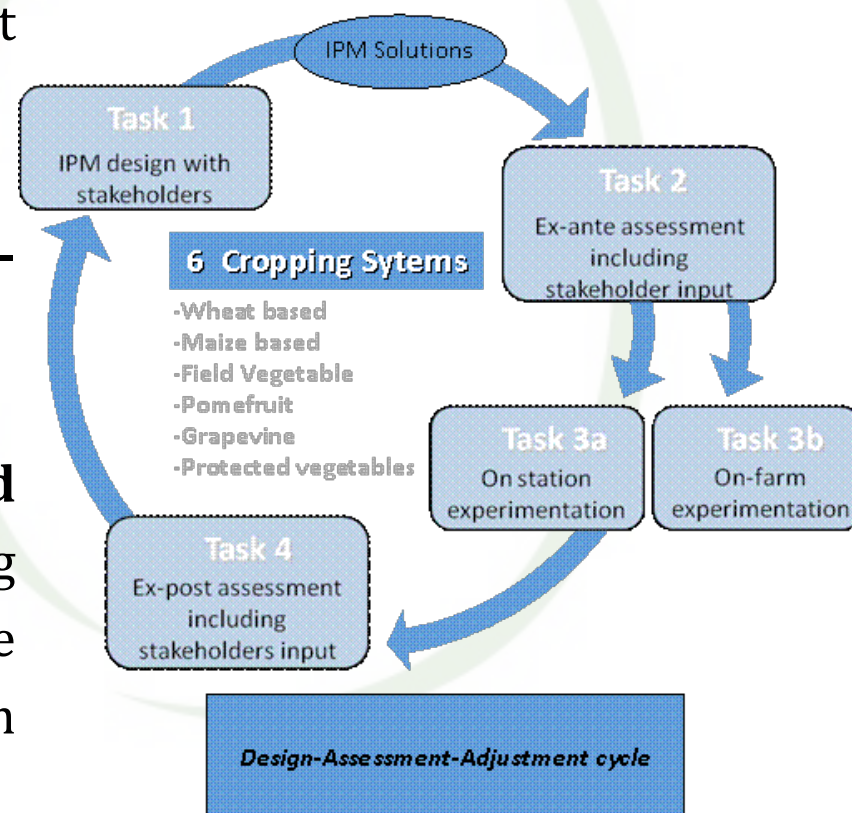


UNIVERSITÀ
DEGLI STUDI
FIRENZE



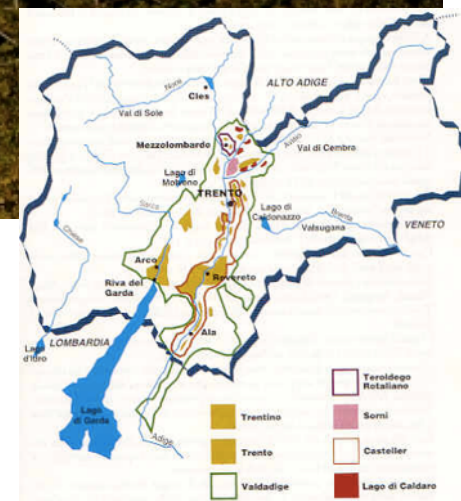
FONDAZIONE
EDMUND
MACH

1. **Produce IPM solutions** that address the **most critical** pest problems in grapevine systems
2. **Test candidate IPM solutions on-station and on-farm**
3. **Assess and compare field-tested candidate IPM solutions** using **multiple criteria** and endorse **viable solutions** for mainstream dissemination





Trentino Alto-Adige

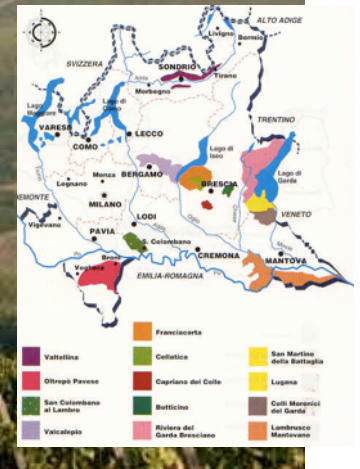


1 farm for two seasons





Oltrepo Pavese and Colli Piacentini



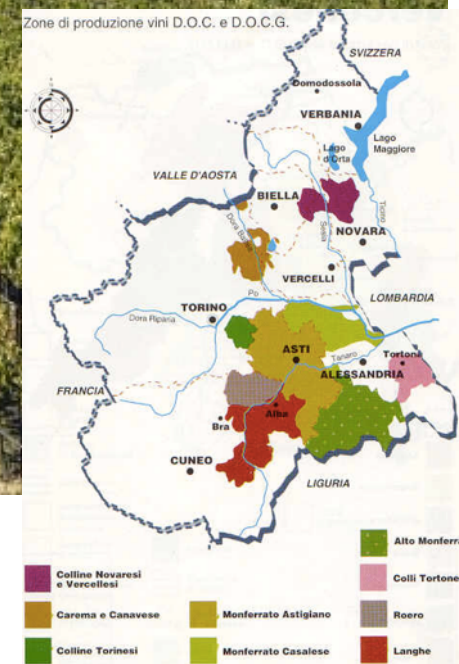
3 farms for three seasons



Gavi



1 farms for two seasons





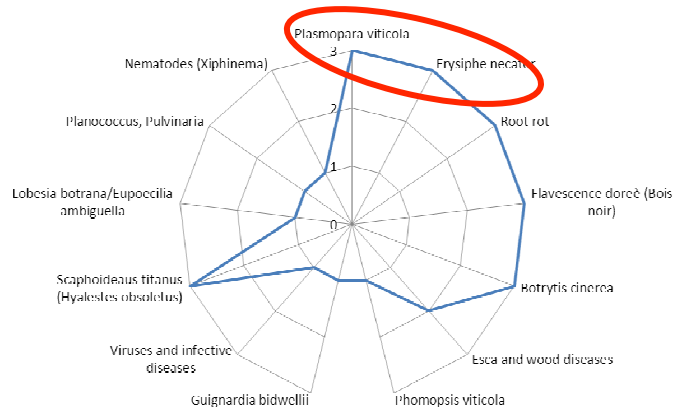
Chianti



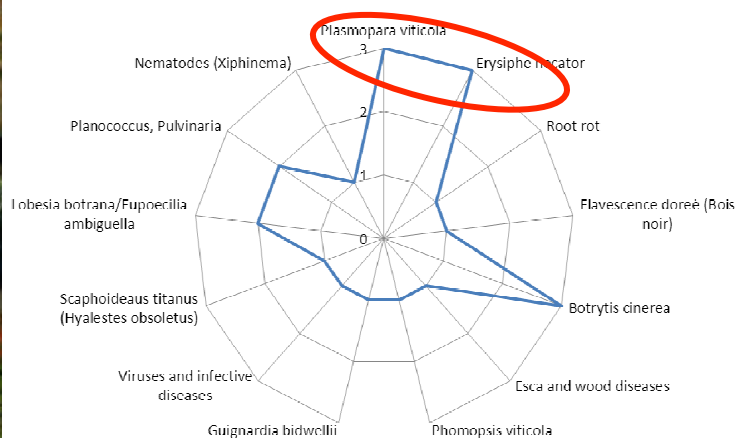
5 farms for two seasons



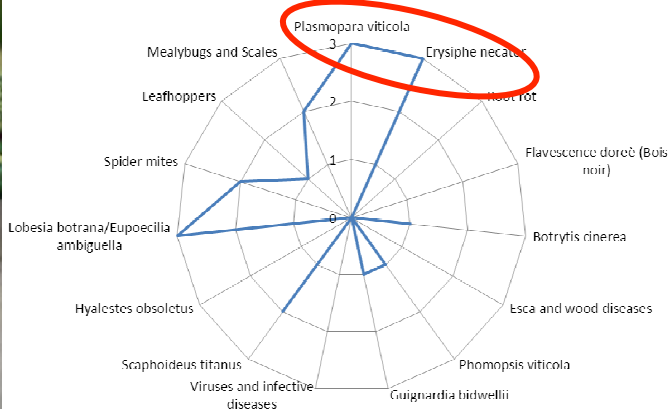
South of Alps (Italy, Trentino)



Po Valley (Italy)



Central Italy (Toscana)



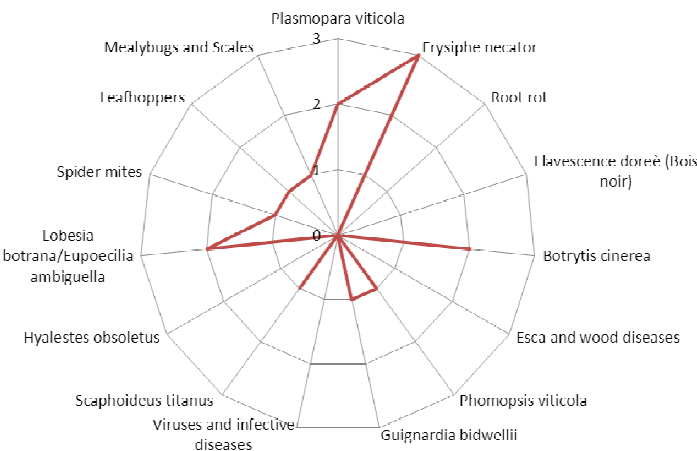
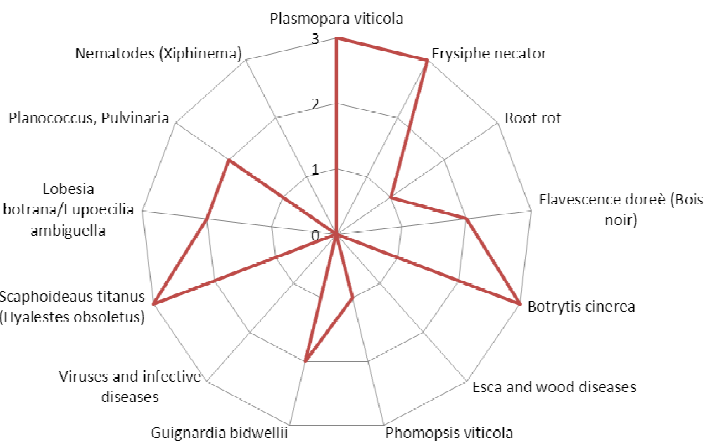
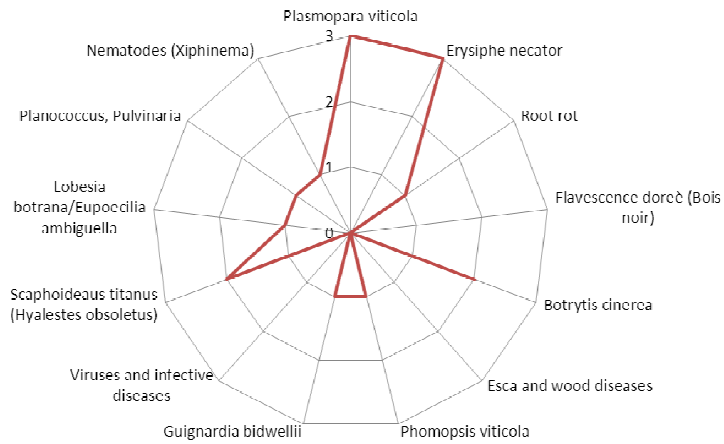
Most critical grapevine issues

Priorities in term of need of pesticides reduction:

Plasmopara viticola
Erysiphe necator
Botrytis cinerea

Flavescence doree

Scaphoideus titanus
Lobesia botrana



Most critical grapevine issues

High level of pesticides input for:

Plasmopara viticola

Erysiphe necator

Botrytis cinerea

Scaphoideus titanus



Downy & Powdery mildews were identified as key diseases across all the studied areas, where fungicide applications are necessary to avoid yield losses (**up to 15-18 sprays/season**)

- ▶ With calendar-based schedule there is a huge amount of input (often useless)
- ▶ A key role in the epidemics of both diseases is played by the primary infections (i.e. inoculum provided by oospores and chasmothecia)



What we did

1. Different grape-growing areas
2. Installation of weather station
3. Training of the vineyard managers
4. 18 farms over three seasons



Application of an innovative DSS


Horta S.r.l. - Home page - Windows Internet Explorer

http://www.horta-srl.com/nqcontent.cfm?a_id=7906

Nome utente Password
Hai dimenticato la password?

italiano

Chi siamo Servizi Documenti Novità Rassegna stampa Contatti Cerca



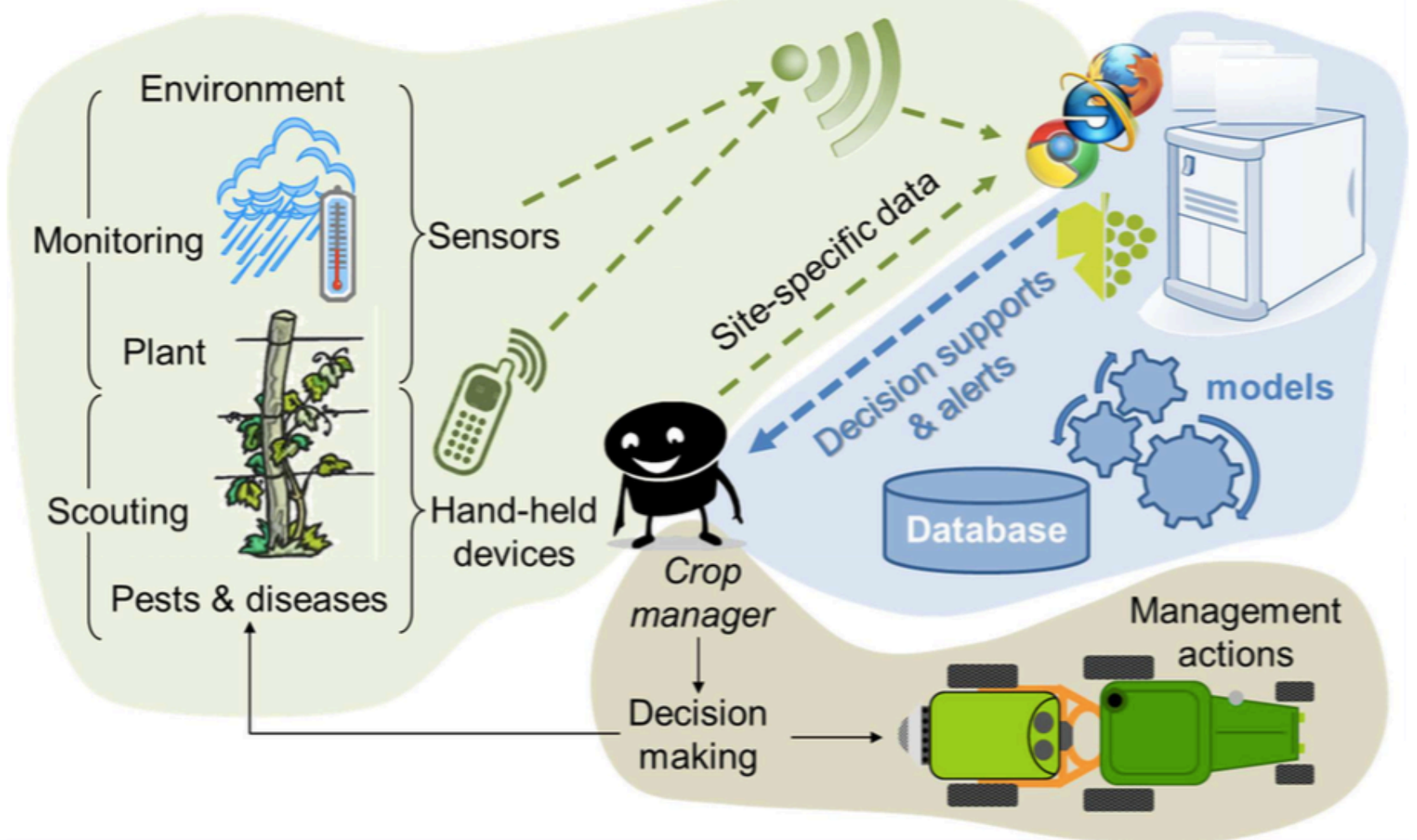
Chi siamo
Horta Srl è uno Spin Off della Università Cattolica del Sacro Cuore, costituita nel 2008, con sede a Piacenza e Ravenna.
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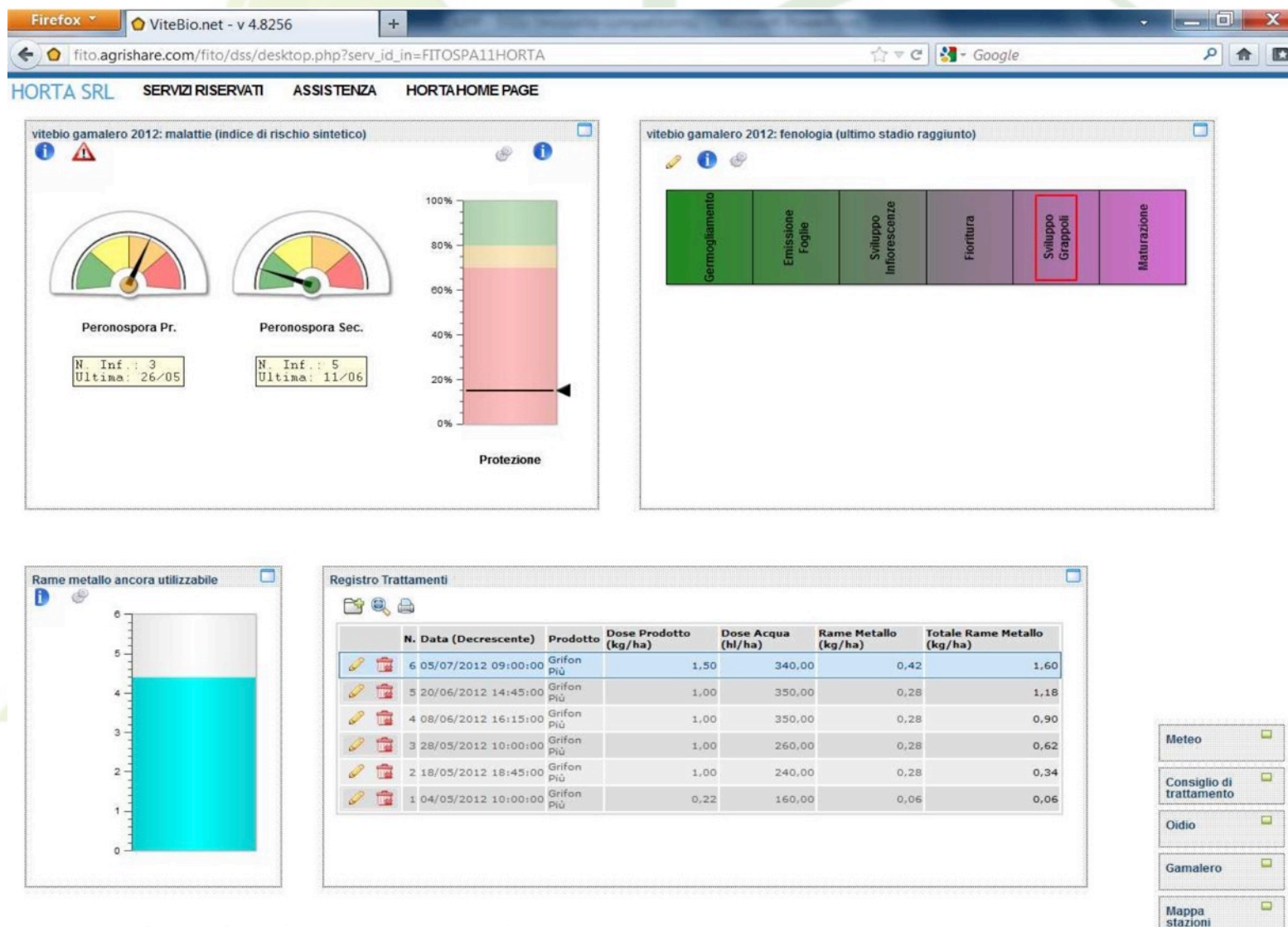
Obiettivi
Obiettivo di Horta S.r.l. è quello di fornire dei servizi altamente qualificati nel settore della agricoltura sostenibile.
[Leggi tutto](#)

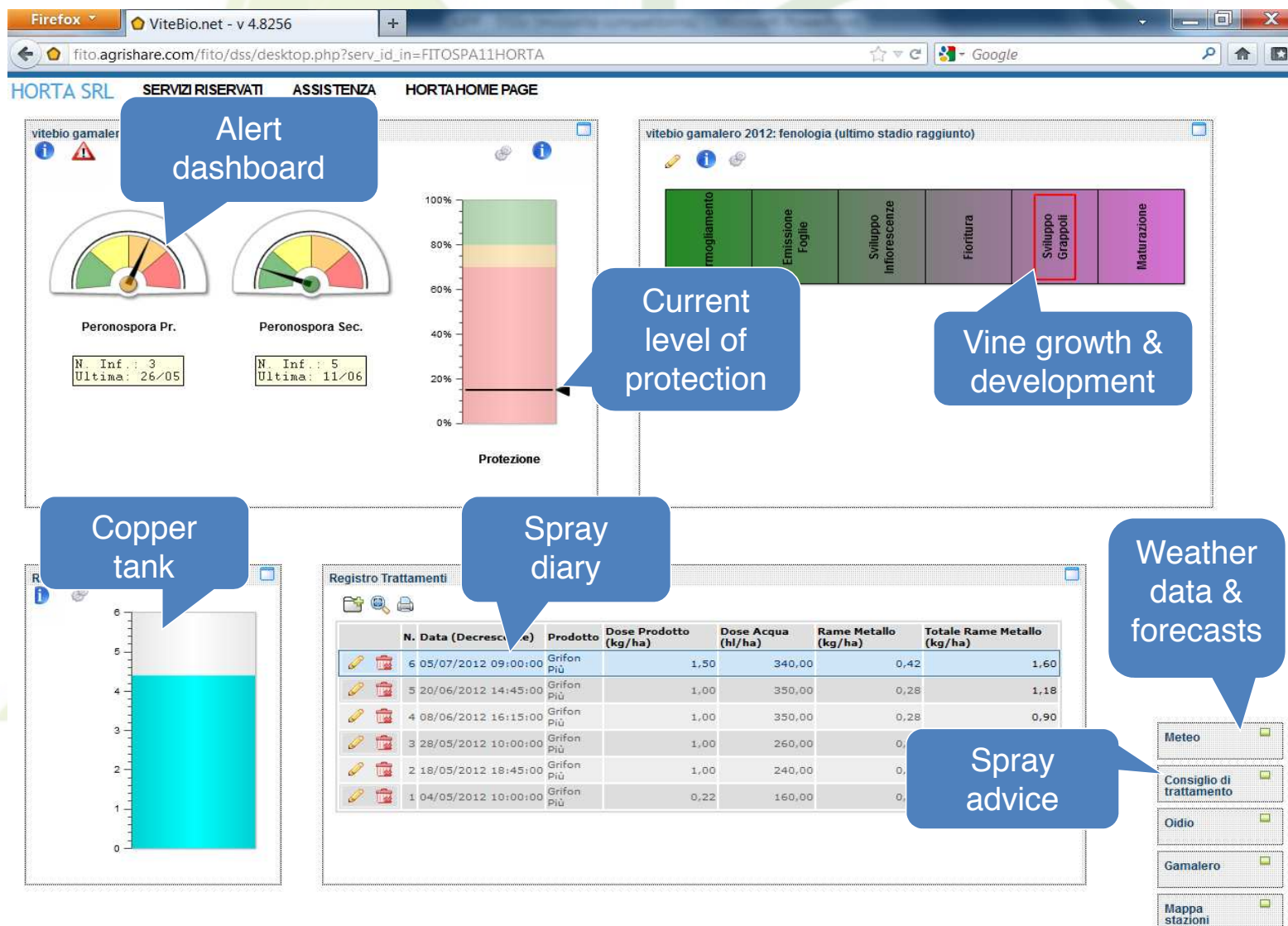
Novità
03 AGO 2011 **Giornate di studio - Uso sostenibile dei prodotti fitosanitari e IPM: prospettive di ricerca in Italia**

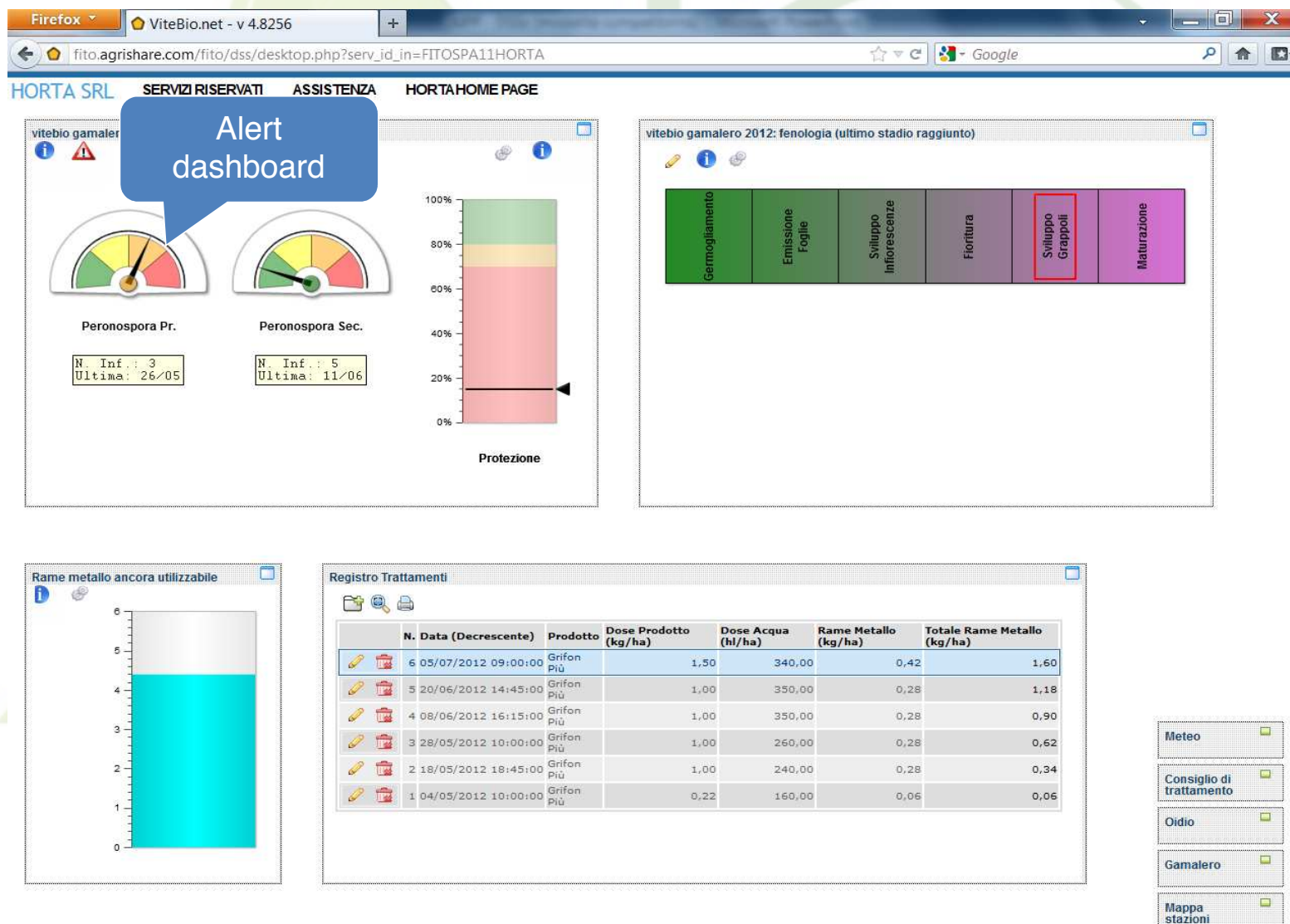
www.horta-srl.com

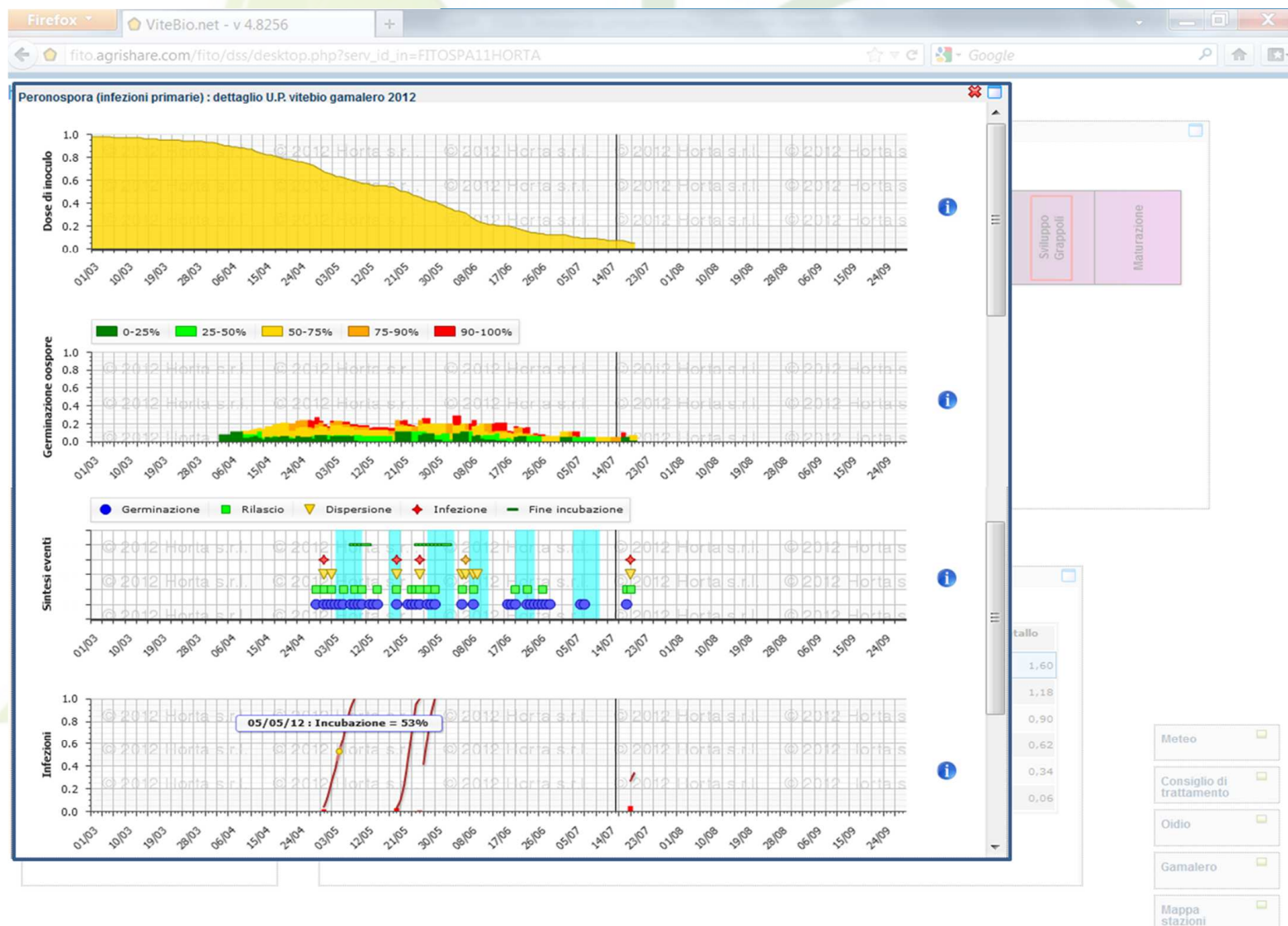
Application of an innovative DSS

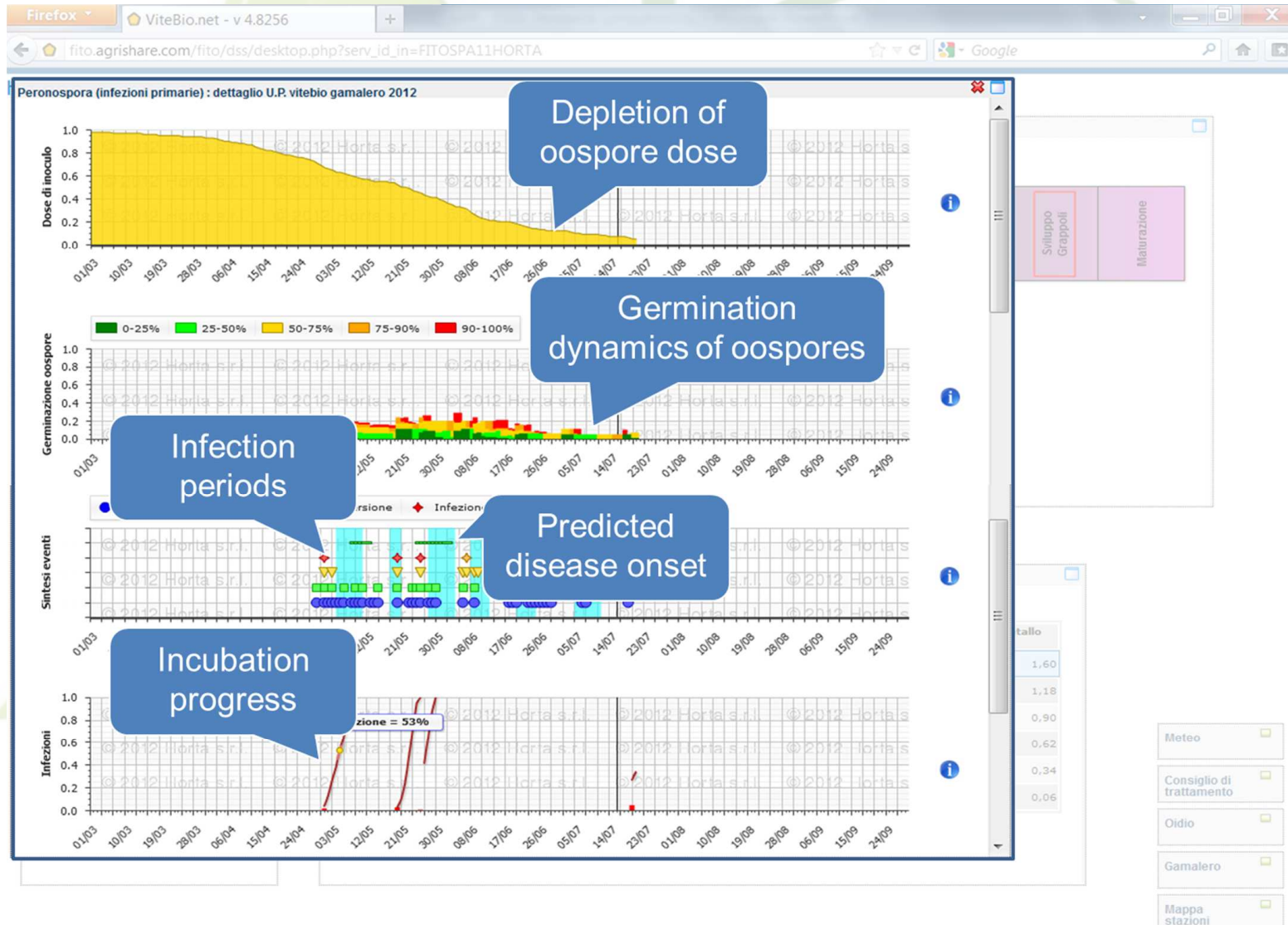


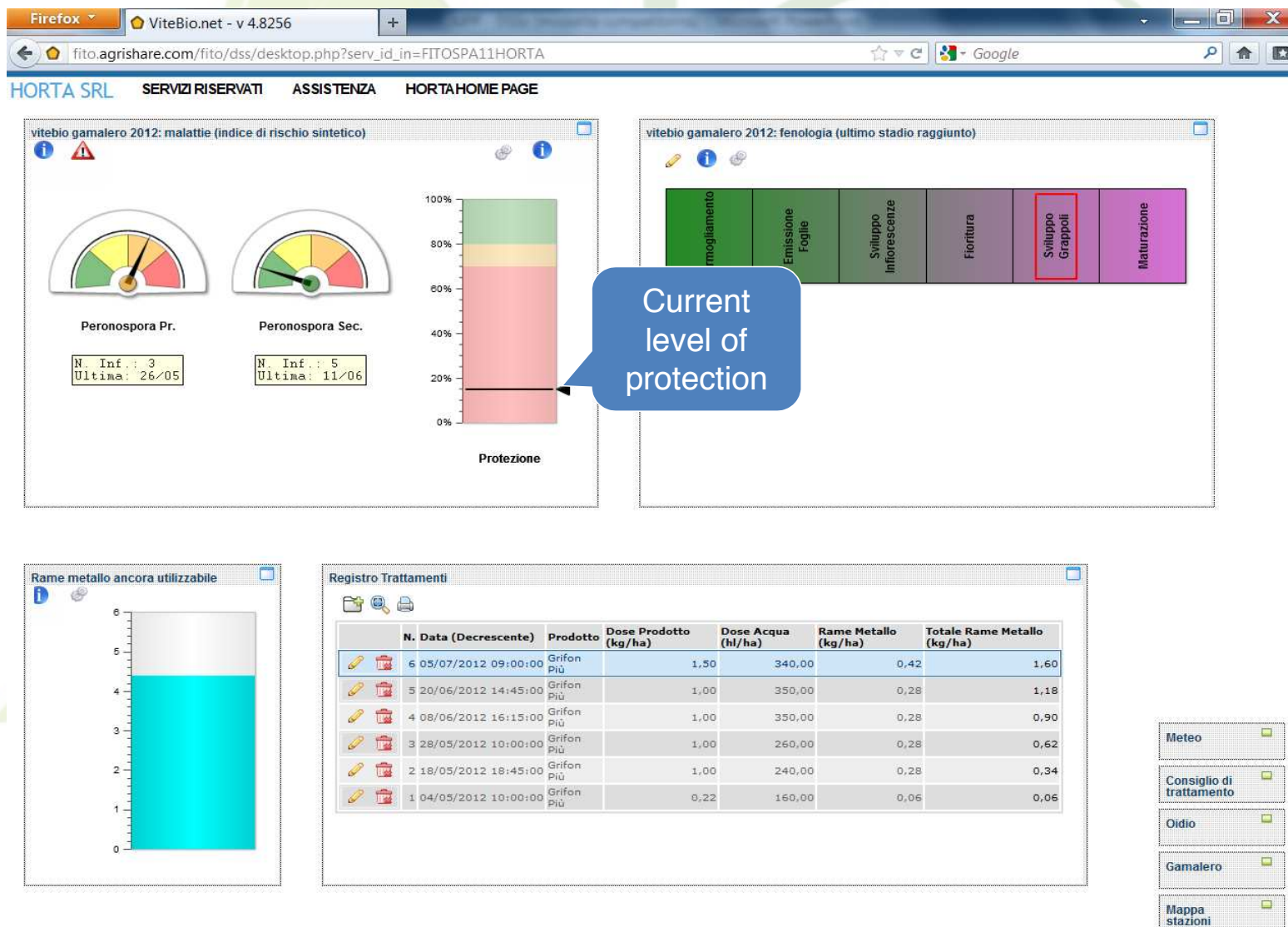


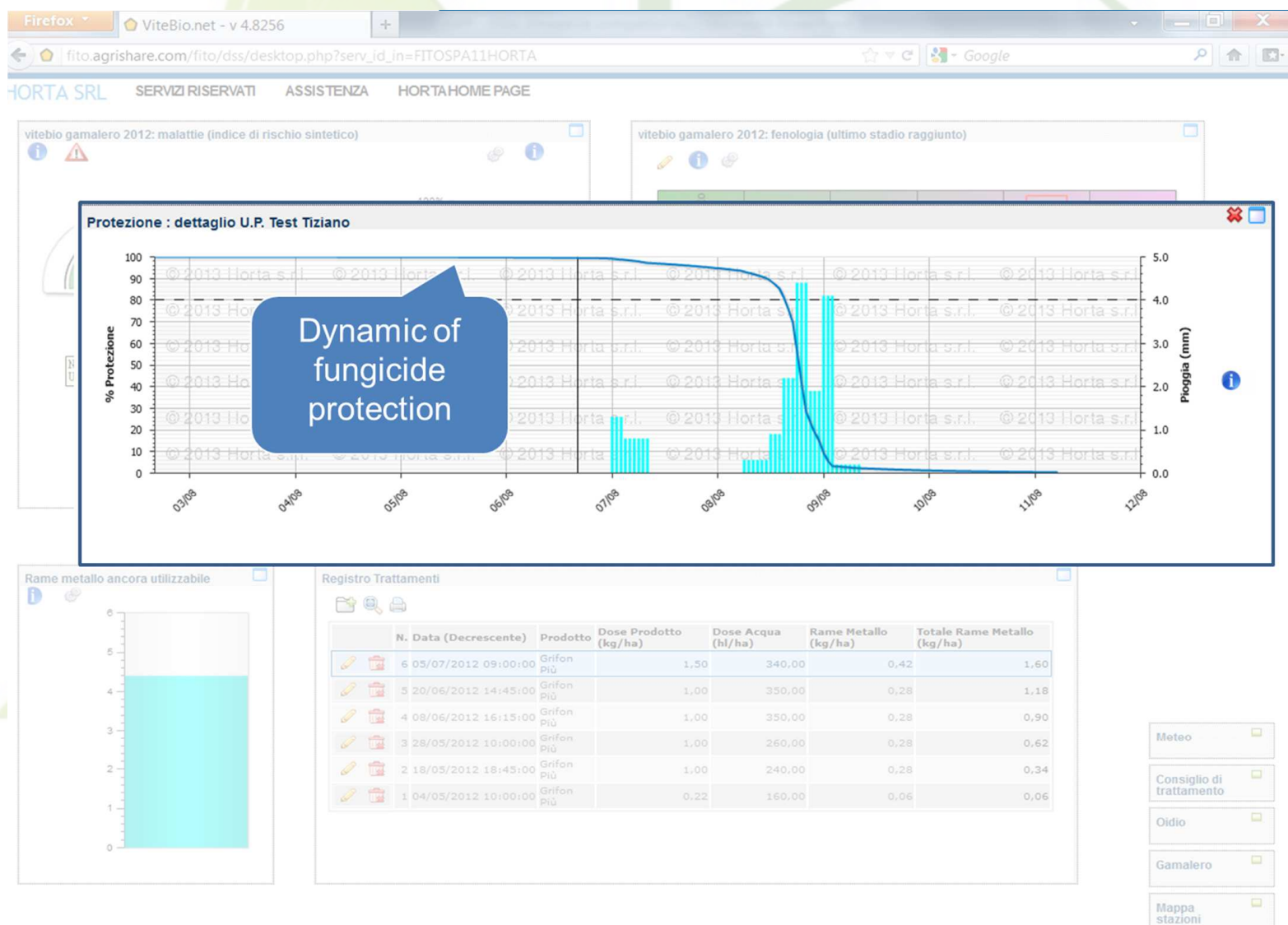


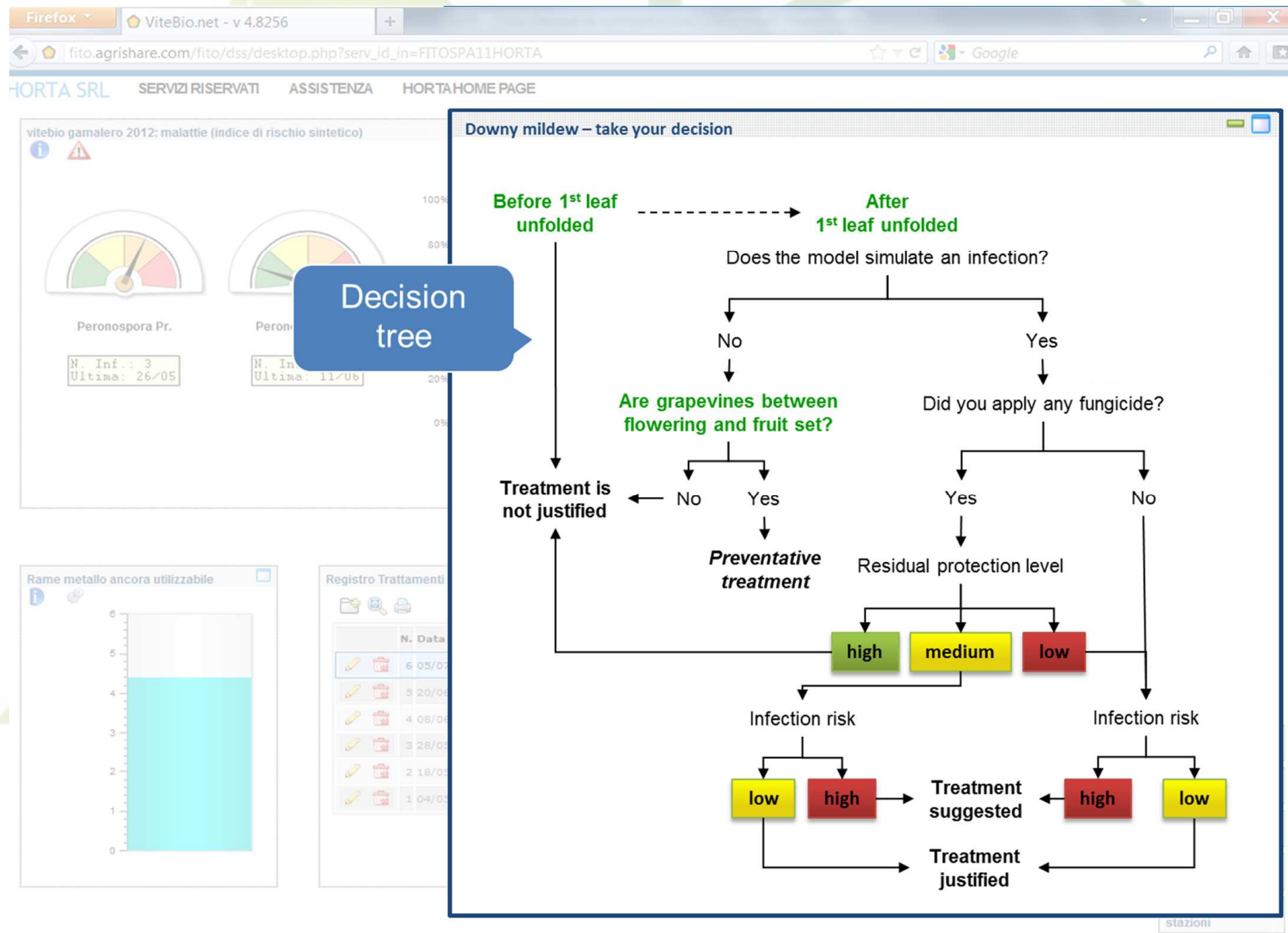












Firefox ViteBio.net - v 4.8256
fito.agrishare.com/fito/dss/desktop.php?serv_id_in=FITOSPA11HORTA

HORTA SRL SERVIZI RISERVATI ASSISTENZA HORTAHOME PAGE

Database of products Target organisms Product characteristics

Preparato (Crescente)	Distributore	p.a.	Malattie				Materiale informativo	Profilo preparato	Dose consigliata	Applicabilità
			Peronospora	Oidio	Muffa grigia	Marciume nero (black-rot)				
Tribord	Siapa	?	*							
Trimanoc 80 WP	Cerexagri Italia	?	*							
Universalis	Syngenta Crop Protection	?	*	*		*				
Valbon	Certis Europe B.V. - Italian Branch	?	*							
Valis F	Siapa	?	*							
Vebirame flow	Vebi Istituto Biochimico S.r.l.	?	*							
Ventilene Acuprizzata 6%	PASQUALE MORMINO & FIGLIO S.R.L.	?	*	*						
Venturex 35 L	Scam	?	*							
Venturex 35 L	Green Ravenna S.r.l.	?	*							
Verderame Sivam	Sivam S.p.A	?	*							
Vincare	Makhteshim Agan Italia	?	*		*					
Vitene 45 WG	Sipcam S.p.A.	?	*							

Recommended dose

Recommended scheduling

3 28/05/2012 10:00:00 Grifon Più 1,00 260,00 0,28 0,62
2 18/05/2012 18:45:00 Grifon Più 1,00 240,00 0,28 0,34
1 04/05/2012 10:00:00 Grifon Più 0,22 160,00 0,06 0,06

Meteo
Consiglio di trattamento
Oidio
Gamalero
Mappa stazioni

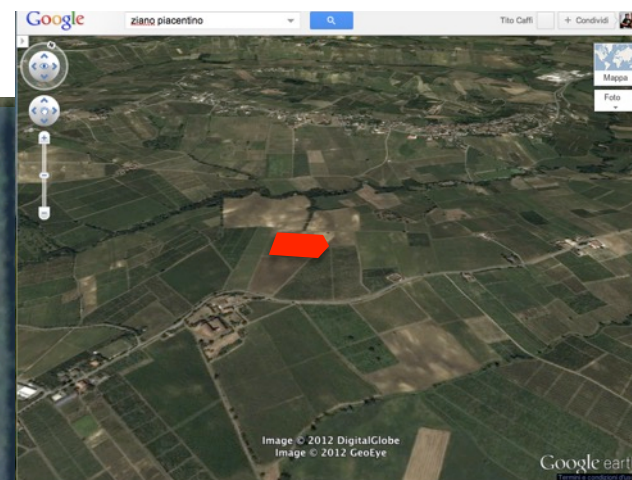


Row 1

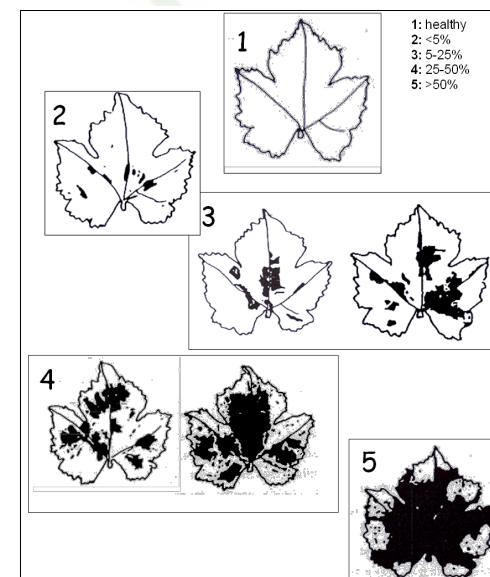
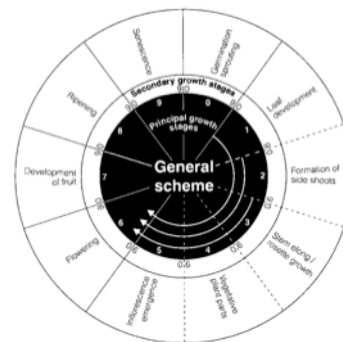


24

48



Periodic disease assessment



	BBCH 53	BBCH 61-63		BBCH 71		BBCH 79		BBCH 81	
vite.net®	-	-	-	-	-	2% (leaves)	1% (leaves)	11% (leaves)	5% (bunches)
Farm practice	-	-	-	-	-	1,5% (leaves)	1% (leaves)	6% (leaves)	6,5% (bunches)
Untreated control	-	4% (leaves)	8% (bunches)	3% (leaves)	4% (bunches)	30% (leaves)	30% (bunch)	70% (leaf)	33% (bunches)

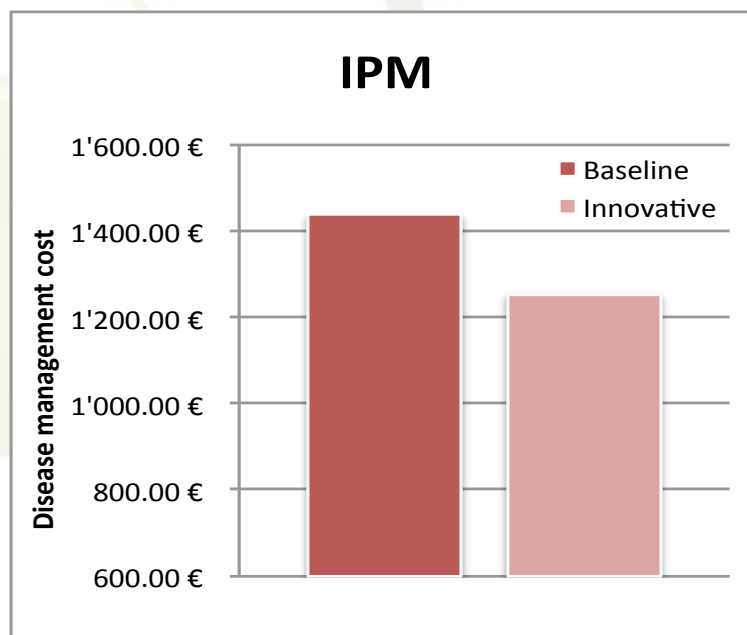
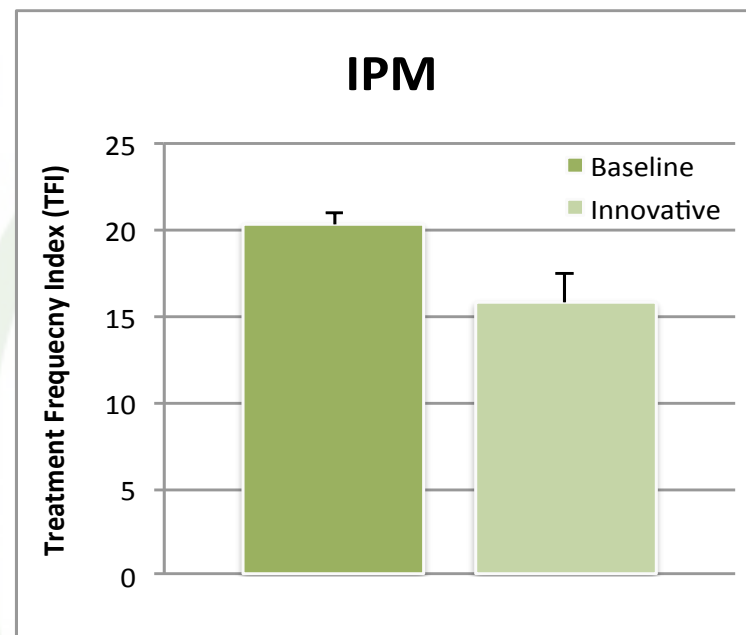
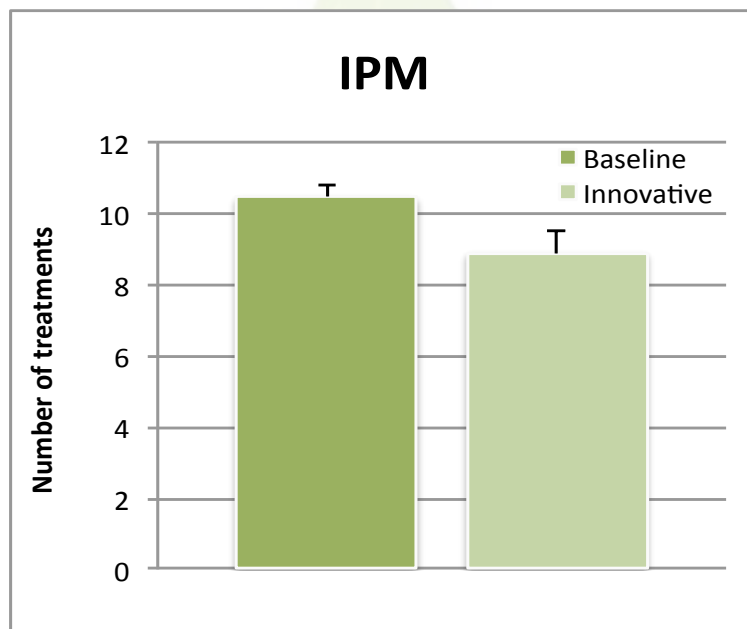
Ecotox Acute Risk

	Aquatic	Earthworm	Bee	Groundwater
complete strategy	119.92	0.00	1.52	1.27
chlorpyrifos	119.92	0.00	1.52	0.00
copper oxychloride	0.69	0.00	0.18	0.00
cymoxanil	0.02	0.00	0.00	0.00
dimethomorph	0.00	0.00	0.00	0.00
dinocap	0.39	0.00	0.01	0.00
fenamidone	0.03	0.00	0.00	0.00
fosetyl-aluminium	0.00	0.00	0.00	0.00
iprovalicarb	0.00	0.00	0.00	0.00
mancozeb	0.36	0.00	0.00	0.00
mandipropamid	0.00	0.00	0.00	0.00
metalaxyl	0.00	0.00	0.00	1.27
sulphur	0.81	0.00	0.04	0.00
tebuconazole	0.04	0.00	0.00	0.00

Ecotox Chronic Risk

	Aquatic	Earthworm	Bee	Groundwater
complete strategy	179.45	0.05	10.61	0.25
chlorpyrifos	175.95	0.01	9.04	0.00
copper oxychloride	7.85	0.03	1.40	0.00
cymoxanil	0.05	0.00	0.00	0.00
dimethomorph	0.01	0.00	0.01	0.00
dinocap	0.84	0.02	0.02	0.00
fenamidone	0.10	0.01	0.00	0.00
fosetyl-aluminium	0.00	0.00	0.00	0.00
iprovalicarb	0.00	0.00	0.00	0.00
mancozeb	2.90	0.00	0.00	0.00
mandipropamid	0.00	0.00	0.00	0.00
metalaxyl	0.00	0.00	0.00	0.25
sulphur	1.90	0.02	0.16	0.00
tebuconazole	0.43	0.00	0.01	0.00

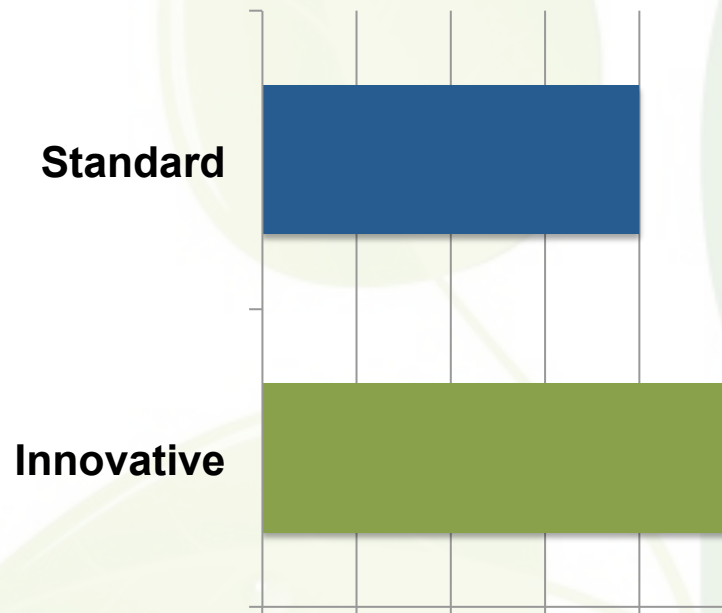
Sustainability assessment



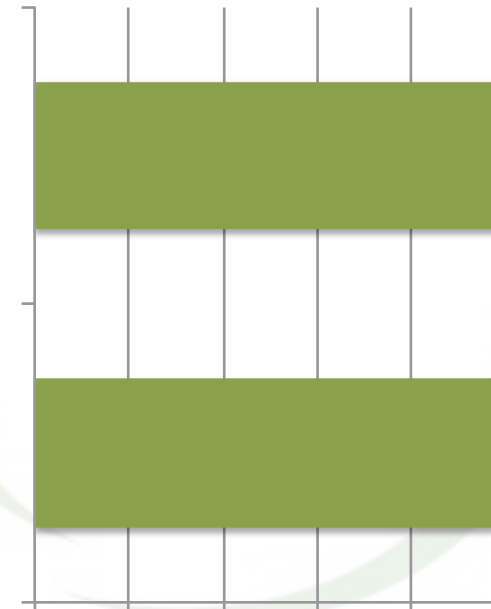
Sustainability assessment

Overall Sustainability

IPM



Organic





Sustainability assessment

IPM

Environmental

Standard

Innovative

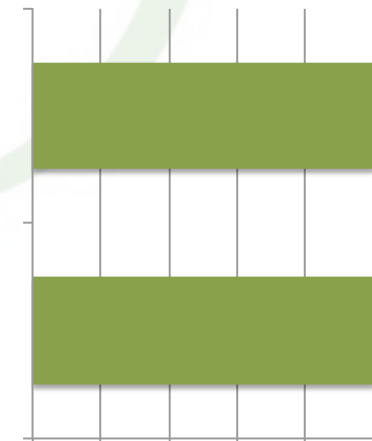
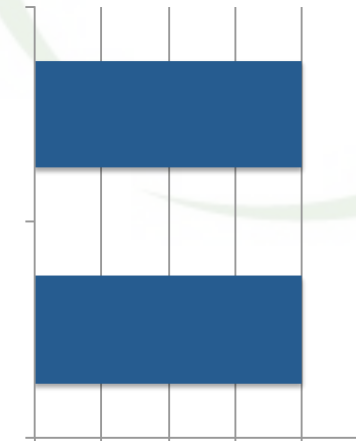
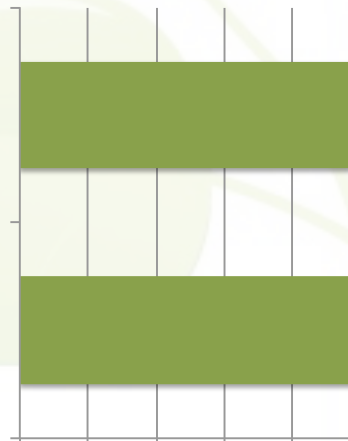
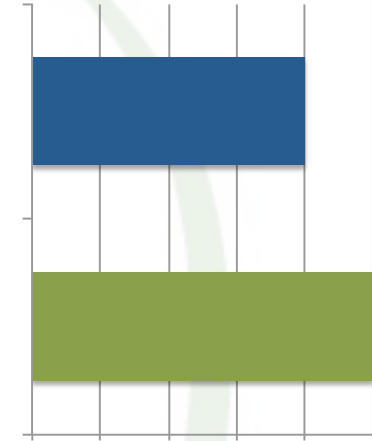
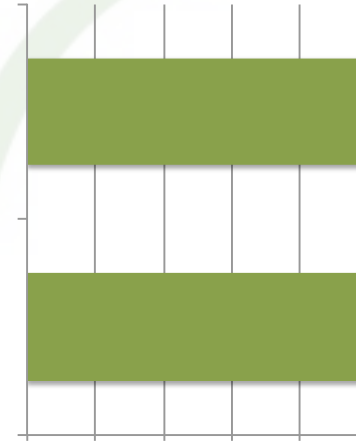
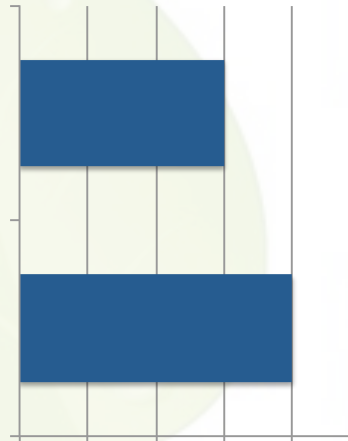
Economical

Social

Organic

Standard

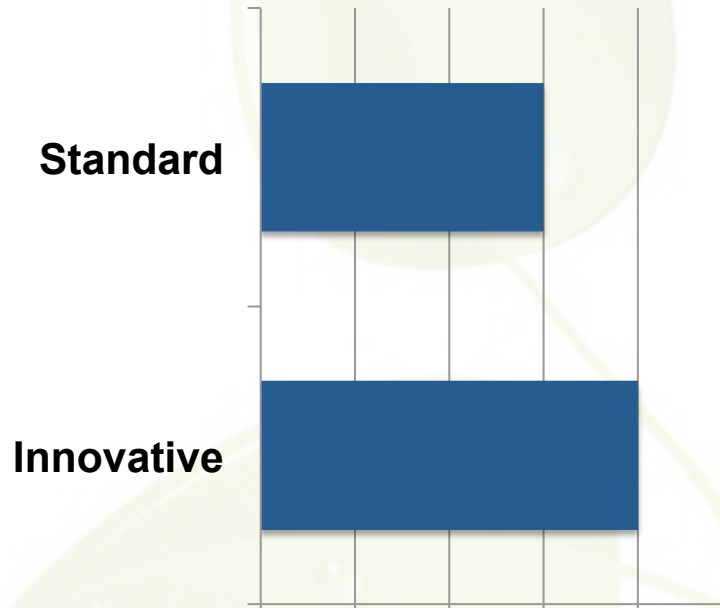
Innovative



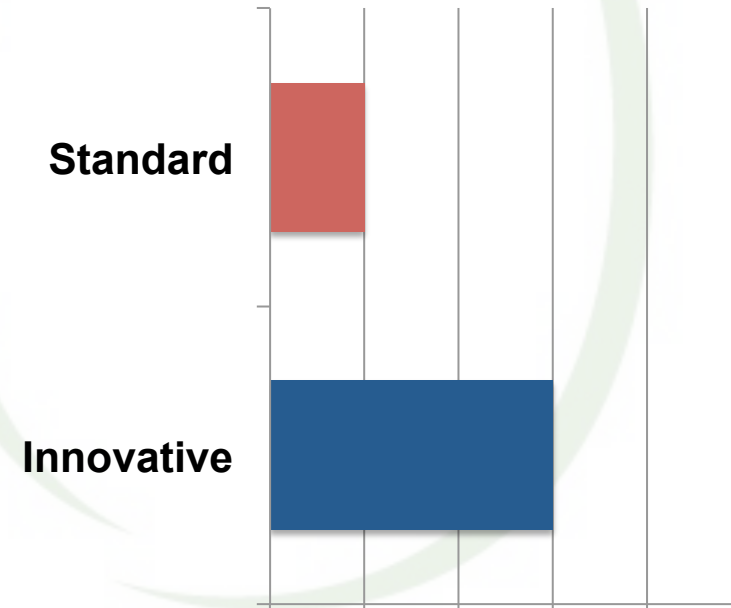
Sustainability assessment

IPM

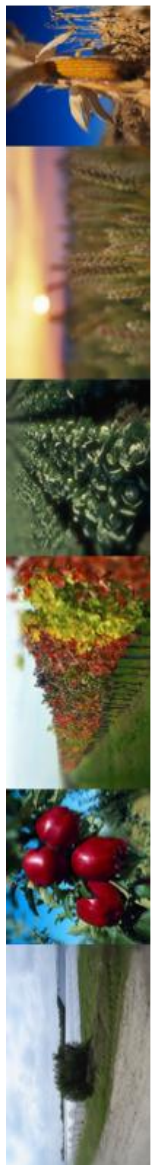
Job gratification



Biodiversity



- The innovative DSS named **vite.net[®]** was tested in several **grape-growing areas** across Italy **under different epidemiological conditions**
- **Protection** obtained by farmers using the information **provided by the DSS was never different by** the one obtained according **the baseline strategy**
- Information provided by **the DSS allowed to reduce tractor rides by 16% and 13%** and **TFI by 32% and 44%** compared to the **baseline** in IPM and Organic respectively





Thank you for your attention!



The research leading to these results has received funding from the European Union Seventh Framework Programme (FP7/ 2007-2013) under the grant agreement n°265865- PURE