



# BIOGARD®

*biological First.*



CBC GROUP

## THE BUSINESS MODEL OF CBC EUROPE

### 5<sup>th</sup> Symposium on Sustainable Use of Pesticides

European Parliament in Brussels - 7<sup>th</sup> February 2017



# BIOCONTROL INDUSTRY

Develop products and strategies to control pest and disease by studying their **BIOLOGY** and **BEHAVIOUR** to achieve the smartest and most robust results with highest sustainability



## Macrobials

Predatory mites  
Insects  
Nematodes

## Semiochemicals

Pheromones  
Plant volatiles

## Microbials

Viruses  
Bacteria  
Fungi

## Botanicals

Plant extracts  
Seaweed products  
Basic substances



## CBC EUROPE

*a subsidiary of CBC Group – Tokyo, JAPAN*

*with the BIOGARD® division develop and market a full range of biological products offering strategies for pest control in integrated and organic agriculture*



# BIOGARD®



**nutrition**



**microbials**



**ShinEtsu  
pheromones**







**botanicals**



**macrobiols**



	<b>Moths of Grapes</b> <i>Lobesia botrana, Eupoecilia ambiguella, A. ljugiana, S. pilleriana, C. gnidiella, etc.</i>	<b>ISONET® PHEROMONES LEPINOX – RAPAX BT</b>
	<b>Vine Mealybugs</b> <i>Planococcus ficus, Pseudococcus spp., Targionia vitis)</i>	<b>ANAGYRUS MACROBIAL NARROW RANGE FINE OIL (ISONET® PHEROMONES)</b>
	<b>Leafhoppers</b> <i>Scaphoideus titanus, Empoasca vitis, Jacobiasca lybica, Zygina rhamni</i>	<b>NATURAL PYRETHRUM (VIBRATIONAL DISRUPTION)</b>
	<b>Mites</b> <i>E. carpini, P. ulmi</i>	<b>NATURALIS MICROBIAL NARROW RANGE FINE OIL</b>



# biologicals for grape diseases



## Downy mildew

*Plasmopara viticola*

PINE EXTRACTS COPPER  
HELIOCUIVRE



## Powdery mildew

*Uncinula necator*

PINE EXTRACTS SULPHUR  
HELIOSEUFRE  
AQ10 MICROBIAL HYPERP.  
VITIKAPPA POTASSIUM HC



## Grey mold

*Botrytis cinerea*

AMYLO-X MICROBIAL



## Bunch acid rots

*Penicillium spp, Aspergillus spp*  
several yeasts and bacteria

AMYLO-X MICROBIAL



**1996 - 2016**

**20 years of grape moths areawide control  
by pheromone mating disruption in Trentino**



**ShinEtsu**  
PHEROMONES

**1984-1994**

*Initial development works*

**1996 ISONET® L**

*(Lobesia botrana)*

**2000 ISONET® LE**

*(L. botrana + E. ambiguella)*

**2005 ISONET® L plus**

*(L. botrana + low E. ambiguella)*

**2012 ISONET® L Aplus**

*(L. botrana + A. ljugiana + low E. ambiguella)*

**2017 ISONET® L TT**

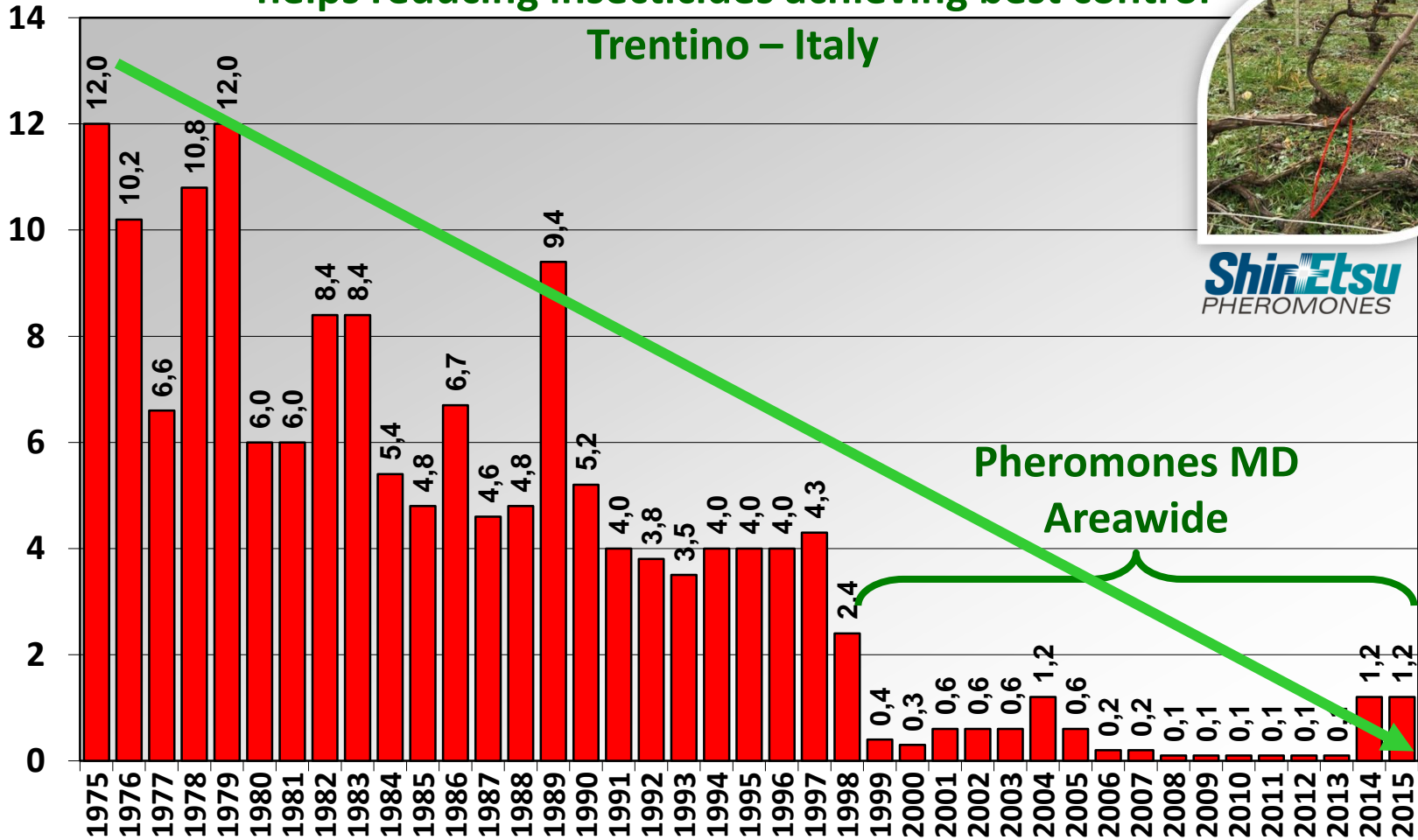
*(Lobesia botrana)*

# pheromones in viticulture



grape moths areawide pheromone Mating Disruption  
helps reducing insecticides achieving best control

Trentino – Italy



**ShinEtsu**  
PHEROMONES

Pheromones MD  
Areawide

Data courtesy of Mezzacorona Winery

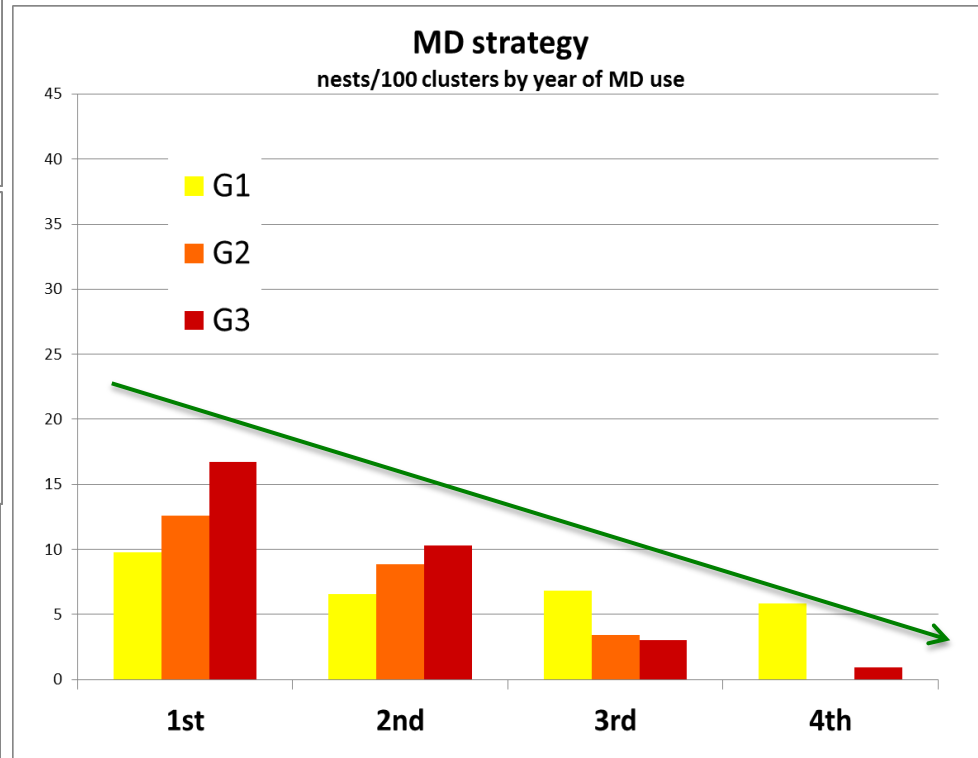
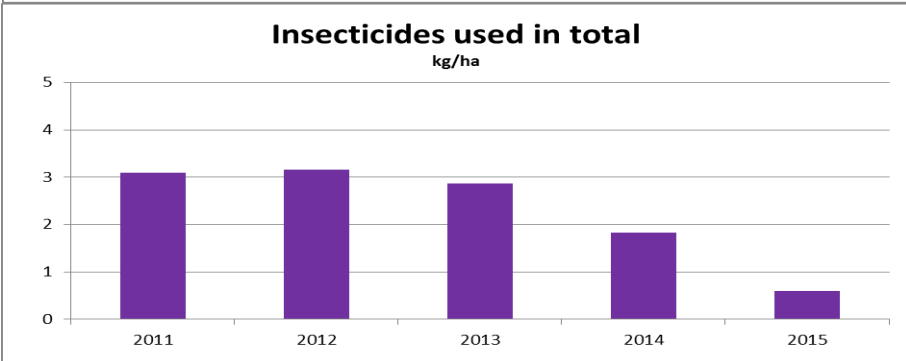
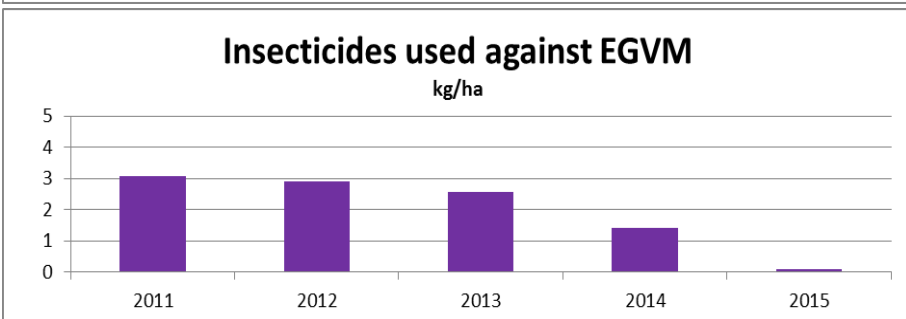
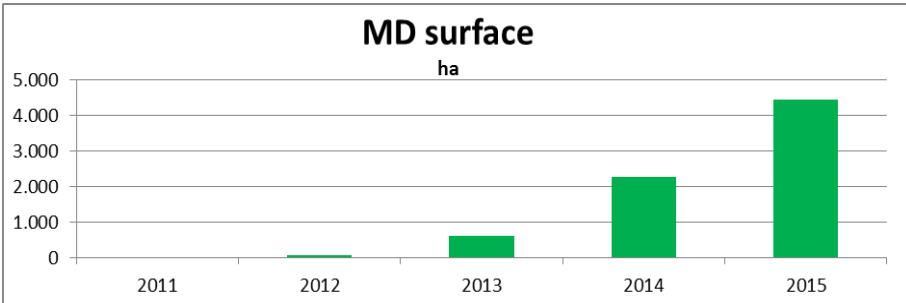
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# pheromones in viticulture



grape moths areawide pheromone Mating Disruption  
helps reducing insecticides achieving best control  
Carinena - Spain

**ShinEtsu**  
PHEROMONES



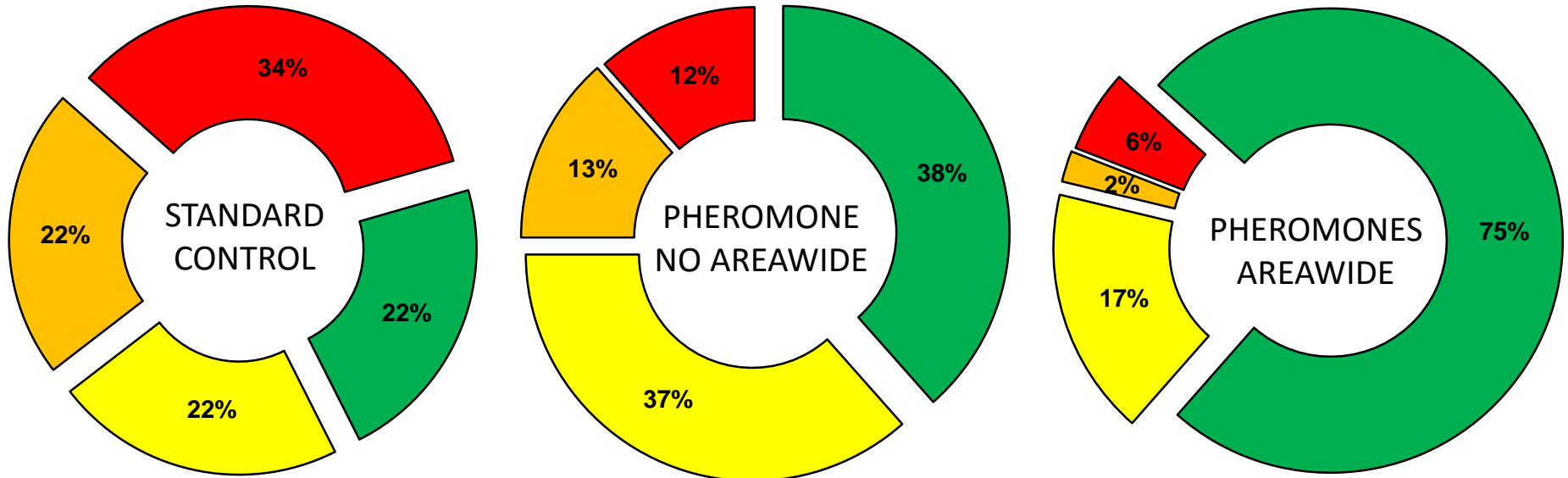
Data courtesy of Grandes Vinos y Vinedos  
technical department

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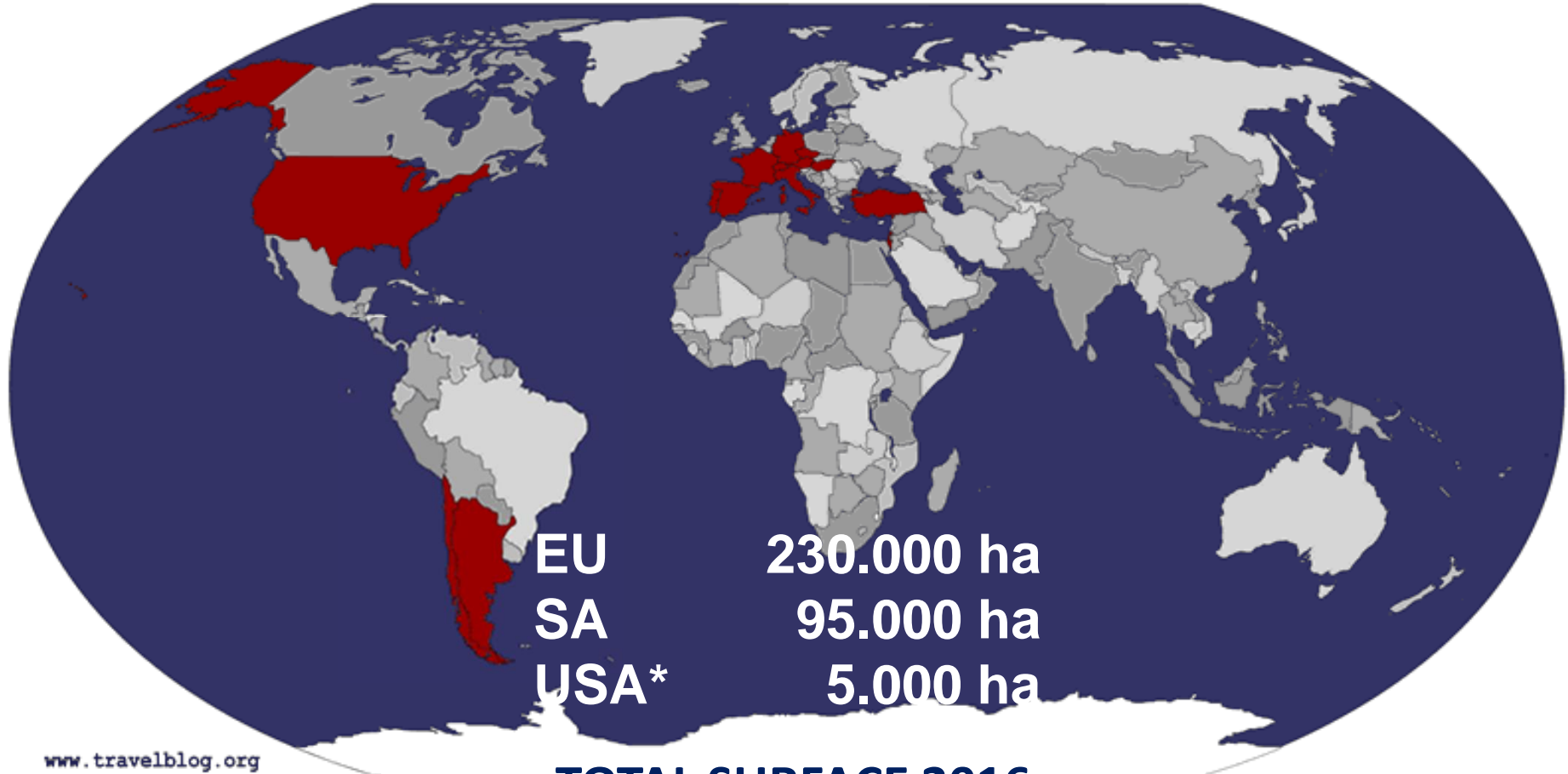
## 2016 Harvest infestation by project strategy in South France

■ Very low (0-5%)   
 ■ Low (6-15%)   
 ■ Medium (16-25%)   
 ■ High (>25%)



HARVEST - 2016	STANDARD	NON AREAWIDE			AREAWIDE
PLOT CHECKED	50	52			139
AVG. TREATMENT PER PLOT	G1	G2	G3	TOTAL	
STANDARD				2 to 5	
NON AREAWIDE	0.4	0.8	0.6	1.8	
AREAWIDE	0.1	0.4	0.4	0.9	

# grape moths pheromones worldwide



**TOTAL SURFACE 2016**  
**330.000 ha**

\*California announced eradication of grape moth in 2015

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# other grape pest...



## Vine Mealybug (*Planococcus ficus*)

*Anagyrus pseudococci*

Parassitoids released on first generation  
to reduce pest pressure



Pheromone Mating Disruption  
ISONET<sup>®</sup> PF and ISONET<sup>®</sup> LPF  
(market availability will depend  
upon EU approval procedure)



Ultra Fine Oil

Narrow range refined paraffinic oil

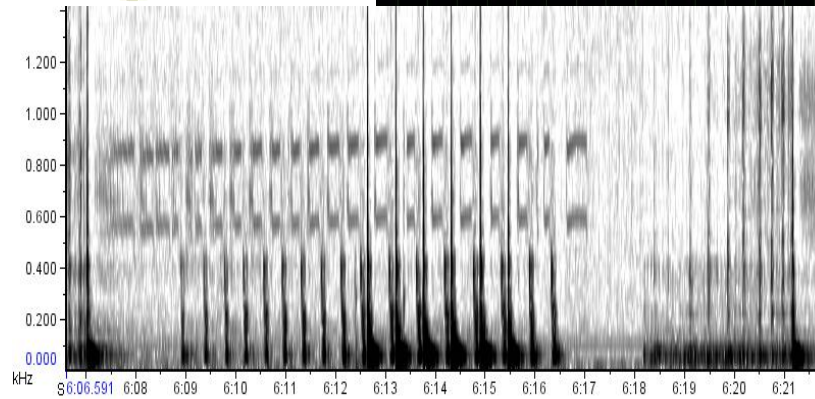
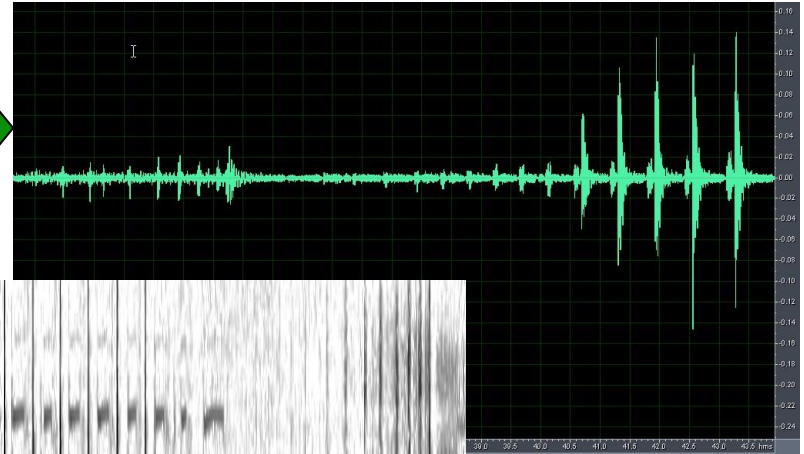
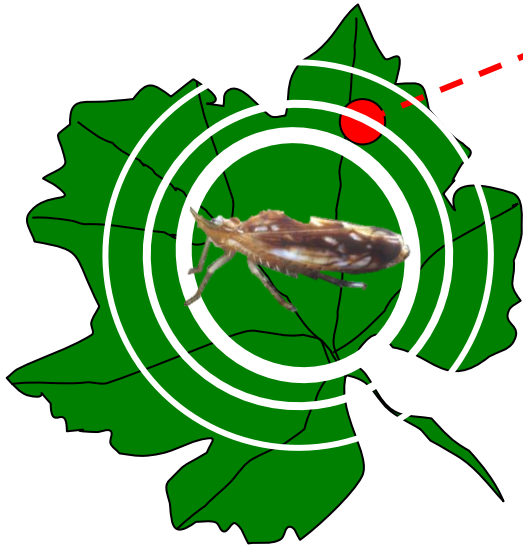


## Vine leafhoppers

(*Scaphoideus titanus*, *Empoasca vitis* etc.)

Natural pyrethrum

Vibrational Mating Disruption (Biotremology)





new sciences contribute to biocontrol



high expectations to develop smart pest control

1st International Symposium on Biotremology, 5-7 July 2016



About the conference

Studying Vibrational Communication – 1<sup>st</sup> International Symposium on Biotremology

[eventi.fmach.it/biotremology2016](http://eventi.fmach.it/biotremology2016)

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## Mites (*E. carpini*, *P. ulmi*)

NATURALIS microbial  
*Beauveria bassiana*  
(strain ATCC 74040)  
insect parasite fungus



Narrow range paraffinic oil



## Downy and Powdery mildew

*(Plasmopara viticola, Uncinula necator)*



### Heliocuire S Heliosoufre S



Pine tree extract with copper and sulphur fungicides prevent wash off and drifts reducing total applications and total input per season



### AQ10

*Ampelomyces quisqualis*

Powdery mildew hyperparasite fungus



### VITIKAPPA

Potassium hydrogen carbonate





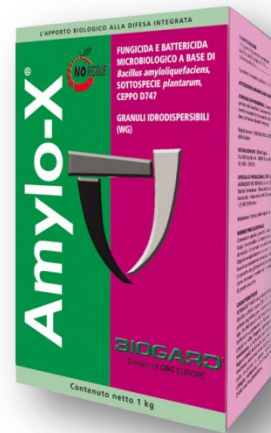
## Botrytis and Bunch Acid rots

*(Botrytis cinerea, several yeast and bacteria)*

### Amylo-X<sup>®</sup>

*Bacillus amyloliquefaciens subspecies plantarum*  
(strain D747)

Microbial bactericide and fungicide



**CERTIS USA**  
The Biopesticide Company





## **BIOGARD® fundamental beliefs**

### **Biological control products are:**

- **first products to select in IPM**
- **often preventive**
- **need to be applied first**
- **at the top for sustainability**
- **at the top for managing resistance**
- **at the top to avoid/reduce residue**
- **at the top for the low risk**
- **at the top for the low impact**

### **BIOGARD® look to innovation first**

**BIOGARD® team priority is  
to be EXPERT in BIOCONTROL**



# BIOGARD®

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THANKS FOR YOUR ATTENTION



CBC GROUP

