

Galanthus: the Greek resistance database

<http://en.galanthos.gr>



ELGO 'DEMETER'
Greece

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Consortium

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Team 2 (Insects): J. Vontas, E. Morou, (UOC) A. Tsagkarakou, E. Roidakis, E. Tzortzakakis (ELGO-DEMETER), J. Margaritopoulos, K. Boudouris (UoTh)

Team 3 (Fungi): G. Karaoglanidis (AUTH), F. Flouri and T. Malandrakis (AUA)

Team 4 (Weeds): H. Eleftherochorinos, N Katis (AUTH), D. Mosialos (UThe)

Galanthus was developed in the frame of a research project co-financed by the European Union (European Social Fund - ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: **THALES**: Investing in knowledge society through the European Social Fund.



European Union
European Social Fund



OPERATIONAL PROGRAMME
EDUCATION AND LIFELONG LEARNING
Investing in knowledge society
MINISTRY OF EDUCATION & RELIGIOUS AFFAIRS, CULTURE & SPORTS
MANAGING AUTHORITY
Co-financed by Greece and the European Union



NSRF
2007-2013
Programme for Development
EUROPEAN SOCIAL FUND

For the effective management of chemical control there is need for systematic storage of information in order to improve decision support tools for agricultural pest control



Efficacy of ketoenols on insecticide resistant field populations of two-spotted spider mite *Tetranychus urticae* and sweet potato whitefly *Bemisia tabaci* from Greece

Aris Ilias^{a,b,1}, Emmanouil Roditakis^{a,1}, Maria Grispu^a, Ralf Nauen^c, John Vontas^b, Anastasia Tsagkarakou^{a,*}

Molecular diagnostics for detecting pyrethroid and organophosphate resistance mutations in the Q biotype of the whitefly *Bemisia tabaci* (Hemiptera: Aleyrodidae)

Anastasia Tsagkarakou^{a,*}, Dimitra Nikou^{b,c}, Emmanouil Roditakis^a, Michal Sharvit^d, Shai Morin^d, John Vontas^{b,c,*}

Research Article

Received: 18 July 2008

Revised: 10 September 2008

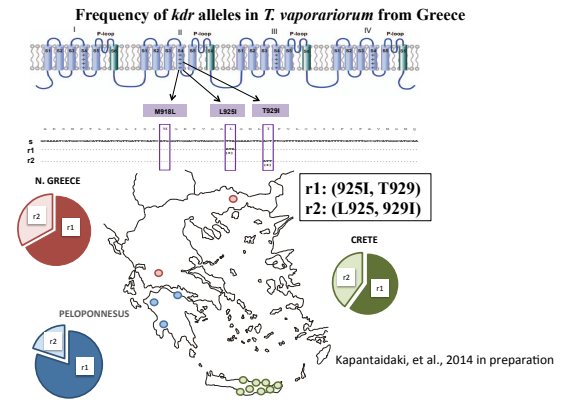
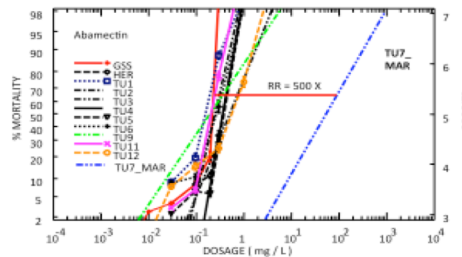
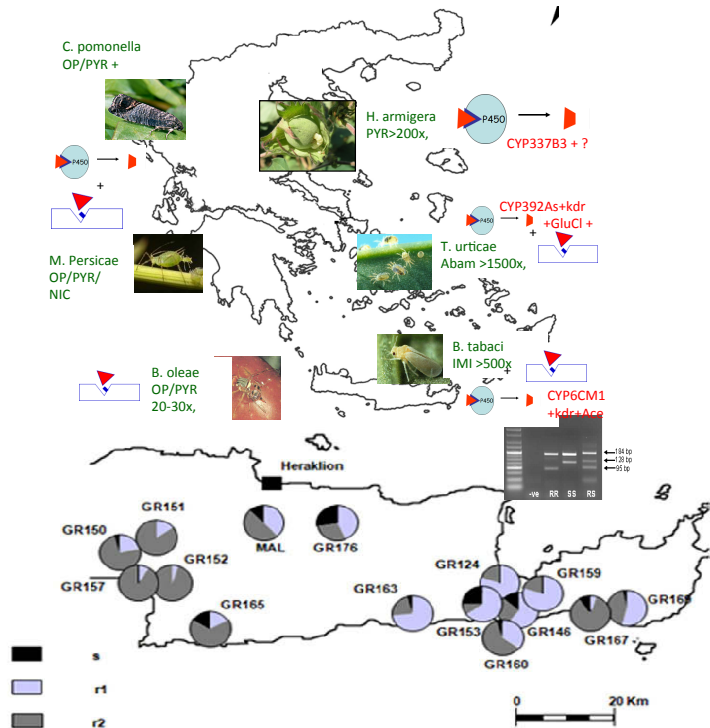
Accepted: 15 September 2008

Published online in Wiley InterScience:

(www.interscience.wiley.com) DOI 10.1002/ps.1690

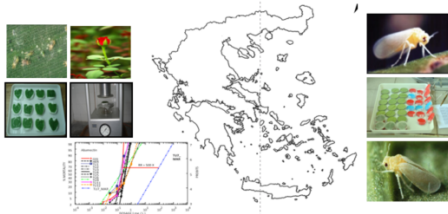
Current status of insecticide resistance in Q biotype *Bemisia tabaci* populations from Crete

Emmanouil Roditakis^{a,*}, Maria Grispu^a, Evangelia Morou^{b,c}, Jon Bent Kristoffersen^a, Nikos Roditakis^a, Ralf Nauen^d, John Vontas^b and Anastasia Tsagkarakou^a



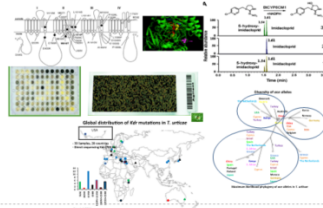
Characterization of Resistance to pesticides

1. Detection of resistant phenotypes (full dose or discriminating dose bioassays)

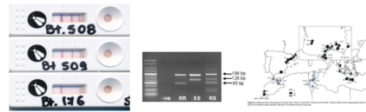


2. Molecular characterisation of resistance mechanisms

Identify and validate candidate genes associated with resistance



3. Development of molecular diagnostics for early, accurate and fast detection of resistance



Systematic storage of resistance data to support choice of control method and resistance management


“Galanthus”
A Greek resistance data base,

A screenshot of the Galanthus website. The header includes the logo and the text 'Γάλανθος - Galanthus A pesticide resistance database'. Below the header, there is a navigation menu with 'Home', 'Studies', and 'Contact Us'. A search bar is present on the right. The main content area features a map of Greece with several red dots indicating resistance locations. To the right of the map are search filters for 'Periphery or city', 'Commercial or substance', and 'Pest: Species or common'. Below the map, there is a 'Quick guide to the' section with links for 'Map Data' and 'Terms of Use'. At the bottom, there are sections for 'INFORMATION' (About the project, Publications, Terms of use, Privacy policy), 'DOCUMENTATION' (User Guide, Assay protocols), and a form to 'Tell us your opinion about Galanthus' with a 'Your email:' field. The footer contains logos for the European Union, NSRF, and other funding sources, along with the text 'Version 0.7.300514-dbv'.

“Galanthus”

GALANTHUS is an informatics system which has been developed and aims to support and enhance the management with chemicals of the main pests of Greek agriculture.

en | el Welcome | Login

 **Γάλανθος - Galanthus**
A pesticide resistance database

Home Studies Contact Us Search for results

You are here: Home > Welcome >

Welcome to the Greek Database of Pesticide Resistance .

>> Search filters

Periphery or city

Commercial or substance

Pest: species or common name

Search

Quick guide to the

Map Data Terms of Use

INFORMATION
About the project
Publications
Terms of use
Privacy policy

DOCUMENTATION
User Guide
Assay protocols

Tell us your opinion about Galanthus

Stay informed for any update in Galanthus

Your email:

Version 0.7.300514-dev

Galanthus (Amaryllidaceae), snowdrop. It was suggested that the mysterious magical herb moly that appears in Homer’s Odyssey is actually snowdrop. An active substance in snowdrop is called galantamine, which, as anticholinesterase, could have acted as an antidote to Circe’s poisons.



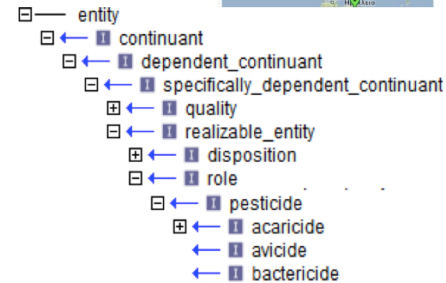


• Database schema: Chado.

• GIS-based : fine scale local focus database

• Ontology based : describes and connects data rational and efficient hierarchical search possibility

• A.P.R.O. Agricultural Pesticide Resistance Ontology: specialized ontology for plant health including active substances, resistance mechanisms, crops and all major pests (arthropods, nematodes, phytopathogenic fungi and weeds)



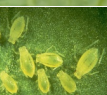
Bemisia tabaci



Trialeurodes vaporariorum



Myzus persicae



Tuta absoluta



Cydia pomonella



Helicoverpa armigera



Ceratitis capitata



Bactrocera oleae



T. urticae



Data on:

-Studies (publication details)

-Samples

-Geographical info

-Bioassays results

-Biochemical results

-Molecular diagnostics

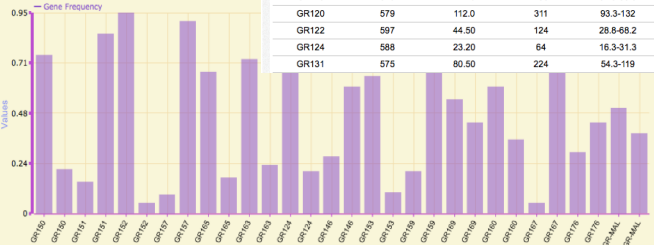
Home Studies Contact Us Search for results

You are here: Home > Studies in Greece > List > View Study

Current status of insecticide resistance in Q biotype Bemisia tabaci populations from Crete
 Authors: Rodiaki Emmanouil, Gispou Maria, Morou Evangelia, Kristoferson Jon, Rodiaki Nikos, Nawan Raif, Vontas John, Tsakarakou Anastasia
 Publication: Wiley Online Library, 2009, Volume 65, Issue 3, p. 313-322 (Online resource)
 Pests: Bemisia tabaci med, Bemisia tabaci
 Substances: imidacloprid, alpha-cypermethrin, pirimiphos-methyl

SAMPLE ID	TYPE	COLLECTION SITE	DATE	HOST PLANT or CROPP	FIELD
GR105	field sample	Municipality of Ierapetra (Stomio)	Jun 2005	Capsicum annuum	greenhouse
GR107	field sample	Municipality of Ierapetra (Biglia)	Jun 2005	Capsicum annuum	greenhouse
GR112	field sample	Municipality of Ierapetra (Koutsoura)	Jun 2005	Solanum melongena	greenhouse
GR124	field sample	Municipality of Ierapetra (Kamara)	Jul 2005	Cucumis sativus	greenhouse
GR131	field sample	Municipality of Ierapetra (Ierapetra)	Jul 2005	Solanum lycopersicum	greenhouse
GR122	field sample	Mesara Plain (Kokkinos Pyrgos)	Jul 2005	Cucumis melo	greenhouse
GR159	field sample	Municipality of Ierapetra (Ag Pnevma)	Jun 2006	Solanum lycopersicum	greenhouse

Molecular results (Gene Frequency)



View Results

POPULATION	n	LC50	RF	95%CL-LC50
Imidacloprid				
GR105	461	89.7	249	19.8-405
GR107	597	266.7	741	173-495
GR109	582	14.10	39	8.52-20.7
GR112	590	267.5	743	104-689
GR114	599	44.40	123	27.8-70.2
GR117	597	54.30	151	44.2-66.2
GR118	579	47.70	133	37.9-69.3
GR120	579	112.0	311	93.3-132
GR122	597	44.50	124	26.6-66.2
GR124	588	23.20	64	16.3-31.3
GR131	575	80.50	224	54.3-119

Galanthus

data entry

GALANTHUS Map Studies Results Contact Us en Profile

Dashboard Studies Collection sites Samples Bioassays Biochemical assays Molecular assays History Docs

Editing Study: A four-year survey on insecticide resistance and likelihood of chemical control failure for tomato leaf miner *Tuta absoluta* in the European/Asian region

Title	A four-year survey on insecticide resistance and likelihood of chemical control failure for tomato leaf miner <i>Tuta absoluta</i> in the European/Asian region *		
Type of study	journal *		
Publisher	Springer Berlin Heidelberg		
Series title	Journal of Pest Science		
Volume title			
Volume	91	Issue	1
Pages	421-435	Year	
Url	https://doi.org/10.1007/s10340-017-09		
Abstract	Tuta absoluta is an invasive destructive pest that is currently posing a major threat for tomato production worldwide. Insecticides are a key component of typical pest management.		
Submit to Curator Close Save			

[Authors](#) [Samples](#) [Bioassays](#) [Biochemical](#) [Molecular](#) [Ref.](#)

New Author

Emmanouil Roditakis
Emmanouil Vasakis
Lidia García-Vidal
María del Rosario Martínez
Jean Luc Rison
Marie Odile Haxaire
Ralf Nauen
Anastasia Tsagkarakou
Pablo Bielza

Display a menu

Galanthus

data entry

The screenshot displays the Galanthus data entry interface. At the top, there is a navigation bar with 'GALANTHUS', 'Map', 'Studies', 'Results', and 'Contact Us'. Below this is a secondary navigation bar with 'Dashboard', 'Studies', 'Collection sites', 'Samples', 'Bioassays', 'Biochemical assays', 'Molecular assays', 'History', and 'Docs'. The main content area is titled 'Sample Form' and contains the following fields:

- Type of sample: Please select *
- Alias: *
- Sample id: *
- Organism: Please select v *
- Parent strain: None
- It is used as reference:
- Collection month: - Year: -
- Collection site [New]: None
- Type of collection site: Please select
- Plant or crop: Please select v
- Collection method:
 - ✓ Please select
 - * collection by brush
 - * trap catch
 - [_ baited trap catch
 - [_ food baited trap catch
 - [_ outdoor food baited trap catch
 - [_ pheromone baited trap catch
 - [_ greenhouse pheromone baited trap catch
 - [_ outdoor pheromone baited trap catch
 - [_ cardboard shelter trap catch
 - [_ outdoor cardboard shelter trap catch
 - [_ outdoor cardboard shelter trap catch for larvae
 - [_ colour trap catch
 - [_ outdoor colour trap catch
 - [_ light trap catch
- Species identification method
- Form of species
- Biotype of species
- Notes

Galanthus

data entry

The screenshot displays the Galanthus data entry interface. At the top, there is a navigation bar with 'GALANTHUS' and various menu items like 'Map', 'Studies', 'Results', and 'Contact Us'. Below this is a secondary navigation bar with 'Dashboard', 'Studies', 'Collection sites', 'Samples', 'Bioassays', 'Biochemical assays', and 'Molecular assays'. The main content area is divided into three panels:

- Bioassay Form (Left):** Contains fields for 'Bioassay method' (insecticide efficacy test), 'Active ingredient' (Please select), 'Sample' (Please select), 'Active ingredient concentration', 'Concentration units' (Please select), 'Susceptible percentage mortality', 'Sample size', 'Sex of pests' (None), 'Stage of pests' (None), and a 'Notes' text area. 'Cancel' and 'Create' buttons are at the bottom.
- Ontology Tree Viewer (Middle):** Shows a hierarchical tree of bioassay methods:
 - + direct bioassay
 - + insecticide efficacy test
 - + time response test
 - + vial bioassay TR test
 - + immersion bioassay TR test
 - + leaf dip bioassay TR test
 - + topical bioassay TR test
 - + bottle bioassay TR test
 - + spray bioassay TR test
 - + in pasta bioassay TR test
 - + dose response test
 - + spore germination bioassay DR test
 - + shikimate leaf disc bioassay DR test
 - + detached leaf bioassay DR test
 - + bottle bioassay DR test
 - + topical bioassay DR test
 - + microtiter bioassay DR test
 - + petri dishes bioassay DR test
 - + whole plant spray bioassay DR test
 - + detached fruit bioassay DR test
- Bioassay Form (Right):** Shows the same form as the left panel, but with a dropdown menu open for the 'Sample' field. The menu lists various sample identifiers, with 'Please select' at the top. The list includes:
 - GR-Lab
 - ES-Sus
 - GR-ARV-12-1
 - GR-TYMP-12-2
 - GR-TYMP-14-1
 - GR-IER-14-1
 - GR-IER-14-2
 - GR-IER-14-3
 - GR-IER-15-3
 - GR-IER-15-2
 - GR-PEL-15-1
 - GR-TYMP-16-1
 - GR-TYMP-16-2
 - GR-TYMP-16-3
 - GR-DRAM-16-4
 - GR-PREV-16-5
 - GR-IER-16-6
 - IT-PATCH-14-1
 - IT-PATCH-14-2
 - IT-GELA-14-1
 - IT-ACAT-14-1
 - IT-RAG-15-1
 - IT-RAG-15-2
 - IT-MAR-15-1

Galanthus

data entry

GALANTHUS Map Studies Results Contact Us en

Dashboard Studies Collection sites Samples Bioassays Biochemical assays Molecular assays History Docs

Biochemical assay Form

Biochemical assay	Please select	v*
Active ingredient	Please select	v
Resistance mechanism	Please select	v*
Sample	Please select	↓*
Enzyme substrate	√ Please select	
Enzyme activity	* 7-Ethoxy-4-Trifluoromethylcoumarin	
Enzyme activity unit	* 7-Ethoxycoumarin	
Percentage s	* alpha-naphthyl acetate	
Percentage r1	* ATChI	
Percentage r2	* beta-naphthyl acetate	
Percentage r3	* CDNB	
Percentage r3	* cumene hydroperoxide	
Percentage sensitive	* DCNB	
Percentage insensitive	* DDTase activity	
Reference sample	* DTNB	
Notes	* ECOD	
	* Iodoethane	
	* MCB	
	* p-Nitrophenyl acetate	
	* potassium phosphate	
	* resorufin benzyl ether	
	* resorufin ethyl ether	
	* resorufin methyl ether	
	* resorufin pentyl ether	

Galanthus

data entry

The screenshot displays the Galanthus web application interface. At the top, there is a navigation bar with the following items: GALANTHUS, Map, Studies, Results, and Contact Us. Below this is a secondary navigation bar with: Dashboard, Studies, Collection sites, Samples (highlighted), Bioassays, Biochemical assays, Molecular assays, History, and Docs.

The main content area is divided into two panels:

- Molecular assay Form:** A form with several fields:
 - Molecular assay:** genotyping assay
 - Active ingredient:** Please select
 - Resistance mechanism:** Please select
 - Sample:** Please select
 - Gene mutation:** Please select
 - Resistance gene frequency:** (empty)
 - Percentage ss:** (empty)
 - Percentage rs:** (empty)
 - Percentage rr:** (empty)
 - Reference sample:** None
 - Notes:** (empty text area)At the bottom of the form are 'Cancel' and 'Create' buttons.
- Ontology Tree Viewer:** A tree view showing a hierarchy of assay types:
 - + genotyping assay
 - + genotyping by high throughput sequencing assay
 - + hybridization-based SNP genotyping assay
 - + genotyping by array assay
 - + dynamic allele-specific hybridization SNP genotyping assay
 - + comparative genomic hybridization by array assay
 - + enzyme-based SNP genotyping assay
 - + Single strand conformation polymorphism (SSCP)
 - + gene expression analysis
 - + RT-PCR assay
 - + RNA profiling
 - + Northern analysis
 - + Quantitative PCR for CYP6CY3 over-expression
 - + PCR-based assay
 - + sequencing assay
 - + RNA sequencing
 - + cDNA sequences comparison
 - + cpDNA sequence comparison
 - + RNA-seq assay
 - + DNA methylation profiling by high throughput sequencing assay
 - + DNA sequencing
 - + Edman degradation

Display a menu for "en.galanthos.gr/submitters/stock"

GALANTHUS Map Studies Results Contact Us en

Dashboard Studies Collection sites Samples Bioassays Biochemical assays Molecular assays History Docs

ID	Assay method				
612	SNP-RFLP genotyping assay				
613	SNP-RFLP genotyping assay				
614	SNP-RFLP genotyping assay				
615	SNP-RFLP genotyping assay				
616	SNP-RFLP genotyping assay			AChE	
617	SNP-RFLP genotyping assay			AChE	
618	SNP-RFLP genotyping assay			AChE	
619	SNP-RFLP genotyping assay		AChE modified resistance	AChE1	1.00

Molecular assay

Active ingredient

Resistance mechanism

Sample

Gene mutation

Resistance gene frequency

Percentage ss

Percentage rs

Percentage rr

Reference sample

Notes

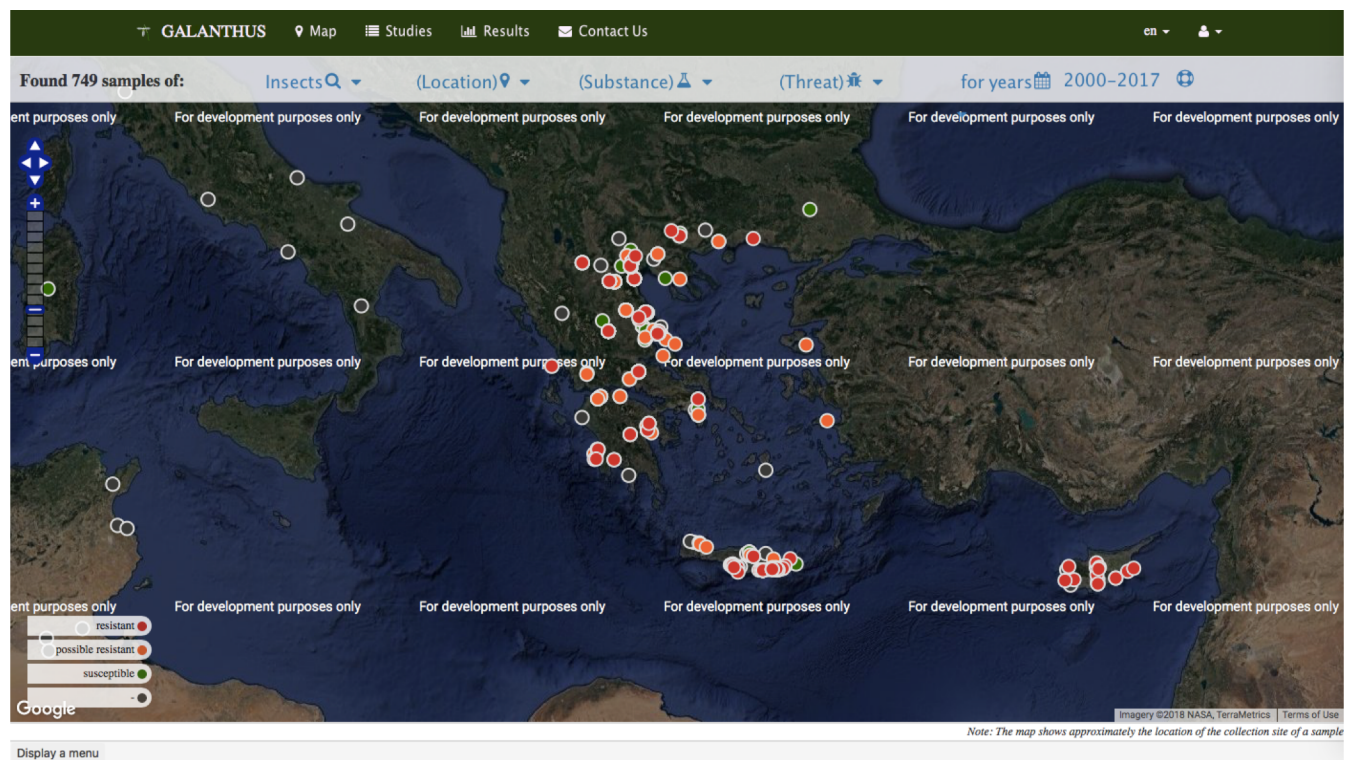
Ontology Tree Viewer

- + reduced target response resistance
 - + target site modification
 - + ChS1 mediated resistance
 - + GABA receptor mediated resistance
 - + midgut receptor mediated resistance
 - + beta-tubulin mediated resistance
 - + cytochrome b mediated resistance
 - + acetolactate synthase mediated resistance
 - + SDHB mediated resistance
 - + ACCase mediated resistance
 - + nicotinic receptor mediated resistance
 - + sodium channel mediated resistance
 - + **AChE modified resistance**
 - + EPSPS mediated resistance
 - + Erg27 mediated resistance
 - + glutamate-gated chloride channel mediated resistance
 - + histidine kinase mediated resistance
 - + target over-production
 - + alternative pathway
 - + loss of functional target
- + reduced target exposure resistance
 - + exclusion of the pesticide
 - + differential herbicide uptake resistance
 - + differential translocation resistance
 - + behavioural resistance
 - + cuticle permeability related resistance
 - + compartmentation resistance

Display a menu

Galanthus

The Greek resistance database



RF	Characterization	%M
<10 X	susceptible	>95%
10-30 X	Possible resistant	80-95%
> 30 X	resistant	<80%

Galanthus

data retrieval – view results

GALANTHUS
en

Map
Studies
Results
Contact Us

FILTER STUDIES

By research field -

- insecticide resistance
- fungicide resistance
- herbicide resistance
- nematocide resistance
- Show all

By periphery +

By publication period +

By location +

By substance +

By pest +

Search

Found 35 studies

Page 1 out of 1

<p>Efficacy of the pyrethroid alpha-cypermethrin against <i>Bactrocera oleae</i> populations from Greece, and improved diagnostic for an iAChE mutation</p> <p>Authors: John T. Margaritopoulos, George Skavdis, Nikos Kalogiannis, Dimitra Nikou, Evangelia Morou, Panagiotis J. Skouras, John A. Tsitsipis, John Vontas</p> <p>Publication: Pest Management Science, 2008, Volume 64, Issue 9, p. 900–908 ↗</p> <p>Pests: <i>Bactrocera oleae</i></p> <p>Substances: alpha-cypermethrin</p>	<p>023 Samples</p> <p>021 Bioassays</p> <p>043 Biochemicals</p> <p>002 Moleculars</p> <div style="background-color: #ffc107; border-radius: 10px; padding: 2px 10px; text-align: center; font-weight: bold; margin-top: 5px;">RESULTS</div>
<p>Insecticide resistance in <i>Bemisia tabaci</i> from Cyprus</p> <p>Authors: Vassilis Vassiliou, Maria Emmanouilidou, Andreas Perrakis, Evangelia Morou, John Vontas, Anastasia Tsagkarakou, Emmanouil Roditakis</p> <p>Publication: 2011, Volume 18, Issue 1, p. 30-39 ↗</p> <p>Pests: <i>Bemisia tabaci</i>, <i>Bemisia tabaci med</i></p> <p>Substances: imidacloprid, thiamethoxam, acetamiprid, bifenthrin</p>	<p>013 Samples</p> <p>037 Bioassays</p> <p>040 Biochemicals</p> <p>016 Moleculars</p> <div style="background-color: #ffc107; border-radius: 10px; padding: 2px 10px; text-align: center; font-weight: bold; margin-top: 5px;">RESULTS</div>
<p>Resistance-associated point mutations of organophosphate insensitive acetylcholinesterase, in the olive fruit fly <i>Bactrocera oleae</i></p> <p>Authors: J. G. Vontas, M. J. Hejazi, N. J. Hawkes, N. Cosmidis, M. Loukas, J. Hemingway</p> <p>Publication: Insect Molecular Biology, 2002, Volume 11, Issue 4, p. 329–336 ↗</p> <p>Pests: <i>Bactrocera oleae</i></p> <p>Substances:</p>	<p>003 Samples</p> <p>000 Bioassays</p> <p>003 Biochemicals</p> <p>006 Moleculars</p> <div style="background-color: #ffc107; border-radius: 10px; padding: 2px 10px; text-align: center; font-weight: bold; margin-top: 5px;">RESULTS</div>
<p>Incidence of insecticide resistance alleles in sexually-reproducing populations of the peach-potato aphid <i>Myzus persicae</i></p>	<p>010 Samples</p> <p>000 Bioassays</p>

Display a menu

Galanthus

data retrieval – view results

GALANTHUS Map Studies Results Contact Us en Us

Assay results

Filter assays

By research field

- insecticide resistance**
- fungicide resistance
- herbicide resistance
- nematocide resistance
- Show all

By location

Crete Periphery x

By substance

By pest

Bemisia tabaci x

Search

Bioassays (145) Biochemicals (99) Moleculars (27)

Substances: acetamiprid alpha-cypermethrin bifenthrin endosulfan imidacloprid pirimiphos-methyl pymetrozine spiromesifen thiacloprid

<input type="checkbox"/>	Active substance	Traits	Bioassays	Study
<input type="checkbox"/>	imidacloprid	LC50 , 95%CL-LC50 , RF	32	ID:19
<input type="checkbox"/>	alpha-cypermethrin	LC50 , 95%CL-LC50 , RF	23	ID:19
<input type="checkbox"/>	pirimiphos-methyl	LC50 , RF , 95%CL-LC50	17	ID:19
<input type="checkbox"/>	spiromesifen	LC50 , 95%CL-LC50 , LC95	11	ID:24
<input type="checkbox"/>	bifenthrin	LC50 , 95%CL-LC50 , RF	5	ID:61
<input type="checkbox"/>	alpha-cypermethrin	LC50 , RF , 95%CL-LC50	5	ID:61
<input type="checkbox"/>	pirimiphos-methyl	LC50 , RF , 95%CL-LC50	5	ID:61
<input type="checkbox"/>	endosulfan	LC50 , RF , 95%CL-LC50	4	ID:61
<input type="checkbox"/>	imidacloprid	LC50 , RF , 95%CL-LC50	4	ID:61
<input type="checkbox"/>	imidacloprid	LC50 , 95%CL-LC50 , RF	10	ID:69
<input type="checkbox"/>	acetamiprid	LC50 , 95%CL-LC50 , RF	10	ID:69
<input type="checkbox"/>	thiacloprid	LC50 , 95%CL-LC50 , RF	10	ID:69
<input type="checkbox"/>	pymetrozine	LC50 , 95%CL-LC50 , RF	9	ID:69

Display a menu for "en.galanthos.gr/search/results#"

Galanthus

data retrieval – view results

GALANTHUS
en

[View complete study](#)

Substances: imidacloprid

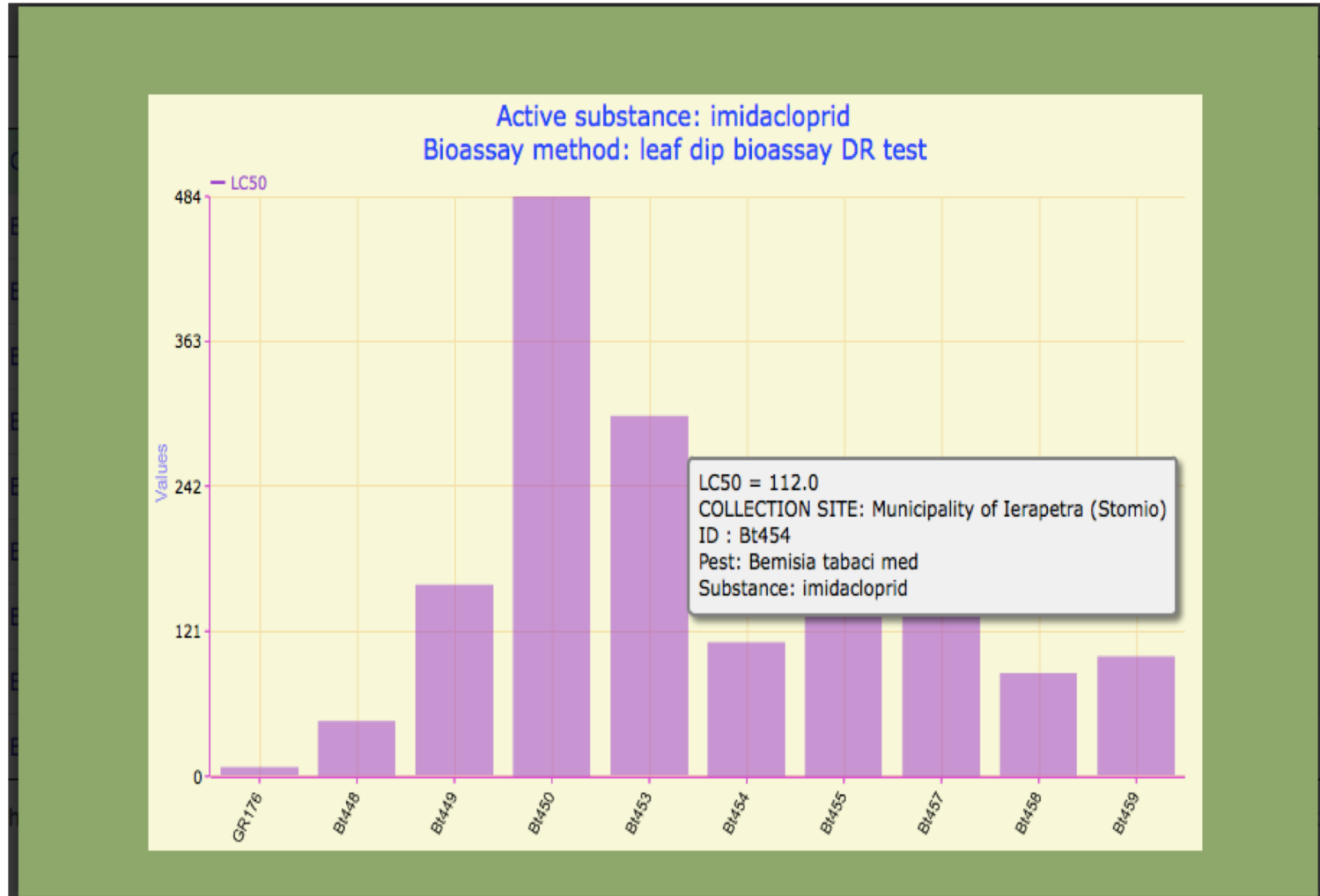
Show 25 entries Search:

Active ingredient: imidacloprid - Bioassay method: leaf dip bioassay DR test [\[chart\]](#)

POPULATION	YEAR	n	LC50	95%CL-LC50	RF
GR105	2005	461	89.7	19.8-405	249
GR107	2005	597	266.7	173-495	741
GR112	2005	590	267.5	104-689	743
GR124	2005	588	23.20	16.3-31.3	64
GR131	2005	575	80.50	54.3-119	224
GR122	2005	597	44.50	28.8-68.2	124
GR118	2005	579	47.70	37.9-59.3	133
GR117	2005	597	54.30	44.2-66.2	151
GR120	2005	579	112.0	93.3-132	311
GR153	2005	561	296.3	215-433	823
GR109	2005	582	14.10	8.52-20.7	39
GR114	2005	599	44.40	27.8-70.2	123
GR123	2005	520	16.6	12.4-22.0	46

Galanthus

data retrieval – view results



Summary number of assays in Galanthus (9/2018)

Resistance	N of studies	N of samples	Bioassays	Biochemical	Molecular
Insecticide	35	749	1603	308	727
Fungicides	16	57	122	0	38
Herbicides	15	132	271	185	98
Nematicides	1	18	36	0	0
TOTAL	67	956	2988	493	863

Case study: *Bemisia tabaci* – Crete



Has the whitefly *Bemisia tabaci* developed resistance to imidacloprid in Ierapetra (Crete) ?

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A pesticide resistance database

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Welcome to the Greek Database of **Pesticide Resistance** .

>> Search filters
Periphery or city
Εγκρίσεις
Commercial or substance
Pest: species or common name
Search

Quick guide to the map

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Ierapetra –Crete

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Welcome to the Greek Database of **Pesticide Resistance** .

Location: Municipality of Ierapetra (Achlia)
Pest: Bemisia tabaci med
View the results from [bioassays](#), [biochemical assays](#) or [molecular assays](#).
Search within [the periphery of 'Crete'](#) for [Bemisia tabaci med](#).

Cancel | Search

Found 19 bioassays, 45 biochemical assays.
[View List.](#)

Search

Quick guide to the map

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Results from classical and molecular diagnostics can be displayed in form of tables or graphs



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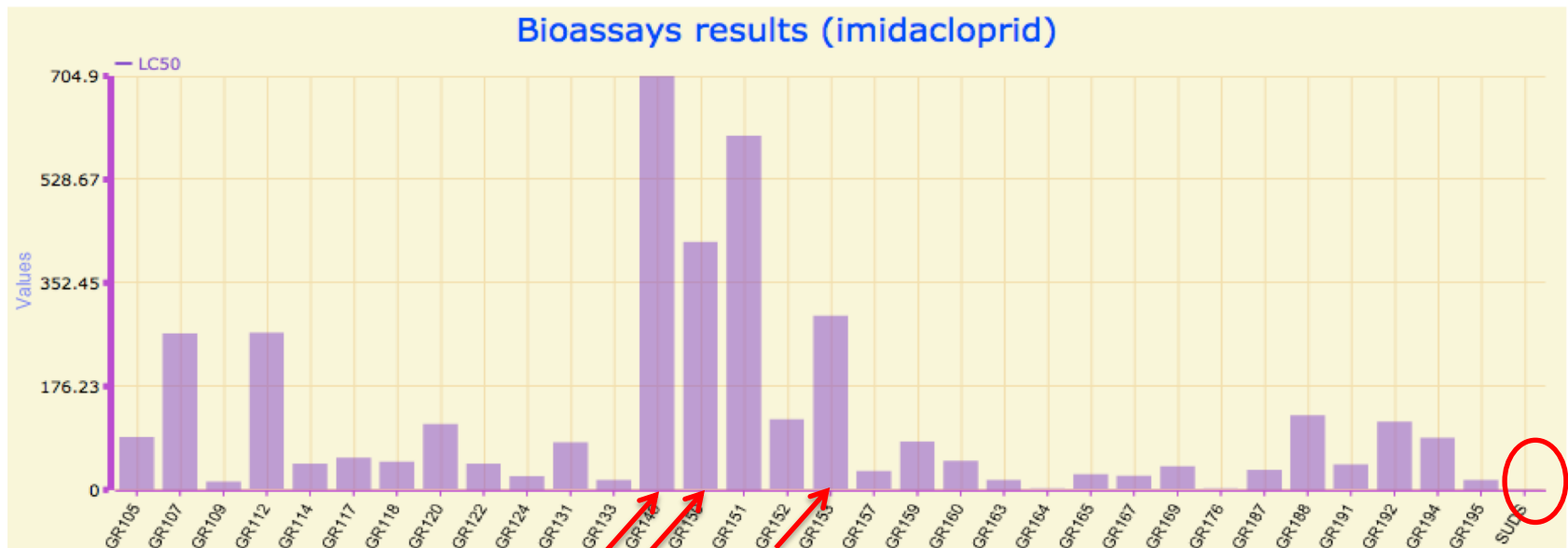
You are here: [Home](#) > [Studies in Greece](#) > View Results

View Results

View complete study

Table View

View Graphs



Some of the higher LC50s found in Ierapetra

Reference strain



**For real testing please visit our website:
<http://en.galanthos.gr>**

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- **On line, real time application to support optimal choice of management strategy**
- **Continuously add records of data from application of diagnostics to monitor current status of pesticide resistance in major pests**
- **Expand to more species**
- **Network to include data from other Mediterranean countries**

