

## Mission Statement

The primary objective of research at EBCL is to develop biological control approaches that can be used to regulate or control weeds and insect pests invasive in the United States. This is done by searching for natural enemies (insects, mites, and pathogens) in their native habitat, determining their identity, testing their host specificity and potential impact in laboratory and field experiments, and shipping promising organisms to the USA for further testing as biological control agents.

Biological control is an important component of Integrated Pest Management (IPM), which aims to develop safe, environmentally-sound pest management technologies that are practical, effective and economical, and which conserve non-renewable resources.

EBCL collaborates with scientists in many countries in Europe, Asia and Africa to explore in regions of origin of the target weeds and pests.

## EBCL Affiliation with Scientific Institutions

AGROPOLIS (a consortium of agricultural research institutions - France)

CABI (Center for Agriculture and Bioscience International – Switzerland, UK)

CGBP (Research Center for the Management and Biology of Populations - France)

CILBA (International Complex for Biological Control in Agropolis - France)

CIRAD (Agricultural Research Centre for International Development - France)

CSIRO (Commonwealth Scientific and Industrial Research Organization - Australia)

ENSAM (National Agricultural University in Montpellier)

INRA (National Institute for Agricultural Research – France)

IRD (Institute for Research and Development – France)

## History of EBCL

The European Biological Control Laboratory (EBCL) of the United States Department of Agriculture, Agricultural Research Service (USDA-ARS) was established during 1991 near Montpellier, France. This new laboratory was created from the merger of the former European Parasite Laboratory, established in Paris in 1919, and the Biological Control of Weeds Laboratory, established in Rome in 1958. EBCL has a satellite laboratory in Thessaloniki, Greece to facilitate exploration and field studies, including studies of disease vectors (mosquitoes, sandflies and ticks).



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# European Biological Control Laboratory

## Montferrier-sur-Lez France



## United States Department of Agriculture

## Agricultural Research Service



## Special Research Facilities

### Molecular Genetics Laboratory

This laboratory provides state-of-the-art molecular genetics for identifying species, deciphering cryptic species, and determining geographic origins of invasive populations, which is central for biological control programs.

### Microbiology Laboratory

Microbiology research is conducted to understand interspecific interactions between micro-organisms, target pests, and natural enemies.

### Chemical Ecology Laboratory

The combination of behavioral experiments and chemical analyses will help us better understand the ecology and host specificity of prospective biological control agents.

### Quarantine Laboratories

Two quarantines enable us to work with exotic organisms:

- P-2 laboratory and greenhouse is certified for insects
- P-3 laboratory is certified for plant pathogens



Both quarantines are authorized and regularly inspected by French authorities.

We follow CBD (*Convention on Biological Diversity*), ABS (*Access and Benefit Sharing*, Nagoya Protocol) and CITES (*Convention on International Trade in Endangered Species*) regulations, including obtaining the appropriate permits to collect, export, and import organisms from the countries involved.

## Biological Control of Insects

### Asian Longhorned Beetle

*Anoplophora glabripennis*

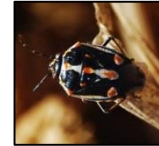
Exploration for egg parasitoids in East Asia



### Bagrada Bug

*Bagrada hilaris*

Exploration for egg parasitoids in S. Africa & Near East



### Brown Marmorated Stink Bug

*Halyomorpha halys*

Exploration for egg parasitoids in East Asia



### Cattle Fever Tick

*Rhipicephalus annulatus*

Exploration for agents in Balkans and Southern Asia



### Olive Fruit Fly

*Bactrocera oleae*

Mass rearing & shipment of parasitoids; Ecology of pathogens



### Olive Psyllid

*Euphyllura olivina*

Collection of parasitoids in Southern Europe



## Integrated Management of Vectors

**Mosquitoes:** (*Aedes*, *Anopheles*, *Culex* spp.)

West Nile Virus, Chikungunya, Dengue, & Zika

**Sand flies:** (*Phlebotomus* spp.)

Leishmaniasis

Taxonomy, biology, evaluation of traps and insecticides

## Biological Control of Weeds

### African wire grass

*Ventenata dubia*

Exploration for agents in Europe



### French broom

*Genista monspessulana*

Testing host specificity of agents



### Giant reed

*Arundo donax*

Collection and shipment of agents



### Medusahead

*Taeniatherum caput-medusae*

Exploration for agents in Eurasia



### Sahara mustard

*Brassica tournefortii*

Exploration for agents in Europe, N. Africa, Asia



### White top / hoary cress

*Lepidium draba*

Studying insect-plant-microbial interactions



## Equal Opportunity Employer

EBCL has an active competitive sabbatical program for which USDA ARS scientists in the US may apply. EBCL also provides research opportunities for local graduate students, both masters and PhD levels.