

# COEXPHAL

**Centre name :** COEXPHAL, Association of producers and exporters of horticultural products from Almeria

City : ALMERIA

Country: SPAIN

Telephone: +34

Website: [www.coexphal.es](http://www.coexphal.es)

Facebook page:

Name of the contact person: Jan van der Blom

Position: Coord. Dpt. Production Techniques

Email: [jvdblom@coexphal.es](mailto:jvdblom@coexphal.es)

The Association of producers and exporters of horticultural products from Almeria, **COEXPHAL**, is a service organisation with 70 associated companies and 61 employees. The members are horticultural cooperatives and auctions that, in total, commercialise about 65% of the total fruits and vegetable production in Almeria. The services supplied by COEXPHAL include: Representation of the sector at all levels; consulting with respect to legal issues and subsidy acquisition; organisation of (temporal) labour; safety at work; training for growers, workers and field advisors. Moreover, COEXPHAL is a Centre of Research and Technology (C.I.T.) recognised by the Spanish authority and Office for the Transference of Research Results (O.T.R.I.).

## Laboratory

Since 1988, COEXPHAL run a laboratory dedicated to the analysis of pesticide residues on fruits and vegetables; nutrients in soil and leaf samples; microbiological contaminations and phytopathology. This laboratory is fully accredited.

The Dept. of Production Techniques is situated in the laboratory. Their main attention of is focussed on the implementation of IPM in the different greenhouse crops. This Dpt. has had an important role in the massive implementation of biological control techniques from 2006 onwards, in several ways:

- Research projects. E.g. the development and registration of a microbiological insecticide (Baculovirus) against *Spodoptera exigua* (Lepidoptera, Noctuidae), a pest that represented an important bottleneck for IPM in sweet pepper crops;
- Training programs and courses. Within one year, over 1.000 growers attended the 20 hours courses on biological pest control and many more participated in study days organised on the same subject in the associated cooperatives.
- Information campaigns on biological pest control through the monthly magazine 'Almería en Verde', as well as through a radio station that was managed by COEXPHAL.
- Direct field advisory in greenhouses that served as examples to gain experience in cooperatives.
- A book was written by the technicians of COEXPHAL on biological pest control: *Control biológico en invernaderos* (Robledo et al., 2009).

This Dept. coordinates a commission of field technicians of the associated producing companies, where the state of art of pest control, as well as the coming moment to moment problems, is discussed. This commission also coordinates field trials in the Experimental Station of the CAJAMAR foundation, a research facility which is entirely dedicated to horticulture.

COEXPHAL represents the horticultural sector in Almeria towards official authorities concerning: pesticide use and registration; pesticide residues; quarantine organisms entering into Spain from elsewhere; pests present in Spain that are considered as quarantine organisms elsewhere.

## Current main technical interests of COEXPHAL

The interest of COEXPHAL is focused on sustainability in both greenhouse crops (tomato, sweet pepper, cucumber, zucchini (courgette), aubergine, melon, watermelon, green beans) and open air vegetable crops, like lettuce. Our priorities concern in particular:

- Integrated pest- and disease management;
- Optimisation of the use of water and fertilisers;
- Residue management.

**Pests:** Almeria has progressed enormously towards IPM strategies through the massive implementation of biological pest control after 2006. However, this development has slowed down in the last years. Again, there are more and more pests, some of them invasive, that have recently become important and against which there is no biological solution available. Summarizing very briefly, we can discriminate between:

- Pests that are currently rather well biologically controlled: whitefly *Bemisia tabaci*, thrips, leaf miner (Liriomyza)
- **Pests that need attention:**
  1. Aphids,
  2. Lepidopteran pests (*Tuta absoluta*),
  3. *Pseudococcidae*,
  4. Several phytophagous bugs (Miridae, Lygidae, Pentatomidae),
  5. Several mite pests (*Aculops lycopersici*; *Tetranychus spp.*),
  6. **Nematodes** in soil
- **Fungal diseases.** Integrated Pest Management, until now, has mainly been focused on insect and mite pests, but there remains a lot to do against fungal plant diseases (*Oidium*, *Botrytis*, *Phytophthora*, etc.). It is more and more important to develop techniques to replace the massive applications of fungicides, which now represent more than 70% of the detected pesticide residues on fruits and vegetables.
- **Residue recycling.** Although there has been very important progress with respect to residue management, special attention has to be paid to the processing of plant residues. An important problem is that it is not easy to collect 'clean' residues, since there is almost always a contamination with plastics, mainly the due to plastic wires used to guide the plants. Currently, there is no important market for plant compost.
- **Water and fertilizer use.** Although the greenhouse horticulture, with localized drip irrigation, makes a far more efficient use of water and fertilizers than most of the other agricultural productions, it is estimated that a further 25-30% of water could be spared, as well as a similar or even higher percentage of fertilizers. The latter factor is vital in order to meet the European legislation with respect to nitrogen use, which is still a challenge for horticulture in all Mediterranean countries. Solutions should be sought in the implementation of measuring techniques of the actual plant requirements and lixiviation and in a better training of the farmers with respect to basic plant physiology.
- **Innovations of crop systems in general.** Horticulture in Almeria has started with very simple greenhouse structures and, relatively low yields per Ha. Nevertheless, the basic conditions have changed: soil availability has become a limited and the soil prices have become higher. Labour is much more expensive, as well as all input products. This means that, in order to survive, an important increase in production has to be achieved on the same surface and with the same hand

labour. Therefore, new techniques have to be adopted, e.g. with respect to climate management, heating with sustainable energy.

### **Responsible persons for production related issues within COEXPHAL**

**Dr. Jan van der Blom (JvdB)** is the coordinator of the Dpt. of Production Techniques. The main attention of this Dpt. is focussed on the implementation of IPM in the different greenhouse crops. Dr. van der Blom is a recognized entomologist and has been a pioneer establishing biological control as alternative to chemical pest control in the study area. Since 1993, his research has been focused on IPM strategies in horticultural crops. He has excellent links with the scientific community working on IPM, both at national and international level. Among other activities, he is vocal of the board of direction of the SEEA (Spanish of Applied Entomology Society). This bridge between the horticultural production sector and the scientific institutes, guarantees the best information flow between growers in practice and academic researchers.

**Dra. M<sup>a</sup> Antonia Elorrieta (MAE)** is in charge of the phytopathology department of COEXPHAL since 2002. Previously, she worked seven years at Almeria University as a lecturer and microbiology/phytopathology researcher. She has established and defined all protocols needed to determine the main fungal, bacterial and viral horticultural diseases. She has participated in several research projects, public and private, which goal is the study and development of environmental strategies for disease management that are economically feasible for growers. She collaborates with I+D departments of International Seeds Companies to expand the understanding of virus diseases of vegetables in order to develop sustainable control strategies and enhance production, as well as another companies interested in develop a more friendly crops systems. She will coordinate Task 6. A pre-requisite for this is the availability of adequate facilities and skilled labour to achieve reliable results. Essential also is familiarity with symptomatology and virus diagnostic methodology.

### **Participation in European projects:**

- **'Bioprotect'** (Jan van der Blom). Development of an environmentally friendly protection of sweet pepper and strawberry. (CRAFT-1999-70484). As head of the R&D Dpt. of Koppert (Spain), Jan van der Blom, in close contact with project coordinator Shimon Steinberg, has had an important contribution in the elaboration of the project proposal and, in the coordination of the activities of the different involved entities in Spain.
- **'Euromite' (COEXPHAL)**. Development of an economic rearing and transport system for an arid adapted strain of the predatory mite *Neoseiulus californicus* for spider mite control (FW6, CRAFT, 508090). Attending project meetings, responsible for COEXPHAL contribution.
- **'Greenergy' (COEXPHAL)**. Optimisation of energy use in greenhouses (Collective Research-CT-2005-012566). Attending all project meetings, responsible for execution of the COEXPHAL contribution. One of the project meetings was organised by COEXPHAL, together with the University of Almeria.

## The research programs of your centre

### Specie : Integrated Pest Management of greenhouse crops

Person of contact for this program: Jan van der Blom

Email : jvdblom@coexphal.es

Vegetal material	Technical itinerary	Integrated protection	Agrobiology	Other subjects
Greenhouse crops		COEXPHAL has had an important role in the massive implementation of biological control in greenhouses in Almeria after 2006. Through research projects; organisation of courses and study days; field advisory, etc. A book was written by the technicians of COEXPHAL : <i>Biological Control in Greenhouses</i>	X	

### Specie : Phytopathology

Person of contact for this program: María Antonia Elorrieta Jove

Email : mariaantonia@coexphal.es

Vegetal material	Technical itinerary	Integrated protection	Agrobiology	Other subjects
Greenhouse crops	The main activity of the Phytopathology Dept. consists of diagnostics by means of all modern techniques.	The Dept. has participated in a large number of research projects with different institutes. X		

### Specie : Pesticide residue analysis on fruits and vegetables

Person of contact for this program: Marta Vargas

Email : marta@coexphal.es

Vegetal material	Technical itinerary	Integrated protection	Agrobiology	Other subjects
Greenhouse crops	Since 1988, COEXPHAL has its own, fully accredited, reference laboratory for analysis of pesticide residues on fruits and vegetables.			

### Specie: Microbiological contaminations

Person of contact for this program: Catherine Jaquin

Email : Catherine Jacquin [cjn@coexphal.es]

Vegetal material	Technical itinerary	Integrated protection	Agrobiology	Other subjects
------------------	---------------------	-----------------------	-------------	----------------

	<p>Analysis of microbiological contaminants on fruits and vegetables, industrious installations, by means of all modern techniques.</p>			
--	---	--	--	--

## Current partnership with other research centers (national or international)

Specie:

Nature of the project: Pest management; Phytopathology; Optimization of resources for Irrigation (water and fertilizers);

Length of the project: continuous

Partner names and countries: Experimental Station CAJAMAR Foundation, Almeria (SPAIN); University of Almeria (SPAIN); IFAPA, Almeria (SPAIN)

Although COEXPHAL has participated in several European projects, at this moment COEXPHAL is not involved in any on-going European projects directed to production techniques.

Participation in EU projects in the past:

- 'Euromite'. Development of an economic rearing and transport system for an arid adapted strain of the predatory mite *Neoseiulus californicus* for spider mite control (FW6, CRAFT, proposal 508090)
- 'Greenergy'. Optimisation of energy use in greenhouses (Collective Research-CT-2005-012566: )

## Are you searching for more European partnerships with other research centers?

On what species: Greenhouse Horticulture

What kind of projects are you searching for: Pest and disease management; Optimization of water and fertiliser use; Recycling of horticultural residues; Improvement of greenhouse structures; Sustainable energy use.

What kind of partners are you searching for?

Applied and fundamental research institutes concentrated on greenhouse horticulture

From which countries?

Mediterranean Countries, all European countries with important greenhouse industries.