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TSR Researcher

Personal Information



Position: TSR Researcher

Area of Expertise: Entomology

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University degrees

- Technical Engineer (Graduate in Agronomy), "Escuela Universitaria de Ingeniería Técnica Agrícola de Lleida". Polytechnic University of Catalonia (UPC), 1986
- Agronomist. ETSEA of Lleida. UPC, 1992
- Ph.D. in Agronomy, ETSEA of Lleida. UPC, 1998

Previous activities

- Technical Engineer in a Plant Defense Association. 1987-1988
- Research Collaborator. IRTA 1992-1999
- PQS (Qualified Staff to support research). University of Lleida 1999-current

Recent Publications

Insects & Bt maize

López C, Zanga D, Juárez-Escario A, Muñoz P, Eizaguirre M. Parental effects of Bt toxin and vitamin A on *Helicoverpa armigera*. PLoS One. **2022** Jul 6;17(7):e0269585.



López, C.; Muñoz, P.; Zanga, D.; Girón-Calva, P.S.; Eizaguirre, M. Fitness Costs of Two Maize Lepidopteran Pests Fed on *Bacillus thuringiensis* (Bt) Diets Enriched with Vitamins A and C. *Insects* **2021**, *12*, 718. [https://doi.org/ \[https://doi.org/ \]10.3390/insects12080718](https://doi.org/10.3390/insects12080718)

Sarai Giron-Calva, Patricia; Lopez, Carmen; Albacete, Alfonso; Albajes, Ramon; Christou, Paul; Eizaguirre, Matilde. **2021**. Beta-carotene and *Bacillus thuringiensis* insecticidal protein differentially modulate feeding behaviour, mortality and physiology of European corn borer (*Ostrinia nubilalis*). PLOS ONE 16 (2): e0246696 DOI 10.1371/journal.pone.0246696

Zhu, C., Farre, G.; Zanga, D.; Lloveras, J.; Michelena, A.; Ferrio, J. P.; Voltas, J.; Slafer, G.; Savin, R.; Albajes, R.; Eizaguirre, M.; Lopez, C.; Cantero-Martinez, C.; Diaz-Gomez, J.; Nogareda, C.; Moreno, J. A.; Angulo, E.; Estany, J.; Pena, R. N.; Tor, M.; Portero-Otin, M.; Eritja, N.; Arjo, G.; Serrano, J. C. E.; Matias-Guiu, X.; Twyman, R. M.; Sandmann, G.; Capell, T.; Christou, P. **2018**. High-carotenoid maize: development of plant biotechnology prototypes for human and animal health and nutrition. Phytochemistry Reviews 17 (2): 195-209. DOI 10.1007/s11101-017-9506-4

Zanga, Daniela; Sanahuja, Georgina; Eizaguirre, Matilde; Albajes, Ramon; Christou, Paul; Capell, Teresa; Fraser, Paul; Gerrisch, Chris; Lopez, Carmen. **2018**. Carotenoids moderate the effectiveness of a Bt gene against the European corn borer, *Ostrinia nubilalis*. PLOS ONE 13 (7): e0199317. DOI 10.1371/journal.pone.0199317

Lopez, C.; Munoz, P.; Perez-Hedo, M.; Moralejo, M.; Eizaguirre, M. **2017**. How do caterpillars cope with xenobiotics? The case of *Mythimna unipuncta*, a species with low susceptibility to Bt. Annals of Applied Biology 171: 364-375. DOI 10.1111/aab.12380

Munoz, Pilar; Lopez, Carmen; Moralejo, Marian; Perez-Hedo, Meritxell; Eizaguirre, Matilde. **2014**. Response of Last Instar *Helicoverpa armigera* Larvae to Bt Toxin Ingestion: Changes in the Development and in the CYP6AE14, CYP6B2 and CYP9A12 Gene Expression. PLOS ONE 9 (6): e99229. DOI 10.1371/journal.pone.0099229

Lopez, Carmen; Hernandez-Escareno, Gerardo; Eizaguirre, Matilde; Albajes, Ramon. **2013**. Antixenosis and larval and adult dispersal in the Mediterranean corn borer, *Sesamia nonagrioides*, in relation to Bt maize. Entomologia Experimentalis et Applicata 149 (3): 256-264 DOI 10.1111/eea.12131

Perez-Hedo, Meritxell; Reiter, Daniel; Lopez, Carmen; Eizaguirre, Matilde. **2013**. Processing of the maize Bt toxin in the gut of *Mythimna unipuncta* caterpillars. Entomologia Experimentalis et Applicata 148 (1):56-64 DOI 10.1111/eea.12074

Perez-Hedo, M.; Lopez, C.; Albajes, R.; Eizaguirre, M. **2012**. Low susceptibility of non-target Lepidopteran maize pests to the Bt protein Cry1Ab. Bulletin of Entomological Research 102 (6): 737-743. DOI 10.1017/S0007485312000351

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Matilde Eizaguirre, Ramon Albajes, Carmen López, Jordi Eras, Belen Lumbierres, Xavier Pons. **2006**. Six years after the commercial introduction of Bt maize in Spain: field evaluation, impact and future prospects. Transgenic Research 15:1-12

Eizaguirre M, Albajes R, López C, Eras J, Baraibar B, Lumbierres B, Pons X. **2005**. Transgenic Bt maize: main results of a six year study on non target effects IOBC/WPRS Bull 28: 47-53. Xavier Pons, Belen Lumbierres, Carmen López, Ramon Albajes. **2005**. Abundance of non-target pests in



transgenic Bt-maize: A farm scale study. *European Journal Entomology* 102: 73-79
Eizaguirre M, López C, Albajes R. **2005**. Sublethal effects of *Bacillus thuringiensis* on larval development in *Sesamia nonagrioides* *Journal of Economic Entomology* 98 : 237-247.

Poza, M. de la, Pons, X., P. Farinós, G.P., López, C., Ortego, F., Eizaguirre, M., Castañera, P., Albajes, R. **2005**. Impact of farm-scale Bt maize on abundance of predatory arthropods in Spain. *Crop Protection* 24:677-684.

Pons, X., Lumbierres, X., López, C., Albajes, R. **2004**. No effects of Bt maize on the development of *Orius majusculus*. *IOBC/WPRS Bulletin* 27(3): 131-136.

Forest pests

López, C.; Las Heras, S.; Garrido-Jurado, I.; Quesada-Moraga, E.; Eizaguirre, M. Survey of Natural Enemies of the Invasive Boxwood Moth *Cydalima perspectalis* in Southwestern Mediterranean Europe and Biocontrol Potential of a Native *Beauveria bassiana* (Bals.-Criv.) Vuill. Strain. *Insects* **2022**, 13, 781. <https://doi.org/10.3390/insects13090781>

Boukouvala, M.C.; Kavallieratos, N.G.; Skourti, A.; Pons, X.; Alonso, C.L.; Eizaguirre, M.; Fernandez, E.B.; Solera, E.D.; Fita, S.; Bohinc, T.; et al. *Lymantria dispar* (L.) (Lepidoptera: Erebidæ): Current Status of Biology, Ecology, and Management in Europe with Notes from North America. *Insects* **2022**, 13, 854. <https://doi.org/10.3390/insects13090854>

Eizaguirre, M., López, C.; Las Heras, S.; Cambio climático y biología de la polilla del boj, *Cydalima Perspectalis*. *PHYTOMA España* / Nº 322 / Octubre **2020**

Lopez, Carmen; Eizaguirre, Matilde. **2019**. Diapause and biological cycle of *Cydalima perspectalis* (Walker) in the eastern Pyrenees. 2019. *Journal of Applied Entomology* 143:1096–1104. DOI 10.1111/jen.12709

Pheromone

Lopez-Alonso, M. Eizaguirre, R. Albajes. **2011**. Short communication. Mutual pheromone antagonism in two sympatric corn borers, *Sesamia nonagrioides* and *Ostrinia nubilalis*, under field conditions. *Spanish Journal of Agricultural Research*, 9

López, A. Ardanuy, M. Eizaguirre, R. Albajes. **2011**. Pheromone antagonism in lepidopteran maize pests. *IOBC/WPRS Bulletin* 72:105-111

Eizaguirre, M., Albajes, R., López, C., Sans, A., Gemenó, C. **2007**. Inhibition of pheromone response in *Sesamia nonagrioides* by the pheromone of the sympatric corn borer, *Ostrinia nubilalis*. *Pest Management Science* 63: 608-614

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Sans, A.; Riba, M.; Eizaguirre, M.; López, C. **1997** Electroantennogram, wind tunnel and field responses of male Mediterranean corn borer, *Sesamia nonagrioides*, to several blends of its sex pheromone components. *Entomologia Experimentalis et Applicata* 82, 121-127

Diapause:



- Schafellner C, Eizaguirre M, López C, Sehna F. **2008**. Juvenile hormone esterase activity in the pupating and diapausing larvae of *Sesamia nonagrioides*. *Journal of Insect Physiology* 54(6):916-921
- Eizaguirre M, López C, Albajes, R. C. **2008**. Factors affecting the natural duration of diapause and post-diapause development in the Mediterranean corn borer *Sesamia nonagrioides* (Lepidoptera: Noctuidae). *Journal of Insect Physiology* 54(6):1057-1063
- Eizaguirre M., López C, Schafellner, Sehna, F. **2007**. Effects of ecdysteroid agonist RH-2485 reveal interactions between ecdysteroids and juvenile hormones in the development of *Sesamia nonagrioides*. *Archives of Insect Biochemistry and Physiology* 65: 74-84
- Matilde Eizaguirre, Christa Schafellner, Carmen López, Frantisek Sehna. **2005**. Relationship between an increase of juvenile hormone titer in early instars and the induction of diapause in fully grown larvae of *Sesamia nonagrioides*. *Journal of Insect Physiology* 51: 1127-1134
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- López, C., Eizaguirre, M., Albajes, R. **1995**. Diapause detection and monitoring in the Mediterranean corn stalk borer. *Physiological Entomology* 20, 330-336
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Insect Dispersal

- Lopez, Carmen; Hernandez-Escareno, Gerardo; Eizaguirre, Matilde; Albajes, Ramon. **2013**. Antixenosis and larval and adult dispersal in the Mediterranean corn borer, *Sesamia nonagrioides*, in relation to Bt maize. *Entomologia Experimentalis et Applicata* 149 (3): 256-264 DOI 10.1111/eea.12131
- Eizaguirre, M., López, C., Albajes, R. **2004**. Dispersal capacity in the Mediterranean corn borer, *Sesamia nonagrioides* (Lepidoptera: Noctuidae). *Entomologia Experimentalis et Applicata* 113: 25-34
- Albajes R, Eras J, López C, Ferran X, Vigatà J, Eizaguirre M. **2004**. Testing rubidium marking for measuring adult dispersal of the corn borer *Sesamia nonagrioides*: first IOBC/WPRS Bulletin 27: 15-22.

More info (Consultes GREC [
<http://webgrec.udl.cat/cgi-bin/DADREC/crgen.cgi?FONT=3&IDI=CAT&PID=367567&IDNC=201210161350170>])