PERSONAL INFORMATION

Emilio GIL

WORK EXPERIENCE

• Dates (from 1988 and currently)	1988 - Currently
• Name and address of employer	**Universitat Politècnica de Catalunya - UPC**
• Type of business or sector	Higher Education and Research
• Occupation or position held	Full Professor
• Main activities and responsibilities	Head of Agricultural Machinery Unit (www.uma.deab.upc.edu) – Head of UMA research group (2021 SGR 240 – Generalitat de Catalunya President of FIMA International board for new technologies award Director of Chari Syngenta-UPC (www.catedrasyngenta.upc.edu) Director of the Official training courses for PAE inspectors in Spain Vice Director of International Relationships (2000-2005) Vice Director of Organization and Economic Resources (1997-2000) Director International Master Viticulture UPC-Universitá degli Studi Sassari (Italy) – 2001-2003. Visiting professor at Cornell University (USA) – 2005-2006 Director of Office of Aragon Government in Brussels (February-November 2016) Member of Royal European Academy of Doctors (*https://raed.academy*) Associated Editor of Precision Agriculture Associate Editor of Journal of ASABE Member of PhD program at University of Turin Member of PhD program coordination at UPC Advisor of Ministry of Agriculture for implementation of Agriculture 4.0

EDUCATION AND TRAINING

• Dates (2001)	**2001**
• Name and type of organization	Escola Técnica Superior d' Enignyers Agrònoms de Lleida – Universitat de Lleida
• Principal subjects/occupational skills covered	Thesis dissertation: "Metodología y criterios para la selección y utilización de equipos de aplicación de fitosanitarios para la viña
• Title of qualification awarded	**PhD degree** - Excelent Cum Laude
• Dates (1983-1986)	**1983 - 1986**
• Name and type of organization	Escola Técnica Superior d' Enignyers Agrònoms de Lleida – Universitat de Lleida
• Principal subjects/occupational skills covered	**Agricultural Engineer**
• Title of qualification awarded	Master degree: Agricultural Engineer
• Dates (1980-1983)	**1980-1983**
• Name and type of organization	Escola Superior d'Agricultura de Barcelona - ESAB
• Principal subjects/occupational skills covered	Technical Agricultural Engineer
• Title of qualification awarded	Bachelor diploma: **Technical Agricultural Engineer**

PERSONAL SKILLS

MOTHER TONGUE | **SPANISH**

OTHER LANGUAGES

	ENGLISH	FRENCH	ITALIAN	CATALAN
• Reading skills	PROFICIENT USER	INDEPENDENT USER	INDEPENDENT USER	PROFICIENT USER
• Writing skills	PROFICIENT USER	INDEPENDENT USER	INDEPENDENT USER	INDEPENDENT USER
• Verbal skills	PROFICIENT USER	INDEPENDENT USER	INDEPENDENT USER	PROFICIENT USER

ENGLISH HAS BEEN USED AT PROFESSIONAL LEVEL FROM MORE THAT 20 YEARS (LECTURES, CONFERENCES, INTERNATIONAL PUBLICATIONS…

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

COMMUNICATION SKILLS

COMMUNICATION SKILLS ARE WIDELY COVERED AFTER 34 YEARS AS PROFESSOR AT UNIVERSITY. MORE THAN 10.000 LECTURES HAVE BEEN GIVEN. LARGE LIST OF CONFERENCES ALL AROUND THE WORLD DEMONSTRATED GOOD CAPABILITIES IN COMMUNICATION.

MANAGERIAL SKILLS

DIRECTOR OF UMA RESEARCH GROUP. LEADER OF A GROUP OF SEVEN RESEARCHERS WHERE MORE THAN 17 HAVE BEEN INVOLVED IN THE LAST YEARS. RESEARCH GROUP OFFICIALLY RECOGNIZED BY GENERALITAT DE CATALUNYA

JOB RELATED SKILLS

PROJECT COORDINATOR OF INNOSETA H2020 PROJECT (WWW.INNOSETA.EU). THIS PROJECT HAS DIRECT RELATIONSHIP WITH THE RISK ASSESSMENT ACTIVITIES ALREADY STARTED BY DG SANTE.
ASSOCIATE EDITOR OF CROP PROTECTION JOURNAL, PRECISION AGRICULTURE AND JOURNAL OF ASABE
TRAINING COORDINATOR OF **BTSF TRAINING COURSES** ON PESTICIDE APPLICATION EQUIPMENT SINCE 2015.
TRAINING COORDINATOR OF **BTSF ON-LINE TRAINING COURSE** ON RISK MITIATION MEASURES
TUTOR AT **BTSF TRAINING COURSE** ON IMPLEMENTATION OF IPM MEASURES
PROJECT COORDINATOR OF ERASMUS+ AGRICT (WWW.AGRICT.UPC.EDU)
EXPERT MEMBER FOR RISK ASSESSMENT AD-HOC GROUP FROM DG SANTE.
DIRECTOR OF UMA, RESEARCH GROUP FOCUSED ON SPRAY APPLICATION TECHNOLOGY
COORDINATOR OF THE OFFICIAL TRAINING COURSES FOR INSPECTOR OF SPRAYERS IN USE IN SPAIN, IN COLLABORATION WITH MINISTRY OF AGRICULTURE IN SPAIN
AUTHOR OF THE OFFICIAL MANUAL OF INSPECTIONS OF SPRAYERS IN USE
MEMBER OF CEN AND ISO, INVOLVED IN DEVELOPMENT OF ISO 16122 (INSPECTION OF SPRAYERS IN USE) AND ISO 16119 (SPECIAL REQUIREMENTS FOR NEW SPRAYERS)
RESPONSIBLE OF ERASMUS PROGRAM AT ESCOLA SUPERIOR D'AGRICULTURA DE BARCELONA. 2000 TO 2006
DIRECTOR OF CÁTEDRA SYNGENTA-UPC (WWW.CATEDRASYNGENTA.UPC.EDU).
DIRECTOR OF II INTERNATIONAL MASTER OF VITICULTURE AND OENOLOGY
PRESIDENT OF AESAVE (ASOCIACION ESPAÑOLA DE SANIDAD VEGETAL)

OTHER SKILLS
Music, writing, design, etc.

- Gil, E. Zarpazos en el alma. Ed. Los libros del gato negro. Zaragoza, marzo 2017.
- Member of *Banda de Música de Rivas* (tenor saxophone) (www.bandaderivas.com)
- Gil, E. Banda de Música de Rivas. Conmemoración de un siglo y cuarto de andanzas musicales. Ed. Diputación Provincial de Zaragoza, 2008. (http://www.ejeadigital.com/imprimir.php?id=6143)
- Gil, E. Historia del socialismo y el sindicalismo en Rivas. 1929-1939, una década que dejó huella. Diputación Provincial de Zaragoza. https://www.todocoleccion.net/libros-segunda-mano/historia-sindicalismo-socialismo-rivas~x117318655#sobre_el_lote
- Gil, E. Entre el Riguel y La Bardena. Zaragoza, 2011. http://www.cincovillas.com/el-sabinarentre-el-riguel-y-la-bardena/
  2014. First Award Literature - Primer premio del concurso de Relatos cortos de Aupazaragoza.com por el relato titulado "El último Remate" (www.aupazaragoza.com)
- 2018. Award Literature: "A orillas del Arba" https://www.todostuslibros.com/libros/premios-phytoma-30-aniversario-relato-breve_978-84-946691-3-2

ADDITIONAL INFORMATION

PHD DISSERTATIONS
Advisor

DR. JORDI LLORENS (2012)
TITTLE: NEW TECHNOLOGIES FOR IMPROVING PESTICIDE TREATMENTS IN VINEYARD. DECISION SUPPORT SYSTEM, ULTRASONIC SENSORS AND LIDAR SENSOR.
IN COLLABORATION WITH UNIVERSITAT DE LLEIDA
MAIN DIRECTOR/ADVISOR: PROF. EMILIO GIL
OTHER ADVISORS: PROF. J RAMON ROSELL & PROF. RICARDO SANZ

JDR. ORDI LLOP CASAMADA (2017)
TITTLE: IMPROVEMENT OF PESTICIDE APPLICATION PROCESS IN GREENHOUSE TOMATO CROP. ASSESSMENT OF ADAPTED SPRAYING TECHNOLOGIES AND METHODS FOR CANOPY CHARACTERIZATION
EUROPEAN MENTION
MAIN DIRECTOR/ADVISOR: PROF. EMILIO GIL
MARCH 2017

DR. ANTONIO MIRANDA FUENTES (2017)
TITTLE: STRATEGIES FOR THE OPTIMIZATION OF THE EFFICIENCY IN THE PLANT PROTECTION PRODUCT APPLICATIONS IN OLIVE CANOPIES
EUROPEAN MENTION
IN COLLABORATION WITH: UNIVERSIDAD DE CORDOBA (SPAIN)
CO-DIRECTOR /CO-ADVISOR: PROF. EMILIO GIL
OTHER ADVISORS: PROF. JESUS GIL-RIBES AND PROF. GREGORIO BLANCO (UNIVERSITY OF CÓRDOBA)
FEBRUARY 16TH 2017

DR. MARCO GRELLA (2017)
TITTLE: LE PROBLEMATICHE AMBIENTALI E I RISCHI PER GLI ASTANTI LEGATI ALLA DERIVA DEL PRODOTTO FITOATRICO
EUROPEAN MENTION
IN COLLABORATION WITH: UNIVERSITA DEGLI STUDI DI TORINO (ITALY)
CO-DIRECTOR /CO-ADVISOR: PROF. EMILIO GIL
OTHER ADVISORS: PROF. PAOLO BALSARI (UNIVERSITY OF TURÍN)
MARCH 2017

DRA. EMMMA CECILIA GIRON ROJAS (2020)
TITTLE: BALANCE DE MASAS E IDENTIFICACIÓN DE INDICADORES PARA MEDIR LA EFICIENCIA EN LAS PLANTAS PÚBLICAS DE COMPSTAJE DE FRACCIÓN ORGÁNICA DE RESIDUOS MUNICIPALES (FORM)

DIRECTOR /ADVISOR: PROF. EMILIO GIL
OTHER ADVISORS: DRA. MARGA LOPEZ (UPC)
SEPTEMBER 2020

DR. COSTAS MICHAEL (2020)
TITTLE: IMPLEMENTATION OF NOVEL SPRAYING TECHNIQUES IN VINEYARDS
CO-DIRECTOR /CO-ADVISOR: PROF. EMILIO GIL
OTHER ADVISORS: PROF. MENELAOS C. STAVRINIDES (CYPRUS UNIVERSITY OF TECHNOLOGY)
DECEMBER 2020

DR. JORGE BADULES (2021)
TITTLE: APLICACIÓN DE LA DINÁMICA DE FLUÍDOS COMPUTACIONAL (CFD) EN EL DISEÑO Y ESTUDIO DE PULVERIZADORES HIDRONEUMÁTICOS.
CO-DIRECTOR /CO-ADVISOR: PROF. EMILIO GIL
OTHER ADVISORS: PROF. FCO. JAVIER GARCÍA RAMOS (UNIVERSIDAD DE ZARAGOZA)
MARCH 17TH 2021

DR. JAVIER CAMPOS TOBAJAS (2021)
TITTLE: TECNOLOGÍAS EMERGENTES Y AGRICULTURA DE PRECISIÓN EN CULTIVOS TRIDIMENSIONALES. IMPLEMENTACIÓN Y MEJORA DE LAS TÉCNICAS DE APLICACIÓN DE FITOSANITARIOS EN VIÑA.
DIRECTOR /ADVISOR: PROF. EMILIO GIL

PARTICIPATION IN COMPETITIVE R & D PROJECTS (MAIN PROJECTS)

- **CULTISENSOR** – Monitorización del suelo a través de labores profundas de preparación en laboreo. Ministerio de Industria, Comercio y Turismo. AEI-010500-2023-242. 108.562€. 2023-2024.
- **MICROUS** - Reducció de l'ús de coure en cultius horticoles mitjançant la tècnica de microencapsulació. Generalitat de Catalunya. PDR 2014-2022. 56 30150 2021 P4. 48.078e. 2022-2024.
- **SENSORCUFIT** - Sensorización y digitalización de paneles recuperadores de fitosanitarios para viticultura a una plataforma de toma de datos y decisiones. Ministerio de Industria, Comercio y Turismo. AEI-010500-2023-255. 169.799€. 2023-2024.
- **ADOPTA (PRUEBA DE CONCEPTO) -** Adoption of new technologies to reduce pesticides. Drones for variable-rate application in olive and vineyard plantations. PDC2022-133395-C41. Finnanced by Minsterio de Ciencia y Tecnología. Period: January 2023 – December 2025.
- **COPPEREPLACE – (EU INTERREG-SUDOE PROJECT)** - Desarrollo e implementación integral de nuevas tecnologías, productos y estrategias para reducir la aplicación de cobre en viñedos y remediar suelos contaminados en la región SUDOE (Development and comprehensive implementation of new technologies, products and strategies to reduce copper application in vineyards and remediate contaminated soils in the region SUDOE)- Reference: SOE4/P1/E1000. Period. November 2020 – February 2023. Budget: 1.213.000,00 €.
- **CANOPIES (H2020 EU Project):** A Collaborative Paradigm for Human Workers and Multi-Robot Teams in Precision Agriculture Systems. Call: H2020-ICT-2020-2. Activity: ICT-46-2020-RIA. Type of action: RIA. Proposal number: 101016906. Period: 2020-2024.
- **NOVATERRA (H2020 EU Project):** Integrated novel strategies for reducing the use and impact of pesticides, towards sustainable mediterranean vineyards and olive groves. Call: H2020-SFS-2018-2020 (Sustainable Food Security) Topic: SFS-04-2019-2020, Type of action: IA. Period: October 2020 – September 2024. https://www.novaterraproject.eu
- **ERASMUS + AGRISAT** – Innovative curriculum in smart AGRIculture through SATellite and remote sensing data in SEA. Programme: EPPKA2 - Cooperation for innovation and the exchange of good practices. Action CBHE-JP - Capacity Building in higher education - Joint Projects. 2020-2023.
- **PIVOS** – PULVERIZACION INTELIGENTE PARA VIÑEDO Y OLIVAR SOSTENIBLE - VOLUMEN DE APLICACIÓN. Ministerio de Ciencia e innovación. Programa Retos. Ref: PID2019-104289RB-C41. Prof. Emilio Gil coordinates this research project. 2020-2023. https://pivos.upc.edu
- **PROJECTE DEMOSTRATIU GENERALITAT DE CATALUNYA**- Avaluació de l'eficàcia dels

tractaments fitosanitaris realitzats amb broquets de baixa deriva en cultius hortícoles de port baix al Baix Llobregat. Ref. 56 30085 2019 P4. Budget: 29.500 €. Finnanced by: Generalitat de Catalunya. Main researcher: Prof. Emilio Gil. Period: 2020-2021.

- **GENERALITAT DE CATALUNYA**. Demostració pràctica de l'apliabilitat de mapes de vegetació per a l'aplicació variable de productes fitosanitaris a la vinya. Reducció de l'ús de plaguicides i disminució de la contaminació. Nº. 56 30068 2017 P4. Budget: 29.500 €. Finnanced by: Generalitat de Catalunya. Main researcher: Prof. Emilio Gil. Period: 2017-2018.
- **INNOSETA (H2020 EU Project**) – **Coordinator** – Accelerating Innovative practices for Spraying Equipment, Training and Advising in European agriculture through the mobilization of Agricultural Knowledge and Innovation Systems. Horizon 2020 project. Call: H2020-RUR-2016-2017 (Rural renaissance – fostering innovations and business opportunities). May 2018- October 2021. http://www.innoseta.eu
- **OPTIMA (H2020 EU Project):** Optimized Pest Integrated Management to precisely detect and control plant diseases in perennial crops and open-field vegetables. Horizon 2020 project. Call: H2020-SFS-2016-2017 (Sustainable Food Security – Resilient and resource-efficient value chains). Prof. Emilio Gil es el Investigador Principal y reponsable del partner UPC. September 2018-December 2021. https://optima-h2020.eu
- **IOF – Internet of Farm – www.iof2020.eu –** Open Call Use Case Work Plan – SMARTOMIZER - IoF2020 has received funding from the European Union's Horizon 2020 research and innovation program. under grant agreement no. 731884
- **ERASMUS+ AGRICT-** Development of a training program for enhancing the use of ICT tools in the implementation of precision Agriculture. 2018-2010. **Coordinator** of the project. https://agrict.upc.edu
- **LIFE PERFECT –** September 2018 – September 2021. Pesticide Reduction using friendly and environmentally controlled technologies. (LIFE17 ENV/ES/000205). Budget: 1.996.385 €. Main researcher from UPC. http://perfectlifeproject.eu
- **GRUPO OPERATIVO GOPHYTOVID –** Optimización del uso de fitosanitarios en viticultura en base a mapas de vigor. Solicitud de ayuda para la ejecución de proyectos de innovación por grupos operativos. Periodo agosto 2018- Junio 2020. Importe de la ayuda: 595.000 € Financiado por el Ministerio de Agricultura, Pesca y Alimentación. https://www.gophytovid.es
- **Chafea/2018/BTSF/03**: Organization and implementation of training activities on inspection and calibration of pesticide application equipment in professional use under the Better Training for Safer Food initiative. 2018-2021. Coordinator: Dr. Emilio Gil. Financed by: DG SANCO (EU), Brussels. https://btsfacademy.eu/training/enrol/index.php?id=176
- **GENERALITAT DE CATALUNYA**. Demostració pràctica de l'apliabilitat de mapes de vegetació per a l'aplicació variable de productes fitosanitaris a la vinya. Reducció de l'ús de plaguicides i disminució de la contaminació. Nº. 56 30068 2017 P4. Budget: 29.500 €. Finnanced by: Generalitat de Catalunya. Main researcher: Prof. Emilio Gil. Period: 2017-2018.
- **INNOLIVAR** – Innovation program financed by Spanish Ministry of Industry focused in the whole production process of olive oil. UPC (Prof. Gil) participates in collaboration with Pulverizadores Fede, S.L. in the development and evalutation of an advanced sprayer. https://innolivar.es
- **AgVANCE**. Herramientas de base fotonica para la gestión agronómica y el uso de productos fitosanitarios sostenible en cultivos arbóreos en el marco de la agricultura de precisión. AGL2013-48297-C2-1-R. Main researcher and coordinator: Prof. Gil.: 2014-2017. Budget: 70.000 €. Financed by: Ministerio de Economia y Competitividad, Spain.
- **SAFESPRAY**. Estrategias integrales para una utilización de fitosanitarios segura y eficaz. Pulverización inteligente en viña. AGL2010-22304-C04-04. Ministerio de Ciencia e Innovación. Main researcher: Prof. Gil. 2011-2014. Budget: 60.500 €. Financed by: Ministerio de Economia y Competitividad, Spain.
- **OPTIDOSA**. Reducción del uso de productos fitosanitarios en cultivos arbóreos. Optimización de la dosis de aplicación en tratamientos mecanizados en vid. AGL2007-66093-C04-02/AGR. Ministerio de Ciencia y Tecnología. Main researcher: Dr. Emilio Gil. 2007-2011. Budget: 125.840 €. Financed by: Ministerio de Economia y Competitividad, Spain.
- **PULVEXACT**. Implementación de un sistema de decisión de la dosis de producto fitosanitario en tratamientos en viñedo. AGL2002-02460-C04-03. 2003-2006. Main researcher: Prof. Gil. Budget: 63.250 €. Financed by Ministerio de Economía y Competitividad, Spain.

- **MECAOLIVAR**. Lote 6. Adaptación por poda de los árboles a los prototipos de recolección y evaluación de la deriva de los productos agroquímicos aplicados en pulverización. Universidad de Córdoba. 2014-2015. Budget: 45.000 €.
- **Chafea/2014/BTSF/02**: Organization and implementation of training activities on inspection and calibration of pesticide application equipment in professional use under the Better Training for Safer Food initiative. 2015-2017. Coordinator: Dr. Emilio Gil. Financed by: DG SANCO (EU), Brussels.
- **H30**- Healthy crop. Healthy environment, healthy finances - H3O - H2020-SMEINST-2014. Subcontractor: Prof. Emilio Gil. Financed: EU Project.
- **LIFE FITOVID** - Implementation of Demonstrative & Innovative Strategies to reduce the use of phytosanitary products in viticulture. LIFE13 ENV/ES/000710. Coordinator: Yolanda Fernández (Neiker). Investigador UPC: Emilio Gil. 2014 -2017. Budget: 139.045 €.
- **TOPPS** - Training the Operator to Prevent Pollution from point Sources. LIFE05 ENV/B/000510. 2005-2008. Budget: 83450 €.
- Red **PULSO**. Técnicas sostenibles de distribución de plaguicidas. 107RT0319. Programa Iberoamericano de Ciencia y Tecnología (CYTED). Main researcher: Dr. Luís Val (UPV). 2007-2010.
- Software to determine the optimal volume rate for pesticide applications in vineyards. Main researcher: Prof. Gil. Budget: $ 20.886. Financed by **USDA/CSREES** Viticulture consortium East NYS Wine and Grape foundation. 2005-2006. **Cornell University**.
- AMB-092 (1992 - 1994) Título: 'Optimización del compostaje de RSU, lodos de depuradora y restos de poda'. Main researcher: Dra. Montserrat Soliva.
- AGF 96-0966 (1996 - 1999) Título: 'Efectos de la aplicación de residuos orgánicos en dos tipos de rotaciones (cultivos hortícolas y cultivos extensivos). Dinámica suelo-planta de nutrientes y contaminantes e influencia en la producción' Investigador principal: Dra. Montserrat Soliva

PARTICIPATION IN NON-COMPETITIVE R & D PROJECTS (MAIN PROJECTS)

- **TOPPS on farm** – Eu project financed by ECPA – European Crop Protection Association 2019-2021. Budget: 60.000 €
- **TOPPS-WATER PROTECTION** - Main researcher in Spain: **Prof. Gil**. Financed by European Crop Protection Association (ECPA). 2014- 2017. Budget: 85.000€.
- **TOPPS-PROWADIS**: Train Operators to Promote Practices and Sustainability - to protect water from diffuse sources. Main researcher in Spain: Prof. Gil. Financed by European Crop Protection Association (ECPA). 2011- 2014. Budget: 87.700€.
- **TOPPS-Environmentally Optimized Sprayers**. Responsable en España: Emilio Gil (UPC). Financed by European Crop Protection Association (ECPA). 2009-2010. Budget: 16.000 €
- Buenas prácticas fitosanitarias en las cuencas hidrográficas del Ebro y del Duero. Main researcher: Prof. Gil. Financed by: Syngenta Agro, S.A. 2012 - 2014. Budget: 30.000 €.
- Desarrollo y puesta a punto de un equipo para tratamientos fitosanitarios en invernadero. Responsable: Emilio Gil. Financed by Syngenta Agro, S.A. 2011 2013. Budget: 39.873 €.
- Estudio de la eficacia del uso de boquillas de baja deriva en el control del oídio en viña. Main researcher: Prof. Gil. Financed by Bayer CropScience. 2013. Budget: 5.930 €.
- Utilización de equipos para la distribución de purín. 2008. Financed by Generalitat de Catalunya. Budget: 6000 €
- Metodología para el desarrollo de inspecciones obligatorias de equipos de tratamientos fitosanitarios en uso. AENOR. 2012. Budget: 2000 €.
- Aplicación de la electrónica en los tratamientos fitosanitarios en viña. DARP - Generalitat de Catalunya. 2002. Budget: 9000 €
- Campaña de revisión de equipos de tratamientos fitosanitarios en la DO Campo de Borja (Zaragoza). 1996-1998. Budget: 2000 €. CRDO Campo de Borja.

PUBLICATIONS IN JOURNALS (SCIENCE CITATION INDEX)

- Campos, J., Zhu, H., Jeon, H., Salcedo, R., Ozkan, E., Román, C., & Gil, E. 2023. Air-pinch PWM valve to regulate flow rate of hollow-cone nozzles for variable-rate sprayers. pplied Engineering in Agriculture. 39(2): 235-244. https://doi.org/10.13031/aea.15415
- Campos, J., Zhu, H., Jeon, H., Salcedo, R., Ozkan, E., & Gil, E. (2023). Assessment of PWM solenoid valves to manipulate hollow-cone nozzles with different modulation frequencies. Appl. Eng. Agric., 39(2), 235–244. https://doi.org/10.13031/aea.15415
- Garcia-Ruiz, F.; Campos, J.; Llop-Casamada, J.; Gil, E. 2023. Assessment of map based variable rate strategies for copper reduction in hedge vineyards. Computers and Electronics in Agriculture, Volume 207, 2023, 107753. https://doi.org/10.1016/j.compag.2023.107753
- Wei, Z.; Xue, X.; Salcedo, R.; Zhang, Z.; Gil, E.; Sun, Y.; Li, Q.; Shen, J.; He, Q.; Dou, Q.; et al. Key Technologies for an Orchard Variable-Rate Sprayer: Current Status and Future Prospects. Agronomy 2023, 13, 59. https://doi.org/10.3390/agronomy13010059
- Xun, L., Campos, J., Salas, B. Fábregas, X.; Gil, E. 2023. Advanced spraying systems to improve pesticide saving and reduce spray drift for apple orchards. Precision Agric 24, 1526–1546 (2023). https://doi.org/10.1007/s11119-023-10007-x
- Salas, B.; Salcedo, R.; Ortega, P.; Grella, M.; Gil, E. Use of ultrasound anemometers to study the influence of air currents generated by a sprayer with an electronic control airflow system on foliar coverage. Effect of droplet size. Computers and Electronics in Agriculture, Volume 202, 2022, 107381, ISSN 0168-1699, https://doi.org/10.1016/j.compag.2022.107381
- Salcedo, R.; Zhu, H.; Jeon, H.; Ozkan, E.; Wei, Z.; Gil, E.; Campos, J.; Román, C. 2022. Droplet Size Distributions from Hollow-Cone Nozzles Coupled with PWM Valves. Journal of the ASABE. 65(4):695-706 http://dx.doi.org/10.13031/ja.15064
- Salcedo, R.; Zhu, H.; Jeon, H.; Ozkan, E.; Wei, Z.; Gil, E. 2022. Characterisation of activation pressure, flowrate and spray angle for hollow-cone nozzles controlled by pulse width modulation. Biosystems Engineering, 218, 139-152. https://doi.org/10.1016/j.biosystemseng.2022.04.002
- Ortega, P.; Sánchez, E.; Gil, E.; Matamoros, V. 2022. Use of cover crops in vineyards to prevent groundwater pollution by copper and organic fungicides. Soil column studies. Chemosphere, 134975. https://doi.org/10.1016/j.chemosphere.2022.134975
- Xun, L.; Garcia-Ruiz, F.; Fabregas, F. X.; Gil, E. 2022. Pesticide dose based on canopy characteristics in apple trees: Reducing environmental risk by reducing the amount of pesticide while maintaining pest and disease control efficacy. Science of the Total Environment, 826, 154204. https://doi.org/10.1016/j.scitotenv.2022.154204
- Gil, E.; Bueno, M.; Campos, J.; Gallart, M.; Da Cunha J.A.R. 2021. Evaluation of horizontal patternators according to internatioinal standard requirements for boom sprayers. Transactions of the ASABE, 64(5): 1635-1646. (doi: 10.13031/trans.14086) @2021
- Campos, J.; García-Ruíz, F.; Gil, E. Assessment of Vineyard Canopy Characteristics from Vigour Maps Obtained Using UAV and Satellite Imagery. Sensors 2021, 21, 2363. https://doi.org/10.3390/s21072363
- Michael, C.; Gil, E.; Gallart M.; Stavrinides, M. 2021. Evaluation of the Effects of Spray Technology and Volume Rate on the Control of Grape Berry Moth in Mountain Viticulture. Agriculture 2021, 11. https://doi.org/10.3390/agriculture11020178
- Gil, E.; Salcedo, R.; Soler, A.; Ortega, P.; Llop, J.; Campos, J.; Oliva, J. 2021. Relative efficiencies of experimental and conventional foliar sprayers and assessment of optimal LWA spray volumes in trellised wine grapes. Pest Manag Sci 2021. https://doi.org/10.1002/ps.6276
- Michael, C.; Gil, E.; Gallart, M.; Kanetis, L.; Stavrinides, M. 2020. Evaluating the effectiveness of low volume spray application using air-assisted knapsack sprayers in wine vineyards. International Journal of Pest Management. https://doi.org/10.1080/09670874.2020.1807652
- Michael, C.; Gil, E.; Gallart, M.; Stavrinides, M.C. Influence of Spray Technology and Application Rate on Leaf Deposit and Ground Losses in Mountain Viticulture. Agriculture 2020, 10, 615. https://doi.org/10.3390/agriculture10120615
- Giron-Rojas, C.; Gil, E.; Garcia-Ruiz, A.; Iglesias, N.; López, M. 2020. Assessment of biowaste composting process for industrial support tool development through macro data approach. Waste Management 105 (2020) 364–372; https://doi.org/10.1016/j.wasman.2020.02.019
- Campos, J.; Gallart, M.; Llop, J.; Ortega, P.; Salcedo, R.; Gil, E. On-Farm Evaluation of Prescription Map-Based Variable Rate Application of Pesticides in Vineyards. Agronomy, 2020; doi: 10.20944/preprints201911.0306.v1
- Salcedo, R., Pons, P. Llop, J., Zaragoza, T., Campos, J., Ortega, P., Gallart, M., Gil, E. 2019.

Dynamic evaluation of airflow stream generated by a reverse system of an axial fan sprayer using 3D-ultrasonic anemometers. Effect of canopy structure. Computers and Electronics in Agriculture, Volume 163, August 2019, 104851. https://doi.org/10.1016/j.compag.2019.06.006

- Gil E., Campos, J., Ortega, P., Llop J., Gras A., Armengol E., Salcedo R., Gallart M. 2019. DOSAVIÑA: Tool to calculate the optimal volume rate and pesticide amount in vineyard spray applications based on a modified leaf wall area method. Computers and Electronics in Agriculture, Volume 160, May 2019, Pages 117-130.
- Alfran Tellechea, A.; Schlosser, JF.; Gil, E.; Silveira de Farias, M.; Oliveira dos Santos, G.; Bertollo, GM.; Barbieri, JP. 2019. Agricultural Spray Inspection According to ISO 16122: Part II—Determination of the State of Use and Conservation of Agricultural Sprayers. Journal of Agricultural Science, Vol. 11, No. 13; 2019, ISSN 1916-9752. https://doi.org/:10.5539/jas.v11n13p11
- Badules, J.; Vidal, M.; Boné, A.; Gil, E.; García-Ramos, F.J. CFD Models as a Tool to Analyze the Performance of the Hydraulic Agitation System of an Air-Assisted Sprayer. Agronomy 2019, 9, 769; https://doi.org/10.3390/agronomy9110769
- Campos J., Gil E., Campos J., Llop J., Gallart M., García-Ruíz F., Gras A., Salcedo R., Gil E. 2019. Development of canopy vigor maps using UAV for site-specific management during vineyard spraying process. Precision Agric. (2019). https://doi.org/10.1007/s11119-019-09643-z
- García-Ramos, F.J.; Badules, J.; Boné, A.; Gil, E.; Aguirre, A.J.; Vidal, M. (2018) Application of an Acoustic Doppler Velocimeter to Analyse the Performance of the Hydraulic Agitation System of an Agricultural Sprayer. Sensors 18, 3715; doi:10.3390/s18113715
- Gil, E., Llorens, J., Gallart, M., Gil-Ribes, J., Miranda-Fuentes, A. 2018. First attempts to obtain a reference drift curve for traditional olive grove's plantations following ISO 22866. Science of the Total Environment 29; 627:349-360. doi: 10.1016/j.scitotenv.2018.01.229
- Miranda-Fuentes, A.; Marucco, P.; González-Sánchez, EJ.; Gil, E.; Grella, M.; Balsari, P. 2017. Developing strategies to reduce spray drift in pneumatic spraying in vineyards: Assessment of the parameters affecting droplet size in pneumatic spraying. Science of the Total Environment, https://doi.org/10.1016/j.scitotenv.2017.10.242
- Badules, J.; Vidal, M.; Boné, A.; Llop, J.; Salcedo, R.; Gil, E.; García-Ramos, FJ. 2017. Comparative study of CFD models of the air flow produced by an air-assisted sprayer adapted to the crop geometry. Computers and Electronics in Agriculture, https://doi.org/10.1016/j.compag.2017.09.026
- Grella, M.; Gil, E.; Balsari, P.; Marucco, P.; Gallart, M. 2017. Advances in developing a new test method to assess spray drift potential from air blast sprayers. Spanish Journal of Agricultural Research, 15 (3): e0207, 16 pages. DOI: 10.5424/sjar/2017153-10580
- Schlosser, JF.; De Farias, M.; Estrada, J.; Dos Santos, G.; Gil, E. 2017. Performance and emission of pollutants of an agricultural engine with two power take-off settings. Journal of the Brazilian Association of Agricultural Engineering, Eng. Agríc., Jaboticabal, v.37, n.2, p.277-285, mar/abr. 2017; https://dx.doi.org/10.1590/1809-4430-Eng.Agric.v37n2p277-285/2017
- Grella, M.; Gallart, M.; Maruco, P.; Balsari, P.; Gil, E. 2017. Ground deposition and airborne spray drift assessment in vineyard and orchard: The influence of environmental variables and sprayer settings. Sustainability 2017. Sustainability 2017, 9(5), 728; https://doi.org/10.3390/su9050728
- Balsari, P., Gil, E., Marucco, P., van de Zande, J.C., Nuyttens, D., Herbst, A., Gallart, M. 2016. Field-crop-sprayer potential drift measured using test bench: Effects of boom height and nozzle type. *Biosystems Engineering*. doi: http://dx.doi.org/10.1016/j.biosystemseng.2016.10.015
- Višacki, V. V., Sedlar, A. D., Gil, E., Bugarin, R. M., Turan, J. J., Janic, T. V., Burg, P. 2016. Effects of Sprayer Boom Height and Operating Pressure on the Spray Uniformity and Distribution Model Development. *Applied Engineering in Agriculture*, 32(3): 341-346; doi: 10.13031/aea.32.11376
- Llop, J.; Gil, E.; Llorens, J.; Miranda-Fuentes, A.; Gallart, M. 2016. Testing the Suitability of a Terrestrial 2D LiDAR Scanner for Canopy Characterization of Greenhouse Tomato Crops. *Sensors* 2016, 16, 1435; doi:10.3390/s16091435
- Miranda-Fuentes, A.; Llorens, J.; Rodriguez-Lizana, A.; Cuenca, A.; Gil, E.; Blanco-Roldán, G.L.; Gil-Ribes, J. 2016. Assessing the optimal liquid volume to be sprayed on isolated olive trees according to their canopy volumes. *Science of the Total Environment*, 568(2016): 269-305. DOI:10.1016/j.scitotenv.2016.06.013

- Jiménez, A.; García-Ramos, J.; Muñoz, V.; Boné, A.V. 2015. Design and development of software for improving the efficacy and training of mandatory inspections of sprayers in use in Europe. *Applied Engineering in Agriculture* 31(6): 829-837; doi: 10.13031/aea.31.11302
- Miranda-Fuentes A.; Rodríguez-Lizana, A.; Gil, E; Agüera-Vega, J; Gil-Ribes, J. 2015. Influence of liquid-volume and airflow rates on spray application quality and homogeneity in super-intensive olive tree canopies. *Science of the Total Environment*, 537(15), 250–259
- Miranda-Fuentes, A.; Llorens, J.; Gamarra-Diezma, Juan Luis; Gil-Ribes, Jesús A.; Gil, E. 2015. Towards an optimized method of olive tree crown volume measurement. *Sensors*, 15(2): 3671-3687.
- Llop, J.; Gil, E.; Llorens, J.; Gallart, M.; Balsari, P. 2015. Influence of air-assistance on spray application for tomato plants in greenhouses. *Crop Protection*, 78: 293-301.
- Gil, E., Gallart, M., Balsari, P., Marucco, P., Gallart, M., Almajano, M.P., Llop, J. 2014. Influence of wind velocity and wind direction on measurements of spray drift potential of boom sprayers using drift test bench. *Agricultural and Forest Meteorology*, 202:94-101.
- Llop, J.; Gil, E., Gallart, M., Contador, F., Ercilla, M. 2015. Spray distribution evaluation of different setting of a hand-held trolley sprayer used in greenhouse tomato crops. *Pest Management Science* DOI: 10.1002/ps.4014
- Doruchowski, G., Balsari, P., Gil, E., Marucco, P., Roettele, M., Wehmann, H.-J. 2014. Environmentally Optimized Sprayer (EOS). A software application for comprehensive assessment of environmental safety features of sprayers. *Science of the Total Environment*, 482-483: 201-207.
- Gil, E., Balsari, P., Gallart, M., Llorens, J., Marucco, P., Andersen, P.G., Fàbregas, X., Llop, J. 2014. Determination of drift potential of different flat fan nozzles on a boom sprayer using a test bench. *Crop Protection*, 56: 58-68.
- Gil, E., Arnó, J., Llorens, J., Sanz, R., Llop, J., Rosell-Polo, J.R., Gallart, M., Escolà, A. 2014. Advanced technologies for the improvement of spray application techniques in Spanish viticulture: An overview. *Sensors*, 14: 691-708. doi:10.3390/s140100691
- Gil, E., Landers, A., Gallart, M., Llorens, J. 2013. Development of two portable patternators to improve drift control and operator training in the operation of vineyard sprayers. *Spanish Journal of Agricultural Research*, 11: 615-625.
- Escolà, A., Rosell-Polo, J.R., Planas, S., Gil, E., Pomar, J., Camp, F., Llorens, J., Solanelles, F. 2013. Variable rate sprayer. Part 1 - Orchard prototype: Design, implementation and validation. *Computers and Electronics in Agriculture*, 95: 122-135.
- Gil, E., Llorens, J., Llop, J., Fàbregas, X., Escolà, A., Rosell-Polo, J.R. 2013. Variable rate sprayer. Part 2 - Vineyard prototype: Design, implementation, and validation. *Computers and Electronics in Agriculture*, 95: 136-150.
- Sanz, R., Rosell, J.R., Llorens, J., Gil, E., Planas, S. 2013. Relationship between tree row LIDAR-volume and leaf area density for fruit orchards and vineyards obtained with a LIDAR 3D Dynamic Measurement System. *Agricultural and Forest Meteorology*, 171-172: 153-162.
- Gil, E., Llorens, J., Llop, J., Fàbregas, X., Gallart, M. 2013. Use of a terrestrial LIDAR sensor for drift Detection in vineyard spraying. *Sensors*, 13: 516-534.
- Llorens, J., Gil, E., Llop, J., Queraltó, M. 2011. Georeferenced LiDAR 3D vine plantation map generation. *Sensors*, 11: 6237-6256.
- Gil, E., Llorens, J., Landers, A., Llop, J, Giralt, L. 2011. Field validation of DOSAVIÑA, a decision support system to determine the optimal volume rate for pesticide application in vineyards. *European Journal of Agronomy*, 35(1):33-46.
- Llorens, J., Gil, E., Llop, J., Escolà, A. 2011. Ultrasonic and LIDAR Sensors for Electronic Canopy Characterization in Vineyards: Advances to Improve Pesticide Application Methods. *Sensors*, 11(2):2177-2194.
- Escolà, A., Planas, S., Rosell, JR., Pomar, J., Camp, F., Solanelles, F., Gracia, F., Llorens, J., Gil, E. 2011. Performance of an Ultrasonic Ranging Sensor in Apple Tree Canopies. *Sensors*, 11(3):2459-2477.
- Llorens, J., Gil, E., Llop, J, Escolà, A. 2010. Variable rate dosing in precision viticulture: Use of electronic devices to improve application efficiency. *Crop Protection*, 29(3):239-248.
- Gil, E., Escolà, A. 2009. Design of a decision support method to determine volume rate for vineyard spraying. *Applied Engineering in Agriculture*, 25(2):145-151. doi: 10.13031/2013.26323
- Rosell, JR., Llorens, J., Sanz, R., Arnó, J., Ribes-Dasi, M., Masip, J., Escolà, A., Camp, F., Solanelles, F., Gràcia, F., Gil, E., Val, L., Planas, S., Palacín, J. 2009. Obtaining the three-dimensional structure of tree orchards from remote 2D terrestrial LIDAR scanning.

Agricultural and Forest Meteorology, 149:1505-1515. doi: 10.1016/j.agrformet.2009.04.008

- Rosell, JR., Sanz, R., Llorens, J., Arnó, J., Escolà, A., Ribes-Dasi, M., Masip, J., Camp, F., Gracia, F., Solanelles, F., Pallejá, T., Val, L., Planas, S., Gil, E., Palacín, J. 2009. A tractor-mounted scanning LIDAR for the non-destructive measurement of vegetative volume and surface area of tree-row plantations: A comparison with conventional destructive measurements. *Biosystems Engineering*, 102:128-134. doi: 10.1016/j.biosystemseng.2008.10.009
- Gil, E. 2007. Inspection of sprayers in use: a European sustainable strategy to reduce pesticide use in fruit crops. Applied Engineering in Agriculture, 23(1):49-56. doi: 10.13031/2013.20632
- Gil, E., Escolà, A., Rosell, JR., Planas, S., Val, L. 2007. Variable rate application of plant protection products in vineyard using ultrasonic sensors. Crop Protection, 26(8):1287-1297. doi: 10.1016/j.cropro.2006.11.003
- Gil, E., Badiola, J. 2007. Design and verification of a portable vertical patternator for vineyard sprayers calibration. *Applied Engineering in Agriculture*, 23(1):35-42. doi: 10.13031/2013.22328
- Soliva, M., Bernat, C., Gil, E., Martínez, X., Pujol, M., Sabaté, J., Valero, J. 2007. Education and research related to organic waste management at agricultural engineering schools. *International Journal of Sustainability in Higher Education*, 8(2):224-233.

PUBLICATIONS IN JOURNALS (RELEVANT INTERNATIONAL PUBLICATIONS)

- Llop, J.; Gibert, P.; Biscamps, J.; Heinkel, R.; Gil, E. 2022. Assessment of the influence of the nozzles's pattern and spray distance on vertical spray profile. *Aspects of Applied Biology* ***147****, 2022. International Advances on Pesticide Application*.
- Salcedo, R.; Zhu, H.; Jeon, H.; Ozkan, E.; Wei, Z.; Gil, E. 2021. Characteirzation of volumetric droplet size distributions from PWM-controlled hollow-cone-nozzles designed for variable-rate air-assisted sprayers. An ASABE Meeting Presentation. Paper Number: 2100038. 2021 Annual International Meeting ASABE July 12-16, 2021. St. Joseph, MI. doi: https://doi.org/10.13031/aim.202100038
- Koutsouris A., Gil E., Balsari P., Codis S., Nuyttens D., Fountas S., Kanaki K., 2019. Factors pertaining the gap between research and practice: The case of innovative spraying equipment 24th European Seminar on extension and education. 18-21 June 2019, Acireale (Italy)
- Gil, Emilio & Gallart, Montserrat & Balsari, Paolo & Koutsouris, Alex & Codis, Sebastien & Nuyttens, David & Fountas, Spyros. 2019. INNOSETA - An H2020 European project to fill the gap between research and professional users in crop protection. SuproFruit 2019 – 15th Workshop on Spray Application and Precision Technology in Fruit Growing
- Gil E., Gallart M., Gioelli F., Balsari P., Koutsouris A., Codis S., Nuyttens D., Fountas S. 2020. INNOSETA - An H2020 European project to fill the gap between research and professional users in crop protection. Aspects of Applied Biology. 144: 221-230.
- Mozzanini E., Gioelli F., Marucco P., Grella M., Nuyttens D., Gil E., Codis S., Tsiropoulos T., Nilsson E., Balsari P. 2022. The INNOSETA Platform: a web-tool to support communication on innovation and research in the crop protection sector Aspects of Applied Biology 147, 2022 International Advances in Pesticide Application
- S Codis, M Lewis, E Hugo, E Gil, F Gioelli, P Balsari, A Koutsouris, D Nuyttens, S Fountas, M Koutsiaras, Z Tsiropoulos, D Donkers, E Nilsson, 2022 INNOSETA regional workshops: analysis of the needs for better dissemination of spraying innovations in vineyards and orchards Aspects of Applied Biology 147, 2022 International Advances in Pesticide Application
- Gioelli, F., Grella, M., Marucco, P., Mozzanini, E., Balsari, P.; L'innovazione Tecnologica Nelle Macchine per la Distribuzione dei Prodotti Fitosanitari: Primi Risultati del Progetto H2020 Innoseta
- Gil, E.; Ortega, P.; Salas, B.; Andreu, F.; Berger, L.T.; Fountas, S.; Nuyttens, D. 2020. Development of a methodology to select the optimal application technologies in apple crop – EU project OPTIMA H2020. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 144, 2020 International Advances in Pesticide Application. Brighton (UK).
- Gil, E.; Gallart, M.; Gioelli, F.; Balsari, P.; Koutsouris, A.; Codis, S.; Nuyttens, D.; Fountas, S. 2020. INNOSETA – An H2020 European project to fill the gap between research and professional users in crop protection. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W.

Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 144, 2020 International Advances in Pesticide Application. Brighton (UK).

- Ortega, P.; Salas, B.; Balsari, P.; Polder, G.; Fountas, S.; Nuyttens, D.; Jesus, J.; Balafoutis, T.; Gil, E 2020. H2020 – OPTIMA – Optimised Pest Integrated Management to precisely detect and control plant diseases in perennial crops and open-field vegetables. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 144, 2020 International Advances in Pesticide Application. Brighton (UK).
- Badules, J.; Gil, E.; García-Ramos, F.J. 2020. Simulation of pesticide application in vineyards using CFD: study of drift and treatment optimization. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 144, 2020 International Advances in Pesticide Application. Brighton (UK).
- Gil, E. 2019. Proyecto Innoseta: acercando la ciencia al campo para una protección de cultivos segura y sostenible. En: Proceedings del 15º Symposium Nacional de Sanidad Vegetal, pg. 151-162. Sevilla 23, 24 y 25 de enero de 2019. Sevilla. Edita Junta de Andalucía, Consejería de Agricultura, Pesca y Desarrollo Rural. D.L. SE 2496-2018.
- Campos, J.; Gallart, M.; Llop, J.; Gil, E. 2019. Monitoring site-specific spraying in vineyards from prescripción map obtained with a UAV. Precision agriculture '19, Proceedings of the 12th European Conference on Precision Agriculture, Montpellier, France, 08-11 July 2019, pp. 149-155. https://doi.org/10.3920/978-90-8686-888-9_17
- Gil, E.; Campos, J.; Ortega, P. 2018. Spanish's experience on improving inspection of sprayers: official manual for ISO 16122 and ISO 16119. Seventh European Workshop on Standardised Procedure for the Inspection of Sprayers – SPISE 7 -, Athens, Greece, September 26 – 28, 2018. Berichte aus dem Julius-Kühn-Institut. Vol. 196(24.09.2018). DOI: 10.5073/berjki.2018.196.000. https://ojs.openagrar.de/index.php/BerichteJKI/article/view/10329/9450
- Gil, E. 2018. Inspector's training and influence on the quality of inspections. An overview of training organization in EU. Seventh European Workshop on Standardised Procedure for the Inspection of Sprayers – SPISE 7 -, Athens, Greece, September 26 – 28, 2018. Berichte aus dem Julius-Kühn-Institut. Vol. 196(24.09.2018). DOI: 10.5073/berjki.2018.196.000. https://ojs.openagrar.de/index.php/BerichteJKI/article/view/10329/9450
- Miranda-Fuentes, A.; Cuenca, A.; Godoy-Nieto, A.; González-Sánchez, EJ.; Gil, E.; Llorens, J.; Gil-Ribes, J. 2018. Reducing spray drift by adapting the spraying equipment to the canopy shape in olive orchards with isolated trees. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 137 International Advances in Pesticide Application. Brighton (UK).
- Gil, E.; Salcedo, R.; Campos, J.; Llop, J.; Ortega, P.; Gallart, M. 2018. Orchard sprayer's evaluation according ISO 16119-3. Need to support manufacturer's procedure. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 137 International Advances in Pesticide Application. Brighton (UK).
- Gil, E., Balsari, P., Douzals, JP., Herbst, A., Kole, J..2016. International training courses on inspection and calibration of pesticide application equipment. A European Commission Directorate General for Health and Food Safety initiatives. Sixth European Workshop on Standardised Procedure for the Inspection of Sprayers in Europe - SPISE 6. Balsari, P., Gil, E., Wehmann, HJ: (Eds). Ed. Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente. ISBN: 978-84-491-1476-2; 265 pp.; Madrid, 2017
- Llorens, J., Gallart, M., Llop, J., Miranda-Fuentes, A., & Gil, E. 2016. Difficulties to apply ISO 22866 requirements for drift measurements. A particular case of traditional olive tree plantations. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), *Aspects of Applied Biology 132 International Advances in Pesticide Application* (pp. 31-37). Castelldefels, Barcelona (SPAIN).
- Gil, E. Gracia, F., Gallart, M., Llop, J., Llorens, J. 2016. From international to local scope. Training activities to improve the effective and profitable SUD implementation. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), *Aspects of Applied Biology 132 International Advances in Pesticide Application*. Castelldefels, Barcelona (SPAIN).
- Balsari, Paolo; Gil, E.; Marucco, Paolo; Gallart, M.; Bozzer, C.; Llop, J.; Tamagnone, M. 2014. Study and development of a test methodology to assess potential drift generated by air-assisted sprayers. In: *Aspects of Applied Biology 122, International Advances in Pesticide Applications*. Association of Applied Biologists, pp. 339-346. Oxford, UK.
- Gil, E.; Gallart, M.; Llorens, J.; Llop, J.; Bayer, T.; Carvalho, C. 2014. Spray adjustments based on LWA concept in vineyard. Relationship between canopy and coverage for different

application settings. In: *Aspects of Applied Biology 122, International Advances in Pesticide Applications. Association of Applied Biologists*, pp. 25-32. Oxford, UK.

- Azman, Nurul Aini Binti Mohd; Segovia Gomez, Francisco Jose; Martinez Farre, Francesc Xavier; Gil Moya, Emilio; Almajano Pablos, Maria Pilar, 2014. Screening of antioxidant activity of Gentian Lutea root and its application in Oil-in-Water Emulsions. Journal: *Antioxidants* 2(3) 455-471
- Rinaldi, M.; Llorens, J.; Gil, E. 2013. Electronic characterization of the phenological stages of grapevine using a LIDAR sensor. In: 9th *European Conference on Precision Agriculture*, pp. 603-609. Lleida, Spain. 10.3920/978-90-8686-778-3_74
- Gil, E.; Llorens, J.; Llop, J. 2012. New technologies adapted to alternative dose expression concepts. In: *Aspects of applied Biology, 114, International Advances in Pesticide Application*, pp. 325-333. Wageningen, Netherlands.
- Landers A, Balsari P, Gil E, 2012. Putting the spray onto the target - the development and demonstration of vertical patternators for fruit growers. *ASABE Annual Int Meeting*, Dallas (USA), Jul 29-Aug 1. Paper 121336783.
- Gil, E., Montemayor, V., Gracia. F. 2012. The official procedure for mandatory inspection of sprayers in use in Spain. How to deal with regional autonomous authorities. *Third European Workshop on Standardised Procedure for the Inspection of Sprayers in Europe - SPISE 3*. Die Deutsche Nationalbibliothek verzeichnet diese Publikation In der Deutschen Nationalbibliografi e: detaillierte bibliografi sche Daten sind im Internet über http://dnb.d-nb.de abrufbar. ISSN 1868-9892 ISBN 978-3-930037-66-7.
- Gil E., Llorens J., Llop J. 2010. Precision Viticulture: use of New Technologies to Improve Efficiency in Spray Applications in Vineyard. *CIGR Section V International Symposium*. "Technology and Management to Increase the Efficiency in Sustainable Agricultural Systems". Rosario (Argentine).
- Escolà, A., Camp, F., Solanelles, F., Llorens, J., Planas, S., Rosell J., Gracia, F., Gil, E. 2007. Variable dose rate sprayer prototype for tree crops based on sensor measured canopy characteristics. In: Precision agriculture '07. Papers presented at the 6th European Conference on Precision Agriculture, Skiathos, Greece, 3-6 June, 2007. Editor: Stafford, J.V. pp. 563-571. ISBN 978-90-8686-024-1
- Planas, S.; Rosell, J.; Gil, E.; Val, L.; Escolà, A. 2006. Optimizing pesticide spray application in tree crops. *ASABE Paper Nº 061128*, St. Joseph, Mich, ASABE
- Gil, E. 2006. Inspection of sprayers in use: a European sustainable strategy to reduce pesticide use in fruit crops. *ASABE Paper Nº 061130*, St. Joseph, Mich.: ASABE. http://asae.frymulti.com/abstract.asp?aid=20632&t=2
- Escolà, A.; Camp, F.; Solanelles, F.; Planas, S.; Gracia, F.; Rosell, J.; Gil, E.; Val, L. 2006. Spray application volumen in Apple and pear orchards in Catalonia (Spain) and Variable Rate Technology for dose adjustment. *ASABE Paper Nº 061130*, St. Joseph, Mich.: ASABE. DOI: 10.13031/2013.20624
- Landers, A., Gil, E. 2006. Development and Validation of a New Deflector System to Improve Pesticide Application in New York and Pennsylvania Grape Production Areas. *ASABE Paper Nº 061001*, St. Joseph, Mich, ASABE.
  http://asae.frymulti.com/abstract.asp?aid=20569&t=2.
- Gil, E. 2006. Inspection of sprayers in use: a European sustainable strategy to reduce pesticide use in fruit crops. *ASABE Paper Nº 061130*, St. Joseph, Mich.: ASABE. http://asae.frymulti.com/abstract.asp?aid=20632&t=2.
- Gil, E. 2006. The Spanish perspective on pesticide application issues on international standards and regulatory demands. *Aspects of Applied Biology 77, International advances in pesticide application*, pp. 51-62. http://www.aab.org.uk/contentok.php?id=378
- Gil, E., Gracia, F. 2004. Compulsory inspection of sprayers in use: improving efficiency by training and formative aspects. *First European Workshop on Standardised Procedure for the Inspection of Sprayers in Europe - SPISE* - Braunschweig, Germany, April 27-29, pp. 114-119. ISBN 3-930037-13-0
- Gil, E. 2001. Inspection of sprayers in use. Quality improvement by increasing farmer's formation. *Parasitica* 57, (1-2-3):157-166
- Gil, E. 2001. Actual state of sprayers in use in vineyards in Spain. Quality improvement by increasing farmer's formation. In: 6th International Symposium Technology in Viticulture – Intervitis Interfructa. Stuttgrt (Germany), May 2001.
- Situación actual y posibilidades de la agricultura de precisión https://www.yumpu.com/es/document/view/41510094/situacion-actual-y-posibilidades-de-

la-agricultura-de-precision/29

PROJECTS/AGREEMENTS WITH PROFESSIONAL SECTOR (MOST RELEVANTS)

- **HORTIFRUT** – (https://hortifrut.com) – Development of a novel system for Variable Rate Application of Pesticides in Blackberries. January 2020 – April 2021. Scientific responsible: Prof. Emilio Gil. Budget: 60.000 €
- **NUFRI** – (http://www.nufri.com) – Implementation of a sprayer's management program with the aim to reduce by 50% the use of PPP in apple production. 2019-2020. Scientific responsible: Prof. Emilio Gil. Budget: 30.000 €.
- **BELCHIM** – (https://belchim.es) – Development and validation of sprayer prototype for winter spray application process in vineyard against esca grape disease (Phaeoacremonium aleophilum). 2019-2021. Scientific responsible: Prof. Emilio Gil. Budget: 25.000 €
- **ANSEMAT** – (https://www.ansemat.org)- Development of a software to evaluate the degree of accomplishment of EU Directive 127/2009/EC of new sprayers. Scientific responsible: Prof. Emilio Gil. Budget: 25.000 €
- **TOPPS on farm**. ECPA – European Crop Protection Association. 2019 – 2021. Scientific responsible: Prof. Emilio Gil. Budget: 60.000 €
- **SYNGENTA IBERIA, S.A**. – (https://www.syngenta.es) – Development of an App for educational purposes on the implementation of Best Management Practices during spray application. Scientific responsible: Prof. Emilio Gil. Budget: 6.000 €
- **MIGUEL TORRES, S.A**. Variable rate application of plant protection products based on prescription maps. (https://www.torres.es). February 2018 – February 2019. Scientific responsible: Emilio Gil. Budget: 8.140 €.
- **BAYER CROP SCIENCE** – (https://www.cropscience.bayer.es) – Field evaluation of different spray echnolgies to define the most suitable conditions for PPP trials during registration process. Scientific responsible: Prof. Emilio Gil. 2018
- **SYNGENTA IBERIA S.A**. Efficiency tests to evaluate different nozzles in rice. Syngenta Iberia S.A. (https://www.syngenta.es). 2018. Scientific responsible: Emilio Gil. Budget: 11.000 €.
- **BAYER CROPSCIENCE**. Easyflow – Close Transfer System evaluation. Evaluation of the efficiency, operability and safety. Bayer CropScience S.
- **SYNGENTA IBERIA, S.A**. Evaluation of a fixed spray system for pesticide application in apple trees. Syngenta Iberia S.A. (https://www.syngenta.es). 2017. Scientific responsible: Emilio Gil. Budget: 8.000 €.
- LECHLER

BOOKS AND BOOK CHAPTERS

- *Dias de Campo*. 2019. Gil, E. Colección Real Academia Eurpoea de Doctores. ISBN: 978-84-09-15178-3. 258 pp.
- *Manual del fabricante. Requisitos para la fabricación de equipos de aplicación de productos fitosanitarios. Basado en la Directiva 2009/127/CE y en la Normas armonizadas UNE-EN-ISO 16119-1.2 y 3*. Gil, E. 2017
- *Manual de inspección de equipos de aplicación de fitosanitarios en uso. Normas UNE EN ISO 16122:1,2 y 3. Gil, E.; Gracia, F. Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente. Madrid, diciembre 2017. ISBN-13: 978-8449114908*
- *Aspects of Applied Biology 132 International Advances in Pesticide Application* P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.). Castelldefels, Barcelona (SPAIN).2016.
- Gil, E.; Arnó, J.; Llorens, J.; Sanz, R.; Llop, J.; Rosell-Polo, JR.; Gallart, M.; Escolà, A. 2015. *Advances technologies for the improvement of spray application techniques in Spanish viticutlture: An overview. In: Environmentally Sustainable Viticulture: Practices and Practicality, 2015, pp. 181-209. Apple Academic Press, Inc. ISBN 9781771881128, New York. https://doi.org/10.1201/b18226*
- *Manual de inspección de equipos de aplicación de fitosanitarios en uso.* Gil, E. Gracia, F., Escolà, A. 2012. Ministerio de Agricultura, Alimentación y Medio Ambiente. ISBN: 978-84-491-1159-4.
- *Buenas prácticas agrícolas para reducir la deriva, la escorrentía y la erosión*. Gil. E., González, E. 2014. 2014. Ministerio de Agricultura, Alimentación y Medio Ambiente. ISBN:

978-84-491-1408-3

- *Buenas practicas fitosanitarias para una mejor calidad del agua*. Gil, E.; Bernat, C.; Escolà, A.; Llop, J.; Llorens, J.; Queraltó, M. 2008. Ministerio de Agricultura, Pesca y Alimentacion. M-5578-2008.
- *Tratamientos en viña: equipos y técnicas de aplicación.* Gil, E. 2003. Ed. UPC. 978-84-8301-691-6.
- Gil, E., Gracia, F. 2008. Tecnología para la aplicación de los purines. En: Informe para la mejora de la gestión de los purines porcinos en Catalunya. Ed. Consell Assesor per al Desenvolupament Sostenible, 2008, ISBN 8439377126, 9788439377122, 225 paginas
- Gil, E. 2008. Tractores. En: Massey Fergusson 50 años. Editorial B&H Editores, Madrid, 2008.
- Gil, E. *Banda de Música de Rivas. Conmemoración de un siglo y cuarto de andanzas musicales*. Ed. Diputación Provincial de Zaragoza, 2008.
- Gil, E. *Historia del socialismo y el sindicalismo en Rivas. 1929-1939, una década que dejó huella*. Diputación Provincial de Zaragoza.
- Gil, E. *Entre el Riguel y La Bardena*. Zaragoza, 2011. http://www.cincovillas.com/el-sabinarentre-el-riguel-y-la-bardena/
- *Zarpazos en el alma*. Gil, E. Ed. Los libros del Gato Negro. Zaragoza, Marzo 2017. ISBN 9788494633225.

PARTICIPATION IN CONGRESSES, SYMPOSIUMS, WORKSHOPS AND CONFERENCES (LAST 5 YEARS)

- Garcia-Ruiz, F., Gil, E. 2023. Variable Rate Application in mountain viticulture based on canopy maps generated by satellite remote sensing. 16th Workshop on Spray Application in Fruit Growing. Montpellier (France), September 2023.
- Gil, E. et al. Diseño y aplicación de un sistema inteligente de pulverización variable para tratamientos fitosanitarios en viña y olivo – PIVOS y ADOPTA. AGROINGENIERIA 2023. Septiembre, 2023. Sevilla.
- Emilio Gil, Javier Campos, Ramón Salcedo, Francisco García-Ruiz. 2023. Variable Rate Application in fruit orchards and vineyards in Europe: canopy characterization and system improvement. An ASABE Meeting Presentation DOI: https://doi.org/10.13031/aim.2301130
- Marco Grella, Jordi Llop, Paolo Marucco, Javier Campos, Paolo Balsari, Fabrizio Gioelli and Emilio Gil. 2022. A DSS to Reduce the Spray Application Rate in Vineyards: Dosviña®, a Tool for Pesticide Saving. IV Euromediterramean Conference for environmental Integration. Sousse, Tuniissia, October 2022.
- Gil, E. 2022. Research, extension and training: a good combination to reduce the amount of pesticides in fruit and vineyards. What research to meet the pesticides reduction objectives embedded in the European Green Deal. Dijon, France, 2-3- June 2022
- Gil, E; Salcedo, R; Balsari, P; Herbst, A; Kole, J; Douzals, J.P. 2023. BTSF training course on Pesticide Application Equipment: Eight years of education on inspection benefits around Europe. Workshop on Standardised Procedure for the Inspection of the Sprayers in Europe – SPISE 6. Wageningen, May 2022.
- Paper Number: 2301130
- Gil, E. Hi-Tech on spray application process. Is that the solution? Workshop “Reducing exposure to pesticides – experience so far and next steps towards more sustainable plant protection” 17 January 2020, 8:30 to 18:00, 21 rue du champ de Mars, Brussels. DG SANTE, Europeal Commission
- Gil, E.; Ortega, P.; Salas, B.; Andreu, F.; Berger, L.T.; Fountas, S.; Nuyttens, D. 2020. Development of a methodology to select the optimal application technologies in apple crop – EU project OPTIMA H2020. International Advances in Pesticide Application, Brighton (UK), January 2020.
- Gil, E.; Gallart, Mo.; Gioelli, F.; Balsari, P.; Koutsouris, A.; Codis, S.; Nuyttens, D.; Fountas, S. 2020. INNOSETA – An H2020 European project to fill the gap between research and professional users in crop protection. International Advances in Pesticide Application, Brighton (UK), January 2020.
- Ortega, P.; Salas, B.; Balsari, P.; Polder, G.; Fountas, S.; Nuyttens, D.; Jesus, J.; Balafoutis, T.; Gil, E 2020. H2020 – OPTIMA – Optimised Pest Integrated Management to precisely detect and control plant diseases in perennial crops and open-field vegetables International

Advances in Pesticide Application, Brighton (UK), January 2020.

- Badules, J.; Gil, E.; García-Ramos, F.J. 2020. Simulation of pesticide application in vineyards using CFD: study of drift and treatment optimization. International Advances in Pesticide Application, Brighton (UK), January 2020.
- Gil, E. 2019. Proyecto Innoseta: acercando la ciencia al campo para una protección de cultivos segura y sostenible 15º Symposium Nacional de Sanidad Vegetal, Sevilla 23, 24 y 25 de enero de 2019.
- Campos, J.; Gallart, M.; Llop, J.; Gil, E. 2019. Monitoring site-specific spraying in vineyards from prescripción map obtained with a UAV. 12th European Conference on Precision Agriculture, Montpellier, France.
- Gil, E., Llop, J. 2018. DOSAVIÑA, new APP to determine the optimal amount of PPP/water in spray application in vineyards. In: Workshop on Dose Expression. Universitat Politècnica de Catalunya, Castelldefels, November 2018.
- Gil, E. 2018. Importance of welladjusted sprayer to guarantee the dose expression functioning. In: Workshop on Dose Expression. Universitat Politècnica de Catalunya, Castelldefels, November 2018.
- Miranda-Fuentes, A.; Cuenca, A.; Godoy-Nieto, A.; Gonzalez-Sánchez, EJ.; Gil, E.; Llorens, J.; Gil-Ribes, J. 2018. Reducing spray drift by adapting the spraying equipment to the canopy shape in olive orchards with isolated trees. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 132 International Advances in Pesticide Application. Brighton (UK). 2018
- Gil, E.; Salcedo, R.; Campos, J.; Llop, J.; Ortega, P.; Gallart, M. 2018. Orchard sprayer's evaluation according ISO 16119-3. Need to support manufacturer's procedure. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 132 International Advances in Pesticide Application. Brighton (UK). 2018
- Gil, E.; Salcedo, R.; Gallart, M.; Campos, J.; Llop, J.; Roettele, M. 2017. Valoración sobre la actuación de los agricultores respecto a la contaminación del agua durante la aplicación de fitosanitarios (proyecto europeo TOPPS). In: IX Congreso Ibérico de Agroengenharia 2017; 4 al 6 de septiembre, Bragança (Portugal).
- Salcedo, R.; Llop, J.; Gallart, M.; Campos, J.; Ortega, P.; Gil, E. 2017. Estudio de la turbulencia del aire y su efecto en la distribución de producto en carretillas adaptadas para tratamientos en invernaderos. In: IX Congreso Ibérico de Agroengenharia 2017; 4 al 6 de septiembre, Bragança (Portugal).
- Campos, J.; Gil, E.; Gallart, M.; Llorens, J.; Salcedo, R.; Llop, J. 2017. Influence of sprayer type, air settings and nozzle type on drift during spray application in vineyard. Effect of canopy density on spray retention. In: Suprofruit 2017 – 14th Workshop on Spray Application in Fruit Growing. Hasselt (Belgium), May 2017.
- Salcedo, R.; Llop, J.; Chueca, P.; Garcerá, C.; Gallart, M.; Campos, J.; Ortega, P.; Gil, E. 2017. 2D CFD simulations of the air profile of three sprayers adapted to tomato crops in greenhouse conditions. In: Suprofruit 2017 – 14th Worhshop on Spray Application in Fruit Growing. Hasselt (Belgium), May 2017.
- Roettele, M.; Gallart, M.; Gil, E. 2017. Perceptions on how to reduce the risk of Plant Protection Products (PPP) losses to water in fruit production. In: Suprofruit 2017 – 14th Worhshop on Spray Application in Fruit Growing. Hasselt (Belgium), May 2017.
- Llorens, J., Gallart, M., Llop, J., Miranda-fuentes, A., & Gil, E. 2016. Difficulties to apply ISO 22866 requirements for drift measurements. A particular case of traditional olive tree plantations. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 132 International Advances in Pesticide Application (pp. 31-37). Castelldefels, Barcelona (SPAIN).
- Gil, E. Gracia, F., Gallart, M., Llop, J., Llorens, J. 2016. From international to local scope. Training activities to improve the effective and profitable SUD implementation. In P. Balsari, S. E. Cooper, E. Gil, C. R. Glass, W. Jones, B. Magri, J. Van de Zande (Eds.), Aspects of Applied Biology 132 International Advances in Pesticide Application. Castelldefels, Barcelona (SPAIN).
- Gil, E.; Balsari, P.; Douzals, JP.; Herbst, A.; Kole, J. 2016. International training courses on inspection and calibration of pesticide application equipment. A European Commission Directorate General for Health and Food Safety initiative. Sixth European Workshop on Standardised Procedure for the Inspection of the Sprayers in Europe – SPISE 6. Barcelona, September 2016.
- Gil, E. Llop, J., Gallart, M., Valera, M., Llorens, J. 2015. Design and evaluation of a manual device for air flow rate adjustment in spray application in vineyard. In: SuproFruit 2015 - 13th

Worhshop on Spray Application in Fruit Growing. Lindau (Germany), July 2015.

- Llop, J., Gi, E., Gallart, M., Llorens, J. 2015. mprovements of spray applications in greenhouses using hand-held trolleys with air assistance. In: SuproFruit 2015 - 13th Worhshop on Spray Application in Fruit Growing. Lindau (Germany), July 2015.
- Gil E., M Gallart, A Picón, J Echazarra, R Barrio, C Sampedro, A Barranco, S Rainieri, A Ortiz, A Díez-Navajas. 2015. Project LIFE-FITOVID- Implementation of Demonstrative & Innovative Strategies to reduce the use of phytosanitary products in viticulture. In: *SuproFruit 2015 - 13th Worhshop on Spray Application in Fruit Growing.* Lindau (Germany), July 2015.
- González, E.; Román, J.; Gil, E.; Gallart, M. 2014. Train Operators to Promote best Practices and Sustainability-PROtection WAter from DIffuse Sources (TOPPS-Prowadis). *13th IUPAC Congress*, Agro 416. San Francisco (USA)
- Gil, E.; Gallart, M.; Llop, J.; Ercilla, M.; Domènech, F.; Masip, P. 2014. Effect of low-drift nozzles on the biological effectiveness to control powdery mildew in vineyards. Procedings of the *7th International Workshop on Grapevine Downy and Powdery Mildew*, pp. 51-54. Vitoria - Gasteiz, Spain.
- Balsari, Paolo; Gil, E.; Marucco, Paolo; Gallart, M.; Bozzer, C.; Llop, J.; Tamagnone, M. 2014. Study and development of a test methodology to assess potential drift generated by air-assisted sprayers. In *International Advances in Pesticide Applications. Association of Applied Biologists*, Oxford, UK.
- Gil, E.; Gallart, M.; Llorens, J.; Llop, J.; Bayer, T.; Carvalho, C. 2014. Spray adjustments based on LWA concept in vineyard. Relationship between canopy and coverage for different application settings. In: *International Advances in Pesticide Applications. Association of Applied Biologists*, Oxford, UK.
- Llop, J., Gil, E., Balsari, P.. 2014. Nozzle characterization of knapsack sprayers. *Workshop Developments in hand-held application techniques*, Castelldefels 2014
- Llorens, J., and A. Landers. 2014. Variable rate spraying: digital canopy measurement for air and liquid electronic control. In *International Advances in Pesticide Applications. Association of Applied Biologists*, Oxford, UK.
- Ercilla, M.; Gallart, M.; Llop, J.; Gil, E. 2014. Projecte formatiu per a la millora de les pràctiques fitosanitàries a la conca de l'Ebre. *XI Jornada de Protecció Vegetal*. Mengem sa., pp. 19-27. Barcelona, Spain.
- Gil, E., Jimenez, A., Gacía-Ramos, FJ. 2014. Manual for inspection of sprayers in use and PRITEAF, dedicated software for inspection of sprayers: success tools developed for the inspector's training process in Spain. *IV SPISE Workshop - Standardization Procedure for Inspection of Sprayers in Europe*. Montpelier (France), October 2014.
- Llop, J.; Gil, E.; Gallart, M.; Bayer, T.; Sánchez-Hermosilla, J. 2013. *VII Congreso Ibérico de Agroingeniería y Ciencias Hortícolas*, pp. 1-5. Madrid, Spain
- Gil, E.; Gallart, M.; Llop, J.; Ercilla, M. 2013. Formación para la prevención de la deriva: factor clave para la mejora de las aplicaciones de fitosanitarios. Proyecto TOPPS-Prowadis. *VII Congreso Ibérico de Agroingeniería y Ciencias Hortícolas*, pp. 1-6. Madrid, Spain.
- Gil, E.; Gallart, M.; Doruchowski, G.; Balsari, Paolo; Codis, S.; Marucco, Paolo; Roettele, M.; Herbst, A.; Pauwelyn, E. 2013. Drift mitigation training: Key point to improve pesticide use. *12th Workshop on Spray Application Techniques in Fruit Growing*, pp. 159-161. Valencia, Spain.
- Rinaldi, M.; Llorens, J.; Gil, E. 2013. Electronic characterization of the phenological stages of grapevine using a LIDAR sensor. *9th European Conference on Precision Agriculture*, pp. 603-609. Lleida, Spain.
- Llop, J., Gil, E., Gallart, M., Bayer, T., Sanchez-Hermosilla, J. 2013. Spray distribution produced by a hand-held trolley boom sprayer in greenhouses. *12th Suprofruit - Workshop on Spray Application Techniques in Fruit Growing*, Valencia 2013.
- Llop, J., Gil, E., Gallart, M., Bayer, T., Sanchez-Hermosilla, J. 2013. Efecto del número y tipo de boquillas en la calidad de las aplicaciones en invernaderos con barras verticales. *VII Congreso Ibérico de Agroingenieria y Ciencias Hortícolas*, Madrid 2013
- Llorens, J.; Gil, E.; Duarte, S.; Llop, J. 2012. First results using terrestrial LIDAR sensor for drift detection in vineyard spraying. *AgEng 2012 - International Conference of Agricultural Engineering*. Valencia (Spain), July 2012.
- Llop, J.; Gil, E.; Llorens, J. 2012. Inspecció d'equips d'aplicació de fitosanitaris. Experiència pilot al baix Llobregat: Necessitat imperiosa de millora. *X Jornada de Protecció Vegetal* ICEA, pp. 29. Castelldefels, Spain.
- Gil, E., Montemayor, V., Gracia, F. 2012. The official procedure for mandatory inspection of

sprayers in use in Spain. How to deal with regional autonomous authorities. *IV SPISE Workshop - Standardization Procedure for Inspection of Sprayers in Europe*. Lana (Italy), October 2012.

- Gallart, M.; Gil, E.; Llorens, J.; Llop, J.; Duarte, S. 2012. TOPPS-PROWADIS: Un nou projecte per reduir la contaminació de les aigüe. *X Jornada de Protecció Vegetal ICEA*, pp. 31. Castelldefels, Spain.
- Gil, E.; Llorens, J.; Llop, J. 2012. New technologies adapted to alternative dose expression concepts. *Aspects of applied Biology, 114, International Advances in Pesticide Application*, pp. 325-333. Wageningen, Netherlands.
- Gil, E.; Gallart, M.; Llorens, J.; Llop, J. 2012. Determination of Drift Potential Value (DPV) for different flat fan nozzles using a horizontal drift test bench. *AgEng 2012 - International Conference of Agricultural Engineering*. Valencia (Spain), July 2012.
- Llop, J., Gil, E., Llorens, J. 2011 Campaña de inspecciones en el Baix Llobregat (Barcelona): necesidad imperiosa de mejora del sector productivo. *VI Congreso Ibérico de Agroingenieria y Ciencias Hortícolas,* Evora (Portugal) 2011.
- Gil, E., Llorens, J., Llop, J. 2011. DOSAVIÑA: Five years of successful experiences in field tests. *13th Suprofruit - Workshop on Spray Application Techniques in Fruit Growing*. Bergerac, France.
- Gil, E.; Llorens, J.; Llop, J. 2011. Proyecto EOS: Environment Optimized Sprayer, una herramienta para la clasificación de equipos de aplicación. *VI Congreso Ibérico de Agroingenieria y Ciencias Hortícolas*, Evora (Portugal) 2011.
- Llorens, J., Gil, E., Llop, J. 2011. The error of speed and path deviation during proportional spray application in vineyard. Analysis and consequences. *13th Suprofruit - Workshop on Spray Application Techniques in Fruit Growing*. Bergerac, France.
- Gil, E.; Llorens, J.; Llop, J. 2010. Precision viticulture: use of new technologies to improve efficiency in spray applications in vineyard. Conference: *Technology and Management to Increase the Efficiency in Sustainable Agricultural Systems*, 2009. http://journals.sfu.ca/cigrp/index.php/Proc/issue/archive
- Llop, J., Parera, J.; Llorens, J.; Gil, E. 2010. Aplipur, herramienta para la regulación de los equipos de aplicación de purines. International Workshop on Anaerobic Digestion of Slaughterhouse Waste. Barcelona, June 11th 2010. ISBN 978-84-936421-2-9, págs. 157-162
- Gil, E. 2007. Variable PPP dose rate application controlled by crop identification system based on ultrasonic sensors in vineyard. : *9th Workshop in Sustainable Plant Protection Tecnhiques in Fruit Growing*. Alnarp (Sweeden), 2007.
- Escolà, A.; Camp Feria-Carod, Fernando; Solanelles, F.; Llorens, J.; Planas, S.; Rosell, J.; Gràcia Aguilà, F.; Gil, E.; Val, L. 2007. Variable dose rate sprayer prototype for dose adjustment in tree crops according to canopy characteristics measured with ultrasonic and laser lidar sensor. *ECPA-6th European Conference on Precision Agriculture*, Skiathos (Greece), 2007.
- Gil, E. 2007. Proyecto TOPPS: buenas prácticas, mejor protección del agua. Relación entre TOPPS y la propuesta de directiva europea sobre Uso Sostenible de los Fitosanitarios. *29 Jornada de Productos Fitosanitarios. IQS*. Barcelona (Spain), 2007.
- Gil, E. 2007. Maquinaria para la aplicación de residuos. *II Congrés d'Agricultura, Alimentació i Medi Ambient*. Castelldefels (Barcelona).
- Gil, E. 2006. DOSA, instrumento para la optimización de la dosis de los tratamientos fitosanitarios en cultivos arbóreos. *28 Jornada de Productos Fitosanitarios. IQS*. Barcelona, Octubre 2006.
- Landers, A.; Gil, E. 2006. The development of two vertical patternators to improve deposition within the canopy and reduce drift. *Great Lakes Fruit Workers Annual Meeting. Fruit Workers*. 2006. New York (USA).
- Gil, E. 2006. : Inspection of sprayer in use: a European Sustainable Strategy to Reduce Pesticide Use in Fruit Crops. *ASABE International Meeting*. Oregon (USA), July 2006.
- Landers, A., Gil, E. 2006. Development and Validation of a New Deflector System to Improve Pesticide Application in New York and Pennsylvania Grape production Areas. *ASABE International Meeting*. Oregon (USA), July 2006.
- Gil, E. 2006. Software to determine the optimal volume rate for pesticide applications in grapes. *57th Annual Finger Lakes Grape Grower's convention*. Cornell University. 2006. New York (USA).
- Gil, E. 2006. The Spanish perspective on pesticide application issues on international standards and regulatory demands. *AAB Conference - International advances in pesticide*

application 2006. Cambridge (UK), January 2006.

- Escolà, A.; Rosell, J.; Massana, P.; Planas, S.; Val, L.; Camp, F.; Gràcia, F.; Solanelles, F.; Llorens, J.; Vallés, J.; Gil, E. 2005. Tree canopy volume measurement with ultrasonic sensors in fruit orchards, vineyards and citrus groves. *8th Workshop on spray application techniques in fruit growing*. Barcelona, July 2015, Spain.
- Sanz, R.; Llorens, J.; Ribes-Dasi, M.; Masip, J.; Arnó, J.; Vallés, J.; Escolà, A.; Massana, P.; Camp, F.; Palacín, J.; Solanelles, F.; Planas, S.; Val, L.; Rosell, J.; Gil, E.. 2005. First results of a non-destructive LIDAR system for the characterization of tree crops as a support for the optimisation of pesticide treatments. *8th Workshop on spray application techniques in fruit growing*. Barcelona, July 2015, Spain.
- Gil, E.; Escobar, C.; Planas, S.; Rosell, J.; Val, L. 2005. Pesticide dose adjustment in vineyard. Relationship between the crop characteristics and the quality of the applications. *8th Workshop on spray application techniques in fruit growing*. Barcelona, July 2015, Spain.
- Sanz, R.; Llorens, J.; Arnó, J.; Vallès, J.; Escolà, A.; Massana, P.; Camp Feria-carot, Fernando; Gil, E.; Masip Vilalta, Joan; Ribes-Dasi, M.; Solanelles, F.; Rosell, J.; Palacín, J. 2005. Idoneidad y manejo de los datos de un escáner láser (LIDAR) para la caracterización de determinados parámetros vegetativos de interés en frutales y viña. *III Congreso de Agroingeniería.* 2005. Leon (Spain).
- Soliva, M.; Bernat, C.; Gil, E.; Martínez, F.; Pujol, M.; Sabaté, J.; Valero, J. 2004. Organic waste management in education and research in agricultural engineering schools. *IX International Conference on Engineering Education in Sustainable Development*. Almeria (Spain), 2004.
- Gil, E. 2004. Pesticide dose adjustment in vineyard. Relation between crop characteristics and quality of applications. International Conference *Environmentally Friendly Spray Application Techniques*. CEFSAT. 2004, Warsaw (Poland), 2004.
- Gracia Aguilá, Felipe; Gil, E. 2004. Importancia de la maquinaria de aplicación en los tratamientos. *26 Jornada de Productos Fitosanitarios IQS*. Barcelona (Spain), 2004.
- Gil, E., Gracia, F. 2004. Compulsory inspection of sprayers in use: Improving its efficiency by adding training and formative aspects. *First European Workshop on Standarized Procedure for the inspection of Sprayers in Europe (SPISE)*. Braunsweigh (Germany), 2004.
- Bernat, C., Gil, E. 2003. La aplicación de herbicidas desde el punto de vista del agricultor. El futuro de las nuevas tecnologías. *IX Congreso de la Sociedad Española de Malherbología. Malherbología: investigación y práctica*. Barcelona (Spain), 2003.
- Gil, E. 2003. How to increase the efficiency of pesticide applications: a coordinate actuation involving institutional actions and farmer's training. *Racjonalna technika ochrony roslyn. Instytut Sadownictwa i Kwiaciarstwa*. 2003.
- Gil, E. 2003. Evaluación de la aplicación de fitosanitarios en cultivos de porte bajo en Castilla y León. *II Congreso nacional de agro ingeniería*. Córdoba (Spain), 2003.
- Planas, S.; Escolá, A.; Solanelles, F.; Camp, F.; Gil, E.. 2003. Programa para la determinación del volumen de caldo a aplicar en tratamientos fitosanitarios en frutales y olivar. *II Congreso nacional de agro ingeniería*. Córdoba (Spain), 2003.
- Gil, E. 2003. Programa para la determinación del volumen de caldo a aplicar en tratamientos fitosanitarios en viña. *II Congreso nacional de agro ingeniería*. Córdoba (Spain), 2003.
- Planas, S., Gil, E. 2003. Preliminary software to determine the optimal volume rate for pesticide applications in vineyard. *VII Workshop on Spray Applications Techniques in Fruit Growing*. Cuneo (Italy), 2003.
- GIL, E. (2002) Crop adapted spraying in vineyard. Leaf area distribution (crop profile) and uniformity of deposition (CV) as a tool to evaluate the quality of applications. *International Conference on Agricultural Engineering, AgEng'02*. Budapest (Hungria). 2002.
- Gil, E., Planas, S. 2002. Tratamientos de calidad en viña. *V Jornada de Protecció Vegetal. ICEA*. Barcelona, 2002
- Gracia, F.; Bustos, A.; Gil, E., Urdillo, MC. 2001. La inspección de máquinas de tratamientos fitosanitarios en España. *I Congreso Nacional de Ingeniería para la Agricultura y el Medio Rural*, Valencia, 19-21 de septiembre de 2001
- Gil, E. 2001. Inspection of sprayers in use. Quality improvement by increasing farmer's formation. *VIth Workshop on Spraying Application Techniques in Fruit Growing*. Lovaina (Bélgica). 30-31 de Enero de 2001.
- Gil, E. 2001. Actual state of sprayers in use in vineyards in Spain. Quality improvement by increasing farmer's formation. *VIth International Symposium on Plant Protection for Viticulture and Fruit Cultivation*. Stuttgart (Alemania). 14 -16 de Mayo de 2001.

- Gil, E., Gimenez, A. 2001. N-Sensor. Sistema de aplicación selectiva de nitrógeno en tiempo real. *XXIX Conferencia Internacional de Mecanización Agraria*. Zaragoza (España), 30 marzo 2001.
- Gil, E. 2001. Guía para la selección y utilización de equipos para tratamientos fitosanitarios en viña. *I Congreso Nacional de Ingeniería para la Agricultura y el Medio Rural*. Valencia, 19-21 de Septiembre de 2001.
- Gil, E. 2000. Tratamientos fitosanitarios en viña. Mejora de la calidad a través de la formación. *IV Congrès ICEA*. Tarragona (España), 20-21 de Octubre de 2000.
- Gil, E. 2000. Characterization of two different conceptions of pneumatic sprayers in vineyard applications. *International Conference on Agricultural Engineering, AgEng'00*. Warwick (Gran Bretaña). 4 - 7 de Julio de 2000.
- Gil, E., Badiola, J., Armengol, E., Bernat, C. 1998. Disseny d'un equip mòbil pel control de la distribució en polvoritzadors hidropneumàtics. *III Jornada de Protecció Vegetal. ICEA*. Barcelona, noviembre de 1998. (Poster)
- Gil, E., Barrufet, J.M., Cluet, M., Teruel, JA. 1998. Improvement of the pesticide applications in vineyard. Relationship between methodology of application and quality parameters. *International Conference on Agricultural Engineering, AgEng'98*. Oslo (Noruega). 24 - 27 de Agosto de 1998.
- Soliva, M., Bernat, C., Gil, E., Martínez, X. Sabaté, J., Seguí, J., Pujol, M., Valero, J. 1998. Aplicación agrícola de residuos orgánicos: diferencias de comportamiento según origen. *Conferencia Anual Ategrus*. Madrid, Junio de 1998.
- Gil, E., Carnasa, R. 1996. Working quality of spacing drills. Effects of sowing speed and type of seeds. *International Conference on Agricultural Engineering, AgEng'96*. Madrid (España). 23 - 26 de septiembre de 1996.
- Gil, E., Badiola, J., Armengol, E., Bernat, C. 1996. Design and verification of a moving equipment for orchard and vineyard sprayer calibration. *International Conference on Agricultural Engineering, AgEng'96*. Madrid (España). 23 - 26 de septiembre de 1996 (Poster)
- Soliva, M., Martínez, X., Perez, X., Valero, J., Gil, E. 1995. Influencia de la aplicación de residuos orgánicos en la producción de col de Milán cv. Savoy King. *VI Congreso de la Sociedad Española de Ciencias Hortícolas*. Barcelona, Abril de 1995.
- Gil, E., Nordbo, E. 1993. Laboratory measurements of drift potential with conventional nozzles, low drift nozzles and air assistance. *ANPP-BCPC 2nd International Symposium on Pesticide Application Techniques.* Strasbourg (Francia), September.

INVITED CONFERENCES (MOST RELEVANT)

- FALTA LA DEL MASTER DE ARGENTINA DE ESTE AÑO, Y MUCHAS MAS
- EL CURSO DE CERDEÑA
- Gil, E. 2022. Pain the drift – Understanding the impact of pesticide drift from a holistic view point. Airblast spray application and modelling conference. May 2022. University of California – Agriculture and natural resources. https://ucanr.edu/sites/ASAM/
- Gil, E. 2022. Success and adoption of Dosaviña Decisoon Support System. Airblast spray application and modelling conference. May 2022. University of California – Agriculture and natural resources. https://ucanr.edu/sites/ASAM/
- Gil, E. 2020. Maquinaria de aplicación en cultivos sostenibles en viticultura", en el marco del Curso Control Biológico de Plagas y Enfermedades" organizado por HAZI (www.hazi.eus). Diciembre 2020.
- Gil, E. 2020. Formación y nuevas tecnologías para una protección de cultivos sostenible. Agricultura de Precisión en protección de cultivos. Programa de Maestría en Salnidad Vegetal y en Mecanización Agraria. Curso: Aplicaciones fitosanitarias. Universidad Nacional de La Plata. Facultad de Ciencias Agrárias y Forestales. Argentina, octubre 2020.
- Gil, E. 2020. Machines: available innovation. Workshop: Reducing exposure to pesticides – esperiences and next steps towards more sustainable plant protection. European Commission – Directorate General for Health and Food Safety. Brussels, January 17th 2020.
- Gil, E. 2019. Aplicación de productos fitosanitarios: situación actual y principales problemas a resolver. V Seminario de Tecnología de Aplicación aérea y terrestre – CENGICAÑA – Centro Guatemalteco de Investigación en caña de Azucar. Santa Lucía (Guatemala),

septiembre 2019.

- Gil, E. 2019. Nuevas tecnologías para un uso sostenible y eficaz de los productos fitosanitarios. Proyectos INNOSETA y OPTIMA, una apuesta europea para un uso eficaz de los productos fitosanitarios. V Seminario de Tecnología de Aplicación aérea y terrestre – CENGICAÑA – Centro Guatemalteco de Investigación en caña de Azucar. Santa Lucía (Guatemala), septiembre 2019.
- Gil, E. 2019. VII Agrievolution Summit.Success stories: Education and Training. Agrievolution Summit, Madrid, October 4th 2019.
- Gil, E. 2019. Avanços na tecnologia de aplicaçao para fruticultura. IX SINTAG – Simposio Internacional de Tecniologia de Aplicaçao. 09 a 11 de setembro de 2019 – Campo Grande/MS (Brasil).
- Gil, E. 2019. Agricultura 4.0 ¿realitat o ficció? Projectes OPTIMA e INNOSETA: Apuesta Europea per portar la ciència al camp. En: Jornada Impacte de l'agricultura 4.0 en el marc de la PAC. Organiza ICEA/ Consejo COITA/CETAFC – Demarcación de Barcelona. Febrero 2019.
- Gil, E. 2019. El futuro en la aplicación de productos fitosanitarios, INNOSETA y OPTIMA, proyectos para una protección de cultivos inteligente. En: Jornada Técnica. Innovación hacia la agricultura de precisión en el nuevo regadío. Uso de teledetección, sistemas de información geográfica, GPS y herramientas para la toma de decisiones. Organiza: TRAGSA. León, 13 de febrero de 2019.
- Gil, E. 2019. Proyecto INNOSETA: Acercando la ciencia al campo para una protección de cultivos segura y sostenible. 15 Symposiun Sanidad Vegetal. Sevilla, 23, 24 y 25 de enero de 2019.
- Gil, E. 2018. Proyecto INNOSETA: Cómo llenar el hueco entre la investigación y el sector profesional. En: FORUM Smart-Agro – El potencial de la Agricultura 4.0. Zaragoza, 19 de septiembre de 2018.
- Gil, E. 2018. El futuro de la aplicación de productos fitosanitarios. INNOSETA y OPTIMA, proyectos para una protección de cultivos inteligente y sostenible. En: IV Foro Técnico en Sanidad Vegetal. Implantación de nuevas herramientas para la protección de cultivos. Zaragoza, 27 de noviembre de 2018.
- Gil, E. 2018. Improving spray application in viticulture: from basic training to precision viticulture" – Invited seminar at Cornell University - July, 2018. https://sips.cals.cornell.edu/sites/sips.cals.cornell.edu/files/shared/Research%20Seminar%20-%20Emilio%20Gil.pdf
- Gil, E. 2018. Viticultura de precisió. Revolucío en les tecnologíes d'aplicació de fitosanitaris en vinya. Adaptació als canvis. En: XXIX Congrés Viticultura Sostenible – Associació Catalana d'Enòlegs i Enòlogues de Catalunya – 27 Abril 2018.
- Gil, E. 2018. Spray application in vineyard around the world. New technologies for a sustainable crop protection. In: VitiNord 2018. http://www.vitinord2018.org/programme/
- Gil, E. 2017. Nuevas tecnologías para una aplicación. Congreso: La Vid y el vino: nuevas herramientas para la protección integrada del viñedo. Logroño, 29 y 30 de Marzo de 2017.
- segura y eficaz de fitosanitarios en viña.
- Gil, E. 2017. Examining regulatory aspects of the field-Research and training actions to improve the pesticide application process. AG Formulation and Technology Congress – Facilitating innovation in agrochemical formulation and application technology. Amsterdam, November 2017. www.agformtechnology.com
- Gil, E. 2017. Agricultura de precisión: investigación y formación al alcance de todos. Conferencia Inaugural en las VII Jornadas Futuro en español – Nuevas tecnologías para la agroalimentación en España y América Latina. Bodegas Franco Españolas, Logroño. Viernes, 27 de octubre de 2017.
- Gil, E. 2017. Examining regulatory aspects of the field-Research and training actions to improve the pesticide application process. Ag Formulation & Technology congress. Amsterdam, The Netherlands, 22-23 November 2017.
- Gil, E. 2017. Aplicación de fitosanitarios en viña. Una visión global. Conferencia invitada en la Universidad Nacional Agraria La Molina, Lima (Perú). 4 de agosto de 2017.
- Gil, E. 2017. Ensayos de evaluación de equipos de aplicación de fitosanitarios: aspectos regulatorios y metodológicos. Conferencia invitada en la Universidad Nacional Agraria La Molina, Lima (Perú). 4 de agosto de 2017.
- Gil, E. 2015. Research training activities of Unit of Agricultural machinery - UMA-UPC. Faculty of Agriculture of Athens, **Athens (Greece),** September 2015.

- Gil, E. 2015. Spray application in viticulture. Research and extension activities in Spain. Ohio State University, **Columbus (Ohio) - USA**. May, 2015.
- Gil, E. 2015. Systèmes de contrôle destinés à maitriser l'application des produits phytosanitaires pour en optimiser l'usage. Racontre International, SITEVI, **Montpellier (France)**, Novembre, 2015.
- Gil, E. 2014. Advanced technologies to improve application techniques in viticulture. 3rd International Workshop on Plant Protection Machinery and Application Techniques. **Beijing (China)**, September2014.
- Gil, E. 2014. Advances technologies to improve spray application techniques in viticulture. 13th IUPAC Congress, Agro 538. **San Francisco (USA)**
- Gil, E. 2014. Assessment of spray application processes in vineyards around the world. 2014. 7th International Workshop on Grapevine Downy and Powdery Mildew. **Vitoria - Gasteiz, Spain**. 30 June - 4July
- Gil, E. 2014. Brasil. Avaliação de equipamentos de aplicação de fitossanitários: aspectos normativos e metodológicos. XLIII Congresso Brasileiro de Engenharia Agrícola - CONBEA 2014. **Campo Grande – MS (Brasil),** Julho de 2014
- Gil, E. 2014. Operationalizing BMPs - outreach and dissemination in Spain. TOPPS-PROWADS final event. **Brussels**, December 3rd 2014.
- Gil, E. 2014. Traitements phytosanitaires a la vigne : La situation en Espagne (point réglementaire et technique - état des recherches sur les techniques d'application) Conférence Internationale du Vinitech 2014. **Bordeaux** (France), December 4th 2014.
- Gil, E. 2014. Situación de las ITEAF en España. JORNADA TÉCNICA SOBRE INSPECCIÓN DE EQUIPOS DE APLICACIÓN DE FITOSANITARIOS, (ITEAF) Vegetal World **Valencia**, octubre 2014.
- Gil, E. 2014. Interés de las inspecciones de equipos de aplicación de fitosanitarios. Alianza Aragonesa Alimentaria. **Zaragoza**, September 2014.
- Gil, E. 2014. Proyecto TOPPS-Prowadis. Buenas prácticas y formación para evitar la contaminación de las aguas. Smart Fruit IPM International Congress. **Barcelona**, February 2014.
- Gil, E. 2013. Ways to improve your Spraying as an Operator - Alternativas para Mejorar los Sprays como un Operador. WSHA 109th Annual Meeting & NW Hort Expo Wenatchee Convention Center December 2, 3 & 4th, 2013 **Washington State University (USA**).
- Gil, E. 2013. Orchard Spray Application-a Global Perspective of Current Practices and Future Technology. WSHA 109th Annual Meeting & NW Hort Expo Wenatchee Convention Center December 2, 3 & 4th, 2013 **Washington State University (USA).**
- Gil, E. 2013. Ensayos de evaluación de equipos de aplicación de fitosanitarios: aspectos normativos y metodológicos Curso Tecnología en los equipos de aplicación de fitosanitarios. Universidad Internacional Menéndez Pelayo. **Huesca** UIMPP. April, 2013.
- Gil, E. 2013. Avances para la mejora de los tratamientos fitosanitarios en viña. Sintonía con el nuevo marco comunitario de uso de plaguicidas. Instituto de ciencias de la vid y el vino. Universidad de La Rioja, **Logroño** Julio 2013.
- Gil, E. 2013. Combinación de nuevas tecnologías y buenas prácticas para un uso seguro de plaguicidas. 12º Curso Internacional de Agricultura de Precisión y expo de máquinas precisas. **Córdoba (Argentina**), July 2013.
- Gil, E. 2013. Manejo de fertilizantes orgánicos. 12º Curso Internacional de Agricultura de Precisión y expo de máquinas precisas. **Córdoba (Argentina)**, Julio 2013.
- Gil, E. 2013. Proyecto TOPPS-Prowadis: Buenas Prácticas para evitar la contaminación de las aguas. Jornada Técnica: El Asesor en la aplicación de la Gestión Integrada de Plagas (GIP). Agro World **Valencia**, October 2013.
- Gil, E. 2013. Estrategia europea para la reducción de plaguicidas. Maquinaria apropiada de aplicación. International semminar "Equipos de aplicación para la reducción de plaguicidas y la obligatoriedad de la inspección y certificación de equipos en Europa. **Los Andes (Chile),** April 2013.
- Gil, E. 2013. Normativa europea sobre la inspección y certificación de equipos pulverizadores. Interantional Semminar "Equipos de aplicación para la reducción de plaguicidas y la obligatoriedad de la inspección y certificación de equipos en Europa. **Los Andes (Chile**), April 2013.
- Gil, E. 2013. Avances obtenidos en Europa tendientes a lograr la disminución del uso de plaguicidas. Instituto de Investigaciones Agropecuarias (INIA) y la Organización de Naciones Unidas para la Alimentación y Agricultura (FAO). **Santiago de Chile (Chile),** Septiembre

2013.

- Gil, E. 2013. Normativa sobre inspección de equipos de aplicación: presente y futuro. XXIV Jornada de Ciencia y Tecnología. Escuela Politécnica Superior de Huesca. Universidad de **Zaragoza**. April 2013.
- Gil, E. 2013. Buenas prácticas en el uso de productos fitosanitarios. Proyecto TOPPS-PROWADIS. JORNADA SOBRE EL USO SOSTENIBLE DE LOS PRODUCTOS FITOSANITARIOS. Universidad de la Laguna, **Tenerife**, Marzo 2013.
- Gil, E. 2013. Revisión de equipos de aplicación de fitosanitarios. XII Simposio de Sanidad Vegetal. Colegio Oficial de Ingenieros Técnicos Agrícolas de Andalucía Occidental. **Sevilla**, Enero 2013.
- Gil, E. 2012. Risk mitigation under Mediterranean agro-environmental conditions and Directive 2009/128/EC on the Sustainable Use of Pesticides. 14th Fresenius AGRO Conference Behaviour of Pesticides in Air, Soil and Water. **Mainz (Germany**), June 2012.
- Gil, E. 2012. TOPPS-PROWADIS "Buenas prácticas agrícolas para la protección del medio acuático. Workshop sobre la Directiva de Uso Sostenible de Fitosanitarios en España. AEPLA - Ministerio de Agricultura. **Madrid**, Julio 2012.
- Gil, E. 2012. History, organization and implementation of inspection of sprayers and air assisted sprayers in Spain. Workshop on Pesticide application equipment. European Commission, TAIEX - Implementation of sustainable use Directive in area of inspection of equipment for application of plant protection products. **Novi Sad (Serbia**), June 2012.
- Gil, E. 2012. Calibration and maintenance of sprayers and air assisted sprayers. Workshop on Pesticide application equipment. European Commission, TAIEX - Implementation of sustainable use Directive in area of inspection of equipment for application of plant protection products. **Novi Sad (Serbia),** June 2012.
- Gil, E. 2012. Modern techniques of pesticide application. Workshop on Pesticide application equipment. European Commission, TAIEX - Implementation of sustainable use Directive in area of inspection of equipment for application of plant protection products. **Novi Sad (Serbia)**, June 2012.
- Gil, E. 2012. Normalização mundial para as inspeções de pulverizadoresWorkshop sobre pulverizadores agrícolas. Procedimientos normalizads para inspeçao. Universidad Federal Santa María. **Santa María (Brasil),** Mayo 2012.
- Gil, E. 2011. Directive 2009/128/CE Sustainable Use of Pesticides Implementation process in Spain. Implementation of Sustainable Use of Pesticides. BayerCropSciences, **Lyon** December 2011.
- Gil, E. 2010. Sistema de inspección y control de equipos fitosanitarios. Eficiencia de los tratamientos fitosanitarios en viticultura. Seminario Internacional organizado por Estación Experimental Agropecuaria Mendoza INTA. **Mendoza (Argentina)**, October 2010.
- Gil, E. 2010. Viticultura de precisión. Nuevas tecnologías para la mejora de la eficiencia en la aplicación de fitosanitarios. Curso Internacional de Tecnología de Aplicación de Productos Fitosanitarios. Facultad de Agronomía de Montevideo. **Montevideo (Uruguay)**, Octubre 2010.
- Gil, E. 2010. Determinación del volumen de aplicación en viña. Alternativas. Curso Internacional de Tecnología de Aplicación de Productos Fitosanitarios. Facultad de Agronomía de Montevideo. **Montevideo (Uruguay)**, October 2010.
- Gil, E. 2010. Mecanización sostenible en viticultura. Conference on EcoSustainable Viticulture. **Vilafranca del Penedés (Barcelona)**, Mayo 2010.
- Gil, E. 2010. Spanish agriculture: an overview. International Seminar. University of Poznan. **Poznan (Poland)**, January 2010.
- Gil, E. 2010. Dosaviña: software to determine the optimal volume rate in spray application in viticulture. International Seminar. University of Poznan. **Poznan (Poland)**, January 2010.
- Gil, E. 2006 Software to determine the optimal volume rate for pesticide applications in grapes. 57th Annual Finger Lakes Grape Growers' convention. **Waterloo (New York)**, March 2006.
- Gil, E. 2006 How to improve pesticide application in apples. An overview of Spanish research activities. Lake Ontario Winter Fruit Schools. **Albion (New York)**, February 2006.
- Gil, E. 2006 How to improve pesticide application in apples. An overview of Spanish research activities. Lake Ontario Winter Fruit Schools. **Newark (New York)**, February 2006.
- Gil, E. 2006 New developments for efficient pesticide applications in berry crops. New York State Berry Growers Association Annual Meeting. **Syracuse (New York)**, February 2006.
- Gil, E. 2006 Spray coverage for onion thrips control - common sense and technology. 2006

Empire State Fruit & Vegetable Expo. **Syracuse (New York),** February 2006

- Gil, E. 2006 Spray drift mitigation in fruit spraying. 2006 Empire State Fruit & Vegetable Expo. **Syracuse (New York)**, February 2006
- Gil, E. 2006 European Spray Techniques - Towards a sustainable use of pesticides. 2006 Hudson Valley Fruit growers' school. **Kingston (New York)**, February 2006
- Gil, E. 2006.The Spanish perspective on Pesticide Application issues on international Standards and Regulatory Demands. Key note in International Advances in Pesticide Application 2006. Association of Applied Biologist. Robinson College, **Cambridge (UK)** January 2006.
- Gil, E. 2006. Equipment and techniques used for application of PPPs in Spain. Invited conference in Department of Food, Agricultural and Biological Engineering, The Ohio State University. **Columbus (Ohio)** May 2006.
- Gil, E. 2006. Equipment and techniques used for application of PPPs in Spain. Invited conference in the Application Technology Research unit, Agricultural Research service, United States Department of Agriculture. **Wooster (Ohio)** May 2006.
- Gil, E. 2005. Effective Application of Pesticides in Spanish Vineyard. Invited speaker in Seminar in New York State Agricultural Experiment Station, Department of Entomology, **Cornell University**. October 2005.

INTERNATIONAL STAGES

- **Hardi International Research Laboratory** – Copenhague (Denmark). Activity: PhD research. 27/07/1992 a 27/09/1992. Reserch grant: Generalitat de Catalunya.

- **Cornell University** – Ithaca (NY) – USA. Visiting Professor at College of Agricultural Life Sciences (Ithaca Campus, Cornell University). 08/08/2005 a 08/08/2006 (1 year). Financed by Ministerio de Educación y Ciencia: "Ayuda para estancia de profesores e investigadores en centros españoles y extranjeros.

INTERNATIONAL TRAINING COURSES AND OTHER COLLABORATIONS

- LO DE RMM DE BTSF
- LOS CURSOS DE CERDEÑA
- Responsible de la organización en impartición del curso "Calibración e inspección de equipos de aplicación de fitosanitarios en frutales y viñedos". Facultad de Agronomía, Universidad de la República de Uruguay. Septiembre 2019. http://www.fagro.edu.uy/index.php/noticias-internas/4256-nuevo-curso-con-el-prof-emilio-gil-de-la-universidad-politecnica-de-cataluna
- Training coordinator of CHAFEA/2019/BTSF/9603: Organization and implementation of training activities on inspection and calibration of pesticide application equipment in professional use under the Better Training for Safer Food initiative. DG SANTE, 2019-2022.
- Training coordinator of BTSF on-line training course on Risk Mitigation during Pesticide Use
- Director of Chair Syngenta-UPC (www.catedrasyngenta.upc.edu) for training and research activities.
- Training coordinator of CHAFEA/2014/BTSF/02: Organization and implementation of training activities on inspection and calibration of pesticide application equipment in professional use under the Better Training for Safer Food initiative. DG SANTE, 2014-2018.
- Expert advisor at Twinning Project SR12/IB/AG/01 - "Implementation of sustainable use of plant protection products and establishing systems for regular technical inspection of pesticide application equipment" – Advisor for Serbian government during 3 years (2014-2016) in the implementation process of mandatory inspection of sprayers in use in Serbia, according the Sustainable Use Directive
- Responsible of the three days training course for advisors at Washington State University – July 2016.
- Responsible of the organization of training course for advisor of Ministry of Agriculture in Cyprus – November 2016
- Expert Advisor for INIA – Chile for the establishment of a mandatory program of inspection of sprayers. 2013

INTERNATIONAL MEMBERSHIP AND STANDARDIZATION COMMITTEE'S ACTIVITY

- President of Internationa Jury ofl Fair on Agricultural Machinery – FIMA (Zaragoza)
- President of AESAVE (Asociación Española de Sanidad Vegetal).
- Miembro de la junta directiva de AGROINGENIERIA
- Selected as research expert **at EIP-FOCUS GROUP** in Precision Agriculture. Expertise group created by EU
- Member of **CEN** – European Committee of Normalization - Technical Committee (TC) 144 "Tractors and machinery for agriculture and forestry" Working Group (WG) 3 "Mobile machines and trailers – Spanish representative.
- Member of **ISO** – International Standardization Organization - Technical Committee (TC) 23 "Tractors and machinery for agriculture and forestry" Subcommittee (SC) 6 "Equipment for crop protection – Spanish representative
- Scientific advisor of the International PhD Course "Aspects of Application Technology" at Swedish University of Agricultural Sciences, Alnarp (Sweden). September 2007
- Full member of **Club of Bologna** (www.clubofbologna.org)
- Full member of **SPISE** – Standardised Procedure for Inspection of Sprayers in Europe – Responsible of TGW 1 – Certification of new PAE
- Member of **ASABE** – American Society of Agricultural and Biological Engineers
- Member of **AAB** – Association of Applied Biology
- Associated editor of several international journals: Spanish Journal of Agricultural Research (2011-2015), Journal of Agricultural Engineering, Biosystem Engineering (special issue).
- Active reviewer at the most important international journals on the scope of agriculture and engineering.

ORGANIZATION OF INTERNATIONAL CONFERENCES, WORKSHOPS AND SEMINARS

- CONVENOR de IAPA
- Organization of Dose Expression Workshop in collaboration with Association of Applied Biologist. Barcelona, November 6-7 2018.
- President of the Organizing Committee of 5th Workshop on Spray Application Techniques in Fruit Growing – Barcelona, 2005.
- President of the Organizing Committee of International Advances on Pesticide Application – Aspects of Applied Biology – Barcelona, January 2016
- President of the Organizing Committee of 6th International Workshop of SPISE – Standardization Procedure for Inspection of Sprayers in Europe. Barcelona, September 2016.

AWARDS AND HONORIFIC MENTIONS

- Special award best PhD in Sciences at Universitat Politecnica de Catalunya - 2023
- Award Generalitat de Catalunya for the Best App in Rural sector – DOSAVIÑA - 2023
- 2019. Member of Royal European Academy of Doctors. October 2019. https://raed.academy/en/acto-ingreso-raed-emilio-gil-moya-6-2/
- 2019. Award for the development of DOSAVIÑA App. Plataforma Tecnológica del Vino, Madrid, diciembre 2019. http://www.ptvino.com/es/premio-de-innovacion-ptv-2019/
- 2016. Award in recognition to the activity regarding Sustainability in Agriculture. Toledo. For a more sustainable agriculture in Spain.
- 2015. Sensors Best paper award - Ultrasonic and LIDAR Sensors for Electronic Canopy Characterization in Vineyards: Advances to Improve Pesticide Application Methods Sensors 2011, 11(2), 2177-2194
- 2014. Best poster award of IUPAC 2014 (www.iupac2014.org). Train Operators to Promote best Practices and Sustainability-Protection water from diffuse Sources (TOPPS-Prowadis)
- 2004. Award best PhD in agricultural sector (accesit). Premio Fertiberia. Metodología y criterios para la selección y utilización de equipos de aplicación de fitosanitarios para la viña. Madrid, January 2004.
- 2002. Award for research activity in viticulture sector. Premio del Concurso de Investigación vitivinícola "A. Manuel Campos Lafuente" organizado por Feria de Zaragoza. Racionalización de las aplicaciones de fitosanitarios en la viña. Reducción del impacto ambiental y optimización técnico-económica.
- 2001. Award organized by Official Association of Spanish Agricultural Engineers. Premio “Eladio Aranda” otorgado por el Colegio de Ingenieros Agrónomos de Centro y Canarias, por el trabajo “Situación y perspectivas de la agricultura de precisión”.