

Elise PELZER

37 year old

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Research scientist in Agronomy

WORK EXPERIENCES

Since October 2009
INRA, Agronomie

Research scientist: Analysis of the impacts of the reintroduction of legumes into cropping systems, according to species (grain or forage legumes) and cropping methods (pure crops, intercrops or companion/cover crops)

Knowledge Area: agroecology, legumes, intercropping, energy crops, design of sustainable cropping systems.

Building and management of national (e.g. ANR Legitimes) **and European** (e.g. LogistEC) **projects** : definition of objectives, task and budget planning, project execution (meeting deadlines and budgets), deliverables, results communication, supervision of the teams involved (task or work package leader).

Field analytical experiment for the design and assessment of cropping systems (e.g. crop management of pea-wheat intercrop and effect on the following crop), **farmer field observatory** (25 farmers) to understand the advantages and limits of legumes (pea and alfalfa) in cropping systems.

Animation of workshops for the design of innovative cropping systems with local stakeholders (farmers, cooperative advisors, agricultural chambers, technical institutes, etc.), and assessment of sustainability and feasibility.

Supervision (from bac+2 level to Ph.D. Student (C. Cernay)), **teaching, responsible** for the technical team.

Experimental data analysis (e.g. mixing models, variance analysis, meta-analyses). R programming

Visit of laboratories and trials, meeting with researchers in order to develop future collaborations (Wisconsin University, August-September 2011; Technical University of Denmark, Swedish University of Agricultural Sciences, June 2010).

PRODUCTIONS AND SKILLS

October 2008-September 2009
INRA, Eco-Innov, EU network ENDURE

Post-doctoral position : Multi-criteria ex-ante sustainability assessment of innovative crop protection cropping systems

Knowledge Area: design of sustainable cropping systems, multi-year and supra-field scales, assessment of economic, social and environmental sustainability of cropping systems, integrated pest management.

Design and programming of a multicriteria hierarchical model with the DEXi software (DEXiPM).

Animation of meetings with European researchers for the design of the DEXiPM model and its validation by experts.

Teaching: presentation and transfer of the DEXiPM model to researchers involved in the European ENDURE and PURE projects.

PRODUCTIONS AND SKILLS

2005-2008
INRA, Agronomie

Ph.D. Student: Modelling the effects of cropping systems and their spatial distribution on phoma stem canker on Winter Oilseed Rape and the adaptation of fungal pathogen populations responsible for the disease (*Leptosphaeria maculans*) to cultivar resistances

Knowledge Area: agronomy (resistance sustainability management, multi-year and supra-field scales, integrated pest management), plant epidemiology and population genetics.

Design and realization of experimental protocols of field and under controlled conditions experiments to evaluate inoculum recurrence and phoma dispersion.

Teaching and supervision of students (from bac+2 to master degree levels).

Experimental data analysis (e.g. variance analysis, quantil regression).

Design and programming of a spatially explicit crop model with Mathematica.

PRODUCTIONS AND SKILLS

2005
INRA, Agronomie
INRA, Pathologie et épidémiologie végétale

Internship Master degree: Wheat fusarium: study of systemic and late contaminations

Knowledge Area: plant pathology et epidemiology.

Design and realization of experimental protocols of under controlled conditions experiment for epidemic monitoring and damage assessment.

Experimental data analysis (variance analysis).

PRODUCTIONS AND SKILLS

2003-2004
University College London

Internship : I. A study of mutants of *Ascochyta rabiei*, the fungus responsible for ascochyta blight of chickpea; II. Impact of sugar and nitrogen supply on the senescence of *Arabidopsis thaliana*

Knowledge Area: plant pathology et epidemiology, molecular biology.

Under controlled conditions experiment: preparation of nutrient medium in petri dish, arabidopsis and pathogenic fungus culture, Southern blot, Northern blot, PCR.

Experimental data analysis (variance analysis).

PRODUCTIONS AND SKILLS

INTERESTS

Gastronomy, nature, botany, singing, reading

EDUCATION

May 2008
AgroParisTech (INA P-G-ENSIA-ENGREF) **Ph.D. in Agronomy** (honorable mention of the jury, silver medal of the Academy of Agriculture)

July 2005
AgroParisTech (INA P-G-ENSIA-ENGREF) Degree in **Agricultural Engineering** and **Master of Research in Life Sciences and Technology, specialization Agronomy**

PUBLICATIONS 2014-2018 (NON-EXHAUSTIVE LIST)

Cernay, C., Makowski, D., Pelzer, E., 2018. New insights into the yields of underexploited grain legume species. *Sustainable Agricultural Reviews*, in press

Cernay, C., Makowski, D., Pelzer, E., 2018. Preceding grain legume increases cereal yields under low nitrogen input conditions. *Environmental Chemistry Letters*, <https://doi.org/10.1007/s10311-017-0698-z>

Pelzer E, Bourlet C, Carlsson G, Lopez-Bellido RJ, Jensen ES, Jeuffroy MH, 2017. Design, assessment and feasibility of legume-based cropping systems in three European regions. *Crop and pastures*, 68,902-914.

Verret V, Gardarin A, Pelzer E, Médiène S, Makowski D, Valantin-Morison M, 2017. Can legume companion plants control weeds without decreasing crop yield? A meta-analysis. *Field Crops Research* 204, 158-168.

Cernay, C., Pelzer, E., Makowski, D., 2016. Data Descriptor: A global experimental dataset for assessing grain legume production. *SCIENTIFIC DATA* , 3:160084, DOI: 10.1038/sdata.2016.84

Magrini, M.B., Anton, M., Cholez, C., Corre-Hellou, G., Duc, G., Jeuffroy, M.H., Meynard, J.M., Pelzer, E., Voisin, A.S., Walrand, S., 2016. Why are grain-legumes rarely present in cropping systems despite their environmental and nutritional benefits? Analyzing lock-in in the French agrifood system, *Ecological Economics* 126, 152-162.

Pelzer, E., Bazot, M., Guichard, L., Jeuffroy, M.H. 2016. Crop Management Affects the Performance of a Winter Pea–Wheat Intercrop. *Agronomy Journal* 108 (3), 1089-1100.

Craheix, D., Bergez, J.E., Angevin, F., Bockstaller, C., Bohanec, M., Colomb, B., Doré, T., Fortino, G., Guichard, L., Pelzer, E., Méssean, A., Reau, R., Sadok, W., 2015. Guidelines to design models assessing agricultural sustainability, based upon feedbacks from the DEXi decision support system. *Agronomy for Sustainable Development* 35, 1431-1447.

Hossard L., Souchere V., Pelzer E., Pinochet X., Jeuffroy M.H., 2015. Meta-modelling of the impacts of regional cropping system scenarios for phoma stem canker control. *European Journal of Agronomy* 68, 1-12

Cernay, C., Ben-Ari, T., Pelzer, E., Meynard, J.M., Makowski, D., 2015. Estimating variability in grain legume yields across Europe and the Americas. *Scientific reports*, 5, 11171; doi: 10.1038/srep11171

Gaba, S., Lescourret, F., Boudsocq, S., Enjalbert, J., Hinsinger P., Journet E.P., Navas M.L., Wery, J., Louarn, G., Malézieux, E., Pelzer, E., Prudent, M., Ozier-Lafontaine, H., 2015. Multiple cropping systems as drivers for providing multiple ecosystem services: from concepts to design. *Agronomy for Sustainable Development* 35, 607-623.

Laurent A., Pelzer E., Loyce C., Makowski D., 2015. Ranking yields of energy crops: a meta-analysis using direct and indirect comparisons. *Renewable and Sustainable Energy Reviews* 46, 41–50.

Pelzer, E., Hombert, N., Jeuffroy, M-H., Makowski, D., 2014. Meta-analysis of the effect of nitrogen fertilization on annual cereal-legume intercrop production. *Agronomy Journal* 106 (5),1775-1786.

Voisin, A.-S., Gueguen, J., Huyghe, C., Jeuffroy, M.-H., Magrini, M.-B., Meynard, J.-M., Mougél, C., Pellerin, S., Pelzer, E., 2014. Legumes for feed, food, biomaterials and bioenergy in Europe: a review. *Agron. Sustain. Dev.* 34, 361–380.

Gabrielle, B., Bamiere, L., Caldes, N., De Cara, S., Decocq, G., Ferchaud, F., Loyce, C., Pelzer, E., Perez, Y., Wohlfahrt, J., Richard, G., 2014. Paving the way for sustainable bioenergy in Europe: Technological options and research avenues for large-scale biomass feedstock supply. *Renew. Sustain. Energy Rev.* 33, 11–25.

Numerous oral presentations at national and international conferences