

Mladen Cucak, PhD

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PROFESIONAL PROFILE

- Aspiring agricultural scientist/plant pathologist/epidemiologist with global experience of technical and development issues in agriculture
- Motivated achiever with PhD in Plant Pathology focused on extensive field-based agronomy and quantitative methods
- Track record of developing integrated pest management tools for practical disease control outcomes
- Strong collaborative qualities, leads change to effect positive outcomes
- Proficient problem-solver with the analytical skills to evaluate risks and develop realistic and effective strategies
- Strong logistics and programme organisational skills
- Proven ability to adapt to new subject areas and roles, along with the ability to develop strong professional relationships at all levels
- Influential interpersonal communicator, negotiator, and presenter
- Practical farmer focused approach through hands on experience

EXPERIENCE

1. February 2016 - May 2020

Location: Teagasc, Crops Research Centre, Oak Park, Carlow R93 XE12, Republic of Ireland

Position: Doctoral research fellow

Title of thesis: Revision of Potato Late Blight Forecasting in the Republic of Ireland

Main achievement: Evaluation of the old and proposition of the new potato late blight risk prediction algorithm which is currently being implemented by the Irish Meteorological Office;

Main tasks:

- Design, implementation and analysis of the crop protection *in vivo* and *in vitro* trials (including all relevant agricultural operations from planting to storage);
- Collection, curation and analysis of database with historical and forecasted hourly weather observations and implementation of the decision support system to guide the application of pesticide treatments;
- Sampling, isolation and molecular characterization of *Phytophthora infestans* isolates from field trials and statewide;
- Presentation of scientific background and practical results of IPM tools to producers and industry;
- Supervision of lab interns (six three- and six-months placements);
- Initiated, led and tutored an R programming language group at the institute;
- Presentation of results on national and international scientific meetings from different fields (plant pathology, epidemiology, meteorology);
- Intensive collaboration with European and international groups.

2. December 2014 – December 2015

Employer: NIBIO Norwegian Institute of Bioeconomy Research, Plant Protection Division
Høgskoleveien 7, 1430 Ås, Norway

Position:

Intern (01.12.2014 – 10.06.2015) on project *Introduction of ICT in IPM in Bosnia and Hercegovina's agriculture*

Senior Research Technician (10.06.2015 –15.12.2015) involved in several projects in Plant Pathology Department

Main tasks:

- Assisting project coordinator in project management;
- Monitoring pest and disease population and modelling risk of harmful organisms in agriculture (*Venturia inaequalis*, *Cydia pomonella*);
- Work on development and international promotion of decision support systems in agriculture;
- Facilitating international collaboration Norway – Balkans;
- Development of an automated insect trap.

Internships

01.06.2013 - 01.07.2013	Plant protection department; Agricultural Institute of Slovenia, Kmetijsko gozdarska zbornica Slovenije; Vinarska ulica 14, 2000 Maribor, Slovenia
01.04.2009 - 15.04.2009	Phytopharmacy store. Trznica A.D. Jedinica: Poljoprivredna apoteka, Banja Luka, Bosnia and Herzegovina
01.04.2008 - 15.04.2008	Apple fruit orchard (200 Ha); Agroimpex, Laktasi, Gradiska, Bosnia and Herzegovina

Teaching

2018 - 2019	GY310B – Tutoring group of 16 students writing Bachelor thesis in the field of plant diseases epidemiology.
2019	Intro to R workshop for colleagues from the institute (weekly sessions for 2 months).

PROFFESIONAL

Research interests:

General plant pathology	Agricultural development
Integrated Pest Management	Integrated pest management
Epidemiology of Plant Diseases	Collaborative research
Crop Protection	Microbiology
Data Science	Trial design
Agrometeorology	Statistical analysis
Knowledge transfer	Agrochemicals

Synergistic Activities

Reviewer for *Plant Disease*, *Phytopathology* and *MDPI* journals

Membership in Professional Associations

European Association for Potato Research

The American Phytopathological Society

EuroBlight group

Member of APS Epidemiology

Member of Open Plant Pathology

Awards and Scholarships:

2019	Teagasc Walsh Fellowship Travel Award for three-month research stay at UC Davis (5000 EUR)
2016	Student travel award for participation on EAPR Pathology and Pests section meeting in Dundee, August 2016
2016 - 2020	Doctoral fellowship at Maynooth University and Teagasc - Agriculture and Food Development Authority
2014	EEA grant for internship at Norwegian Institute for Bioeconomy Research NIBIO (3000 EUR)
2012 - 2014	Erasmus Mundus scholarship for Master studies

SCIENTIFIC OUTPUTS

Peer-reviewed publications

Cucak, M., Sparks, A. H., Moral, R., Kildea, S., Lambkin, K., Fealy, R. 2019. Evaluation of Irish Rules, the Potato Late Blight Forecasting Model and its Operational use in Republic of Ireland. *Agronomy* 2019. 9: 515

Website and supplementary material: <https://mladencucak.github.io/PLBFieldTrial/index.html>

Publications (accepted-under revisions):

Cucak, M., Moral, R., Fealy, R., Downes, P., Kildea, S. Optimising potato late blight management in the Republic of Ireland using risk prediction, varietal resistance and molecular tools. *Phytopathology*

Website and supplementary material: <https://mladencucak.github.io/AnalysisPLBIreland/>

Publications (under revision):

Cucak, M., Esker, P., Kildea, S., Downes, P., Fealy, R. BlightR: a new potato late blight risk prediction model and approach. Submitted to *Plant Disease*.

Code repository: <https://github.com/mladencucak/BlightR>

Conference paper

Hansen, J.G., Lassen, P., Hjelkrem, A.-G.R., Eikemo, H., Cucak, M., Lees, A., Gaucher, D., Chatot, C., Kessel, G. (2017) Integration of pathogen and host resistance information in existing DSSs - introducing the IPMBlight2.0 approach. In: Proc. Sixt. Euroblight Workshop December 2017. PAGV Special Report No. 18: 147–158.

Available at: http://euroblight.net/fileadmin/euroblight/Workshops/Aarhus/Proceedings/20_Jens_Hansen-p147-158.pdf (accessed 29 January 2019)

Conference presentations

Cucak, M., Sparks, A. H., Fealy, R., Griffin, D., Lambkin, K., Kildea, S. (2018) Potato late blight risk forecasting in Republic of Ireland: Field validation. Society of Irish plant pathologists (SIP) Meeting. Dublin, 26-27 November 2018

Cucak, M., Sparks, A. H., Fealy, R., Griffin, D., Lambkin, K., Kildea, S. (2018) Revision of potato late blight risk forecasting in the Republic of Ireland. IEW12- 12th International Epidemiology Workshop. Lillehammer, 10-14th June 2018

Cucak, M., Sparks, A. H., Fealy, R., Griffin, D., Lambkin, K., Kildea, S. (2017) Potato late blight risk forecasting in Republic Of Ireland. Society of Irish plant pathologists (SIP) Meeting. Dublin, 5-6th December 2017

Cucak, M., Fealy, R., Griffin, D., Lambkin, K., Kildea, S. (2017) The use of agrometeorological data for crop disease risk forecasting in Ireland: a case of potato late blight. 17th EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017. Dublin, 4-8th September 2017

T-E. Skog, M. Cucak, B. Nordskog, H. Eikemo, H. Hole, A. F. Schjøll, J. Netland, N. Trandem, T. Rafoss, R. Meadow. (2015) VIPS – an Open Source technology platform for prognosis and decision support and its implementation in Bosnia and Herzegovina. IV International Symposium and XX Scientific Conference of agronomists of Republic of Srpska. Bijeljina, Bosnia and Herzegovina.

Poster presentations

Cucak, M., Dalla Lana, F., Ojiambo, P., De Wolf, E., Paul, P., Esker, P. (2020) Into the new era of decision support in crop protection: Multifaceted disease management advisors based on machine learning and open science. APS Meeting, 10-14 August 2020

Cucak, M., Sparks, A. H., Fealy, R., Griffin, D., Lambkin, K., Kildea, S. (2017) Lowering thresholds of qualitative plant risk prediction algorithms: sensitivity versus specificity of Irish Rules for potato blight development. Aarhus, Denmark. E In: Proc. Sixth Euroblight Workshop December 2017. PAGV Special Report No. 18: 231-232.

Available at:

http://euroblight.net/fileadmin/euroblight/Workshops/Aarhus/Proceedings/Special_Report_18_Totaal.pdf
(accessed 29 January 2019)

Cucak, M., Fealy, R., Griffin, D., Lambkin, K., Kildea, S. (2016) Can We Still Use Irish Rules to Forecast Potato Late Blight In Ireland? 7 - 11 August 2016, Dundee, Scotland, Meeting of Pest and Pathology Group of European Potato Research Society.

T-E. Skog, M. Cucak, B. Nordskog, H. Eikemo, H. Hole, A. F. Schjøll, J. Netland, N. Trandem, T. Rafoss, R. Meadow. (2015) VIPS – an Open Source technology platform for prognosis and decision support. Plant health for sustainable agriculture. Ljubljana, Slovenia.

Other

Master thesis:

Cucak, M. (2015) Analysis of possibilities for peach (*Prunus persica* L.) disease control without use of copper-based pesticides. University of Maribor, Maribor, Slovenia.

Available at: <https://dk.um.si/Dokument.php?id=70634&lang=eng>)

PERSONAL

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