



Early blight subgroup





outline

- Report from the subgroup meeting 11 May
- Future challenges in early blight control: IPM strategy including biological candidates
- Future activities
- Discussion



cv: Kuras, 18 September 2019



Subgroup meeting

<p> </p> <h3>Observational study of early blight in Swedish farms</h3> <p>Linnea Stridh – SLU <u>Alnarp</u>/Lyckeby</p>	
<p>Industrial PhD project (initiated in July 2018)</p> <p>Supervisors: <u>Erland Liljeroth</u>, Laura Grenville-Briggs, <u>Åsa Lankinen</u> and Svante <u>Resjö</u></p> <p>2022-05-11</p>	



Subgroup meeting

Summary

- The sand/clay composition of the soil has a impact on EB infection
- crop rotation - early blight disease
- Potassium levels in potato foliage is correlated with the amount of early blight infection



Subgroup meeting

Technische
Universität
München



Trichoderma culture filtrates as biological control agent against
Alternaria solani on potatoes

Carolin Brune, Hans Hausladen, and Nicole Bellé
Technical University Munich, Chair of Phytopathology

EuroBlight Workshop, Ascona 2022



Subgroup meeting

Summary

- Efficacy of CF in lab and greenhouse trials
- The CF induce a resistance reaction in the plants and has a direct toxicity (plate tests)
- A lot of influencing factors

Subgroup meeting

Daily patterns of dispersal of *Alternaria* conidia in a potato field influenced by meteorological conditions

Meno-Fariñas, L., Abuley, I., Escuredo, O., Sejón-Coello, M.C

9-12 May 2022
Ascona (Switzerland)





Subgroup meeting

Summary

- hourly spore dispersal is correlated to temperature, solar radiation, wind
- Negative correlation to relative humidity
- Temperature was the main weather variable for predicting the conidia levels



Subgroup meeting



NATIONAL INSTITUTE OF RESEARCH AND DEVELOPMENT
FOR POTATO AND SUGAR BEET (N.I.R.D.P.S.B.) BRAŞOV



The behaviour of some potato varieties to early blight (*Alternaria* sp.) stroke in the central area of Romania (Tara Barsei county)

Manuela HERMEZIU, Radu HERMEZIU

Euroblight Workshop, Monte Verita, Ascona, Switzerland, 9th -12th May 2022



Subgroup meeting

Summary

- Higher temperature in the central part of Romania
→ higher risk for EB infection
- Difference in EB susceptibility of the tested Romanian varieties



outline

- **IPM strategy – update**
- mapping of the mutation
- Future challenges in early blight control: F2F, BioEuroblight;....

- Future activities: Field trial 2022 / 2023

- Discussion



IPM to control eb (check the yield loss of eb)

- Cultivar resistance (maturity group)
- Healthy seed tuber
- Crop rotation
- Controlling weeds and volunteer potatoes
- Nutrition deficiency (Nitrogen,
- Fertilization (Calcium cyanamide → soil born inoc.)
- Reduction of biotic and abiotic stress
(e.g. Aphids, drought,)
- Diagnostic
- DSS
- **Biologicals**
- **Type of soil (higher risk in sandy soil)**





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Mapping of the mutations

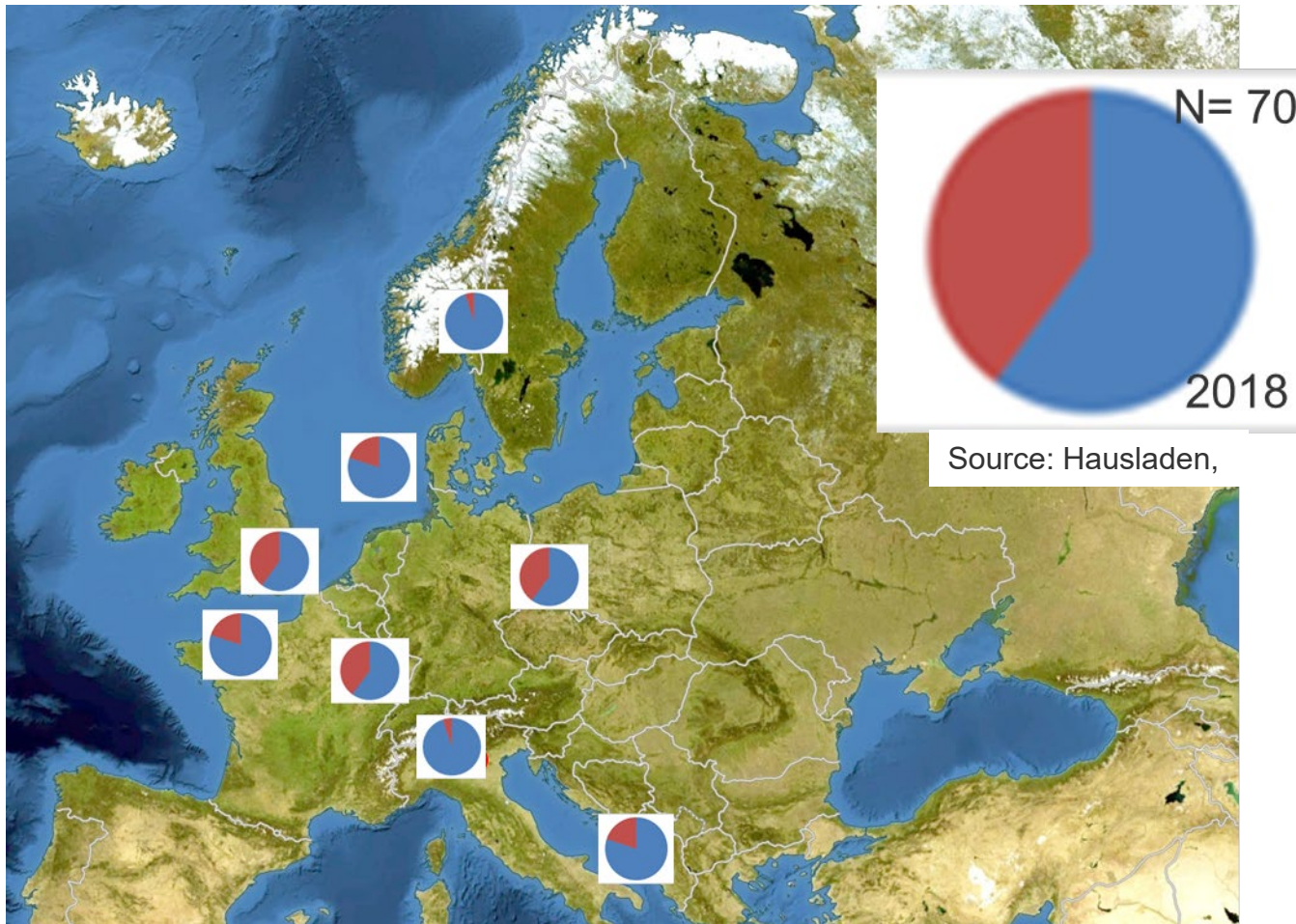
- mapping mutations in *A. solani* in Europe
- F129L, SDHI (subunit B, C, D)

→ first step:



Future activities

e.g. F129L





outline

- IPM strategy – update
- mapping of the mutation
- **update of protocols**
- Future challenges in early blight control: F2F, BioEuroblight;.....

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Protocol

- + Susceptible variety
- + Control PLB with a.i. not effective on EB
- + Randomized block design, including an eb untreated plot
- + Untreated is part of the field experiment (spreader ~~plot~~)
- + Preferably natural infection,
however inoculation with infested grain kernels is permitted
- + Misting is permissible
- + Yield is not required



~~+ Reference treatments~~

~~Mancozeb weekly , Mancozeb every 14 days~~

+ Spray frequency is every 7 days (+/- 1 day) or every 14 days (+/- 1 day), to be chosen by the participants. The efficacy of the EB fungicide is compared to one of the two reference treatments accordingly.

Spray until the start of the epidemic (10-15% in UTC)

+ Dose rate is highest dose registered in Europe



- + First spray 6-8 weeks after crop emergence or when the first symptoms appear

- + Assessment: every week by rating the % infected leaf area, as long as possible (EPPO-guideline PP 1/263 (1)) till 4 weeks after the last spray

- + Calculation of ratings
Calculation comparable to late blight calc.,
reference is the EB untreated control = 0
0-5 scale
Two categories (7 days interval, 14 days interval)



activities

- update of protocols



activities

19 different “lab protocols”

- + qPCR
- + Artificial inoculation
- + Long-Term Storage
- + Growth and conidia production
- + Isolation
- + Characterization of Cytb mutations
- + Characterization of SDHI mutations



Future activities

- protocols: download EUROBLIGHT homepage

Protocols

The first early blight subgroup meeting brought together 19 Euroblight members on 19-20 march at Freising, Germany. Over the two days EB field experiments and fungicide ratings were discussed along with increasing problems associated with losses in fungicide sensitivity. In order to improve and standardize the monitoring and diagnostics of EB relevant species lab protocols for testing and comparison are now available on the EuroBlight website. Protocols collated by the Alternaria subgroup is organized according to different topics and they will be further elaborated and new ones will appear whenever appropriate.

Protocol title	Contact person	Download
qPCR		
Qualitative PCR diagnostics of <i>A. solani</i> and <i>A. alternata</i>	Andrea Volz, a.backhaus@wzw.tum.de; Jürgen Leiminger, juergen.leiminger@lfl.bayern.de Lehrstuhl für Phytopathologie, Wissenschaftszentrum Weihenstephan	June 2014 Download



Future activities

- update of protocols

Testing BCA/PRI in greenhouse and in field trial (BCA stand alone)



outline

- IPM strategy – update
- mapping of the mutation
- EB fungicide test protocol
- **Future challenges in early blight control: F2F, BioEuroblight;....**
- Future activities: Field trial 2022 / 2023
- Discussion



Future challenges

IPM including biological candidates

- How can we **implement** biologicals in an IPM strategy ?



Future challenges

IPM including biological candidates

- How can we implement biologicals in an IPM strategy ?

→ Alternation or Mixture,

→ including weather based risk



Subgroup meeting

Points for discussion -

- Population study, genetic characterization, phenotyping
- Global network – part of the EUROBLIGHT EB group



future activities

Field trial 2023

Aim: Increase the knowledge of the host – environment - interaction
(different climatic conditions)



Thanks

