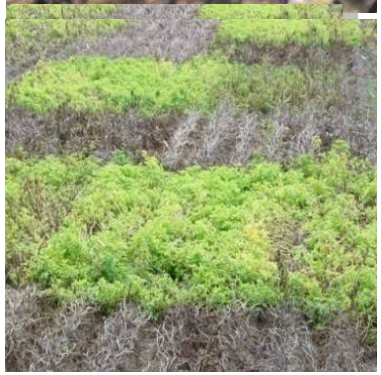
EuroBlight
A potato late blight network for Europe

Early blight subgroup



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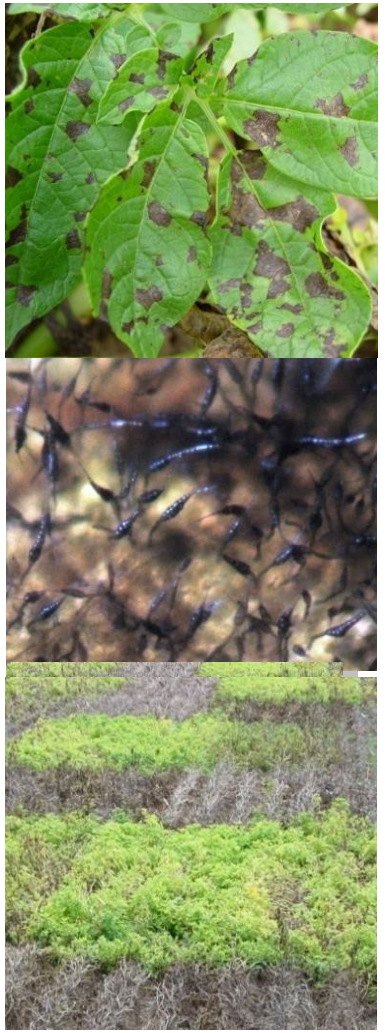
outline

- IPM strategy –> ICM update
- mapping of the mutation
- Future challenges in early blight (EB) control
- Discussion

ICM 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)



outline

- IPM strategy – update
- **mapping of the mutation**
- Future challenges in early blight control:
- Future activities:
- Discussion

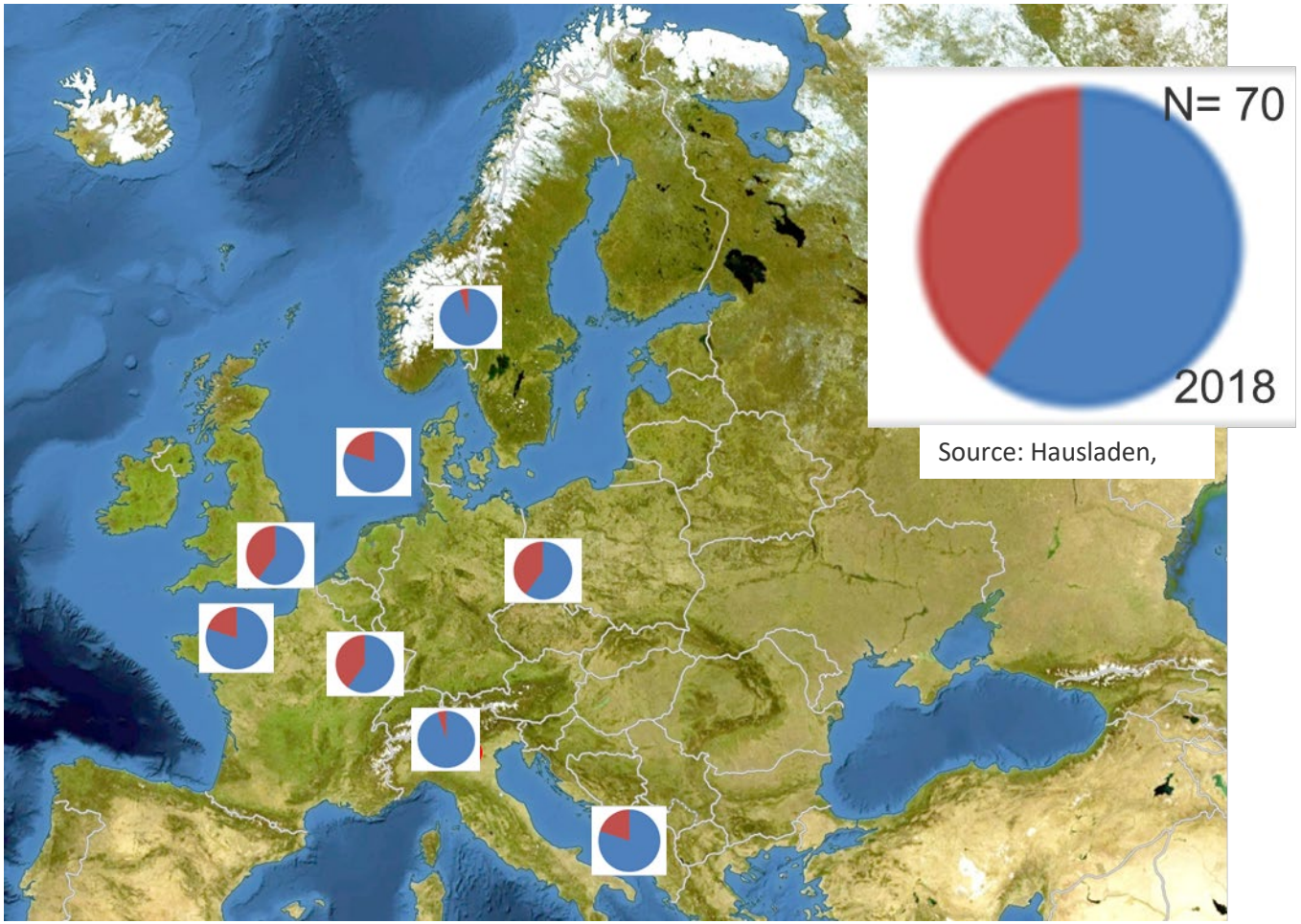
Mapping of the mutations

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

→ Proposal (discussion in Ascona)

Proposal

e.g. F129L



→ Limited data from different countries

Mapping of the mutations

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

→ Text based on country editors info (Hans)

outline

- IPM strategy – update
- mapping of the mutation
- **update of protocols**
- key research questions:
- Future challenges in early blight control
- Future activities:
- Discussion

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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)

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activities

- update of protocols

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activities

19 different “lab protocols”

+ qPCR

+ Artificial inoculation

+ Long-Term Storage

+ Growth and conidia production

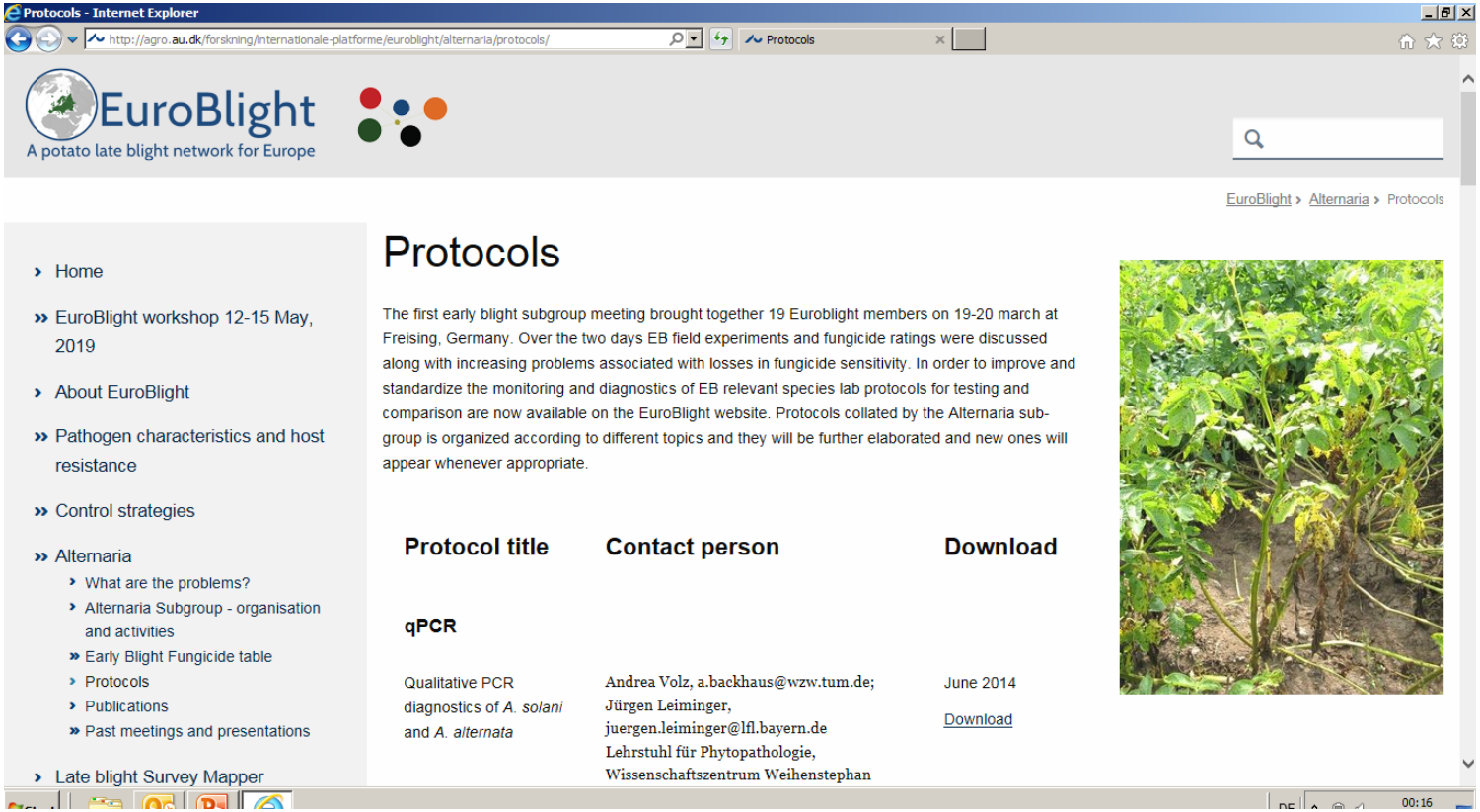
+ Isolation

+ Characterization of Cytb mutations

+ Characterization of SDHI mutations

Future activities

- protocols: download EUROBLIGHT homepage



Activities (NOW)

- **update of new protocols**

Characterization of Cyp51 mutations (Gerd, Christina)

Testing BCAs in greenhouse and in field trial (BCA stand alone) (Isaac, Hans, Carolin)

Detached leaf assay for fitness trial (Isaac, Laura)

Subgroup meeting

Points for discussion – key research question

- Population study, genetic characterization, phenotyping
- Fungicide resistance (QoI, SDHI, DMI)

→ Control of EB: How is the EB causing pathogen?

Activities (NOW 2024)

- **EB research group: project 2024**

Sample infected leaves from field trials (untreated, …)

Isolation (single spore isolate / single spot isolate) (each RG by his own)

Pathogen identification (*A. solani*,……) by ITS primer -> Isaac

Check mutation (QoI, SDHI, CYP 51) by pyrosequencing -> Gerd, Carolina

Phenotyping (fitness, aggressivness) of the isolats (each RG by his own)

→ Everybody is invited to join this project (Mail- Hans)

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Subgroup meeting

Points for discussion – key research question

- Population study, genetic characterization, phenotyping (How is the EB causing pathogen?)
- Fungicide resistance (QoI, SDHI, DMI)
- Communication infrastructure
- Global network

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Thanks