

# State of the art and important research questions: Report from the EuroBlight *Alternaria* group

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## 1. OBJECTIVE

The discussion in the EuroBlight *Alternaria* group started with the discussion about the objective of the subgroup. The group approved that the objective is to **increase the knowledge** of early blight especially in

- Monitoring of fungicide sensitivity
- Phenotypic characterization of the pathogens
- Decision Support System
- Host resistance

These topics are the basics for the development of an IPM system to control EB and provide information to support national development.

## 2. ACTIVITIES

The EuroBlight *Alternaria* group updated the list of protocols. The new protocol concerning the "Characterization of SDHI mutation" was added.

At the moment 19 different protocols for isolation, spore production, artificial inoculation (greenhouse and field) and molecular detection of different *Alternaria* species are on the website dealing with:

- + qPCR
- + Artificial inoculation
- + Long-Term Storage
- + Growth and conidia production
- + Isolation of *Alternaria* species
- + Characterization of Cyt B mutations  
(F 129 L Mutation in *A. solani*, G143A Mutation in *A. alternata*)
- + Characterization of SDHI mutation

### 3. PROTOCOL FOR FUNGICIDE TRIALS TO PROVIDE DECIMAL RATINGS FOR *ALTERNARIA* FUNGICIDES

Together with the fungicide rating group the protocol for EB fungicide trials to provide a decimal rating for *Alternaria* fungicides was discussed. In comparison to the previous protocol an untreated plot is the reference for the decimal rating. The control plots have to be included in the randomized field trial.

The main points are:

- Susceptible variety
- Weekly applications of Revus or Ranman Top to prevent late blight
- Two to five applications of *Alternaria* fungicides
- Test fungicides to commence before the start of the epidemic (approximately 7 to 8 weeks after emergence)
- *Alternaria* test fungicides to be applied at intervals of 7 or 14 days and at the highest label dose rate in Europe

### 4. HOMEPAGE

All relevant publications (*Alternaria* on potato and tomato) will be uploaded and updated on the EUROBLIGHT homepage.

### 5. NEW INITIATIVES

In 2015 the members of the subgroup decided to initiate a cooperating project dealing with the spread of the QoI fungicide resistance of *A. solani* in European potato growing areas. The project "Monitoring of sensitivity to fungicides (QoI) of *A. solani* isolates in Europe" started in 2015 with a limited number of *Alternaria solani* isolates in different locations/countries and was expanded in 2016. The aim is to publish the data about the "Prevalence of QoI Resistance in European *Alternaria solani* population".

Further the group discussed following Integrated Pest Management tools to control early blight:

- Cultivar resistance (maturity group)
- Healthy seed tuber
- Crop rotation
- Controlling weeds and volunteer potatoes
- Nutrition deficiency (Nitrogen,..)
- Fertilization (Calcium cyanamide)
- Reduction of biotic and abiotic stress (E.g. Aphids, drought, ....)
- Diagnostic
- DSS
- Biologicals
- Chemical application

Also recommendations for the integrated and sustained fungicide strategies with the background of an increasing loss of fungicide sensitivity of *Alternaria* isolates were discussed. The discussion will continue at the next EB subgroup meeting.