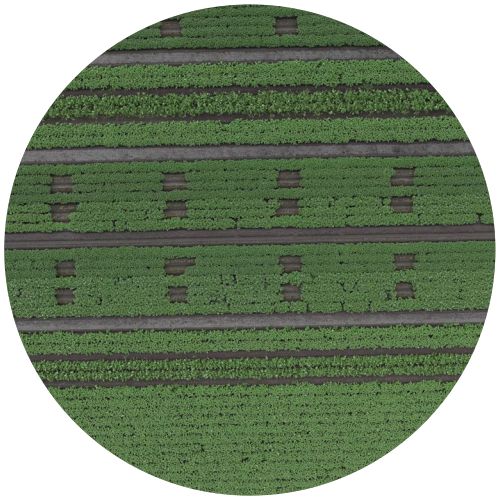
Late blight control in resistant starch potato varieties

Experiments 2020 and 2021

11 May 2020, Iris Visscher, Geert Kessel, Harry Roerink



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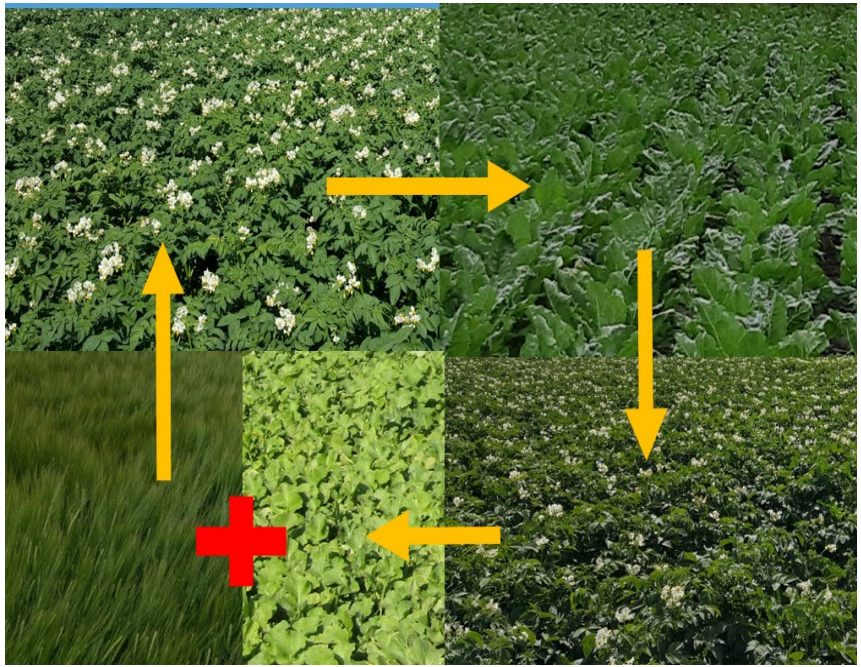
Starch potatoes

- Growing season: April till October
- Single gene resistances excist
- 39.000 ha
- 45 ton/ha



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Trial in Valthermond (Drenthe, NL)

- In cooperation with Agrifirm (Harry Roerink)
- Resistant cultivars
- 12 spraying strategies incl. DSS considering:
    - Timing
    - Product use (chemical, bio-stimulant)

  No artificial inoculation or sprinkler

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2020 & 2021

The objective of this study was to determine the best spraying strategy for resistant varieties, focusing on yield and the suppression of new adapted *P. infestans* genotypes.

Monitoring on:

- P. infestans infection
- FTA samples
- Yield

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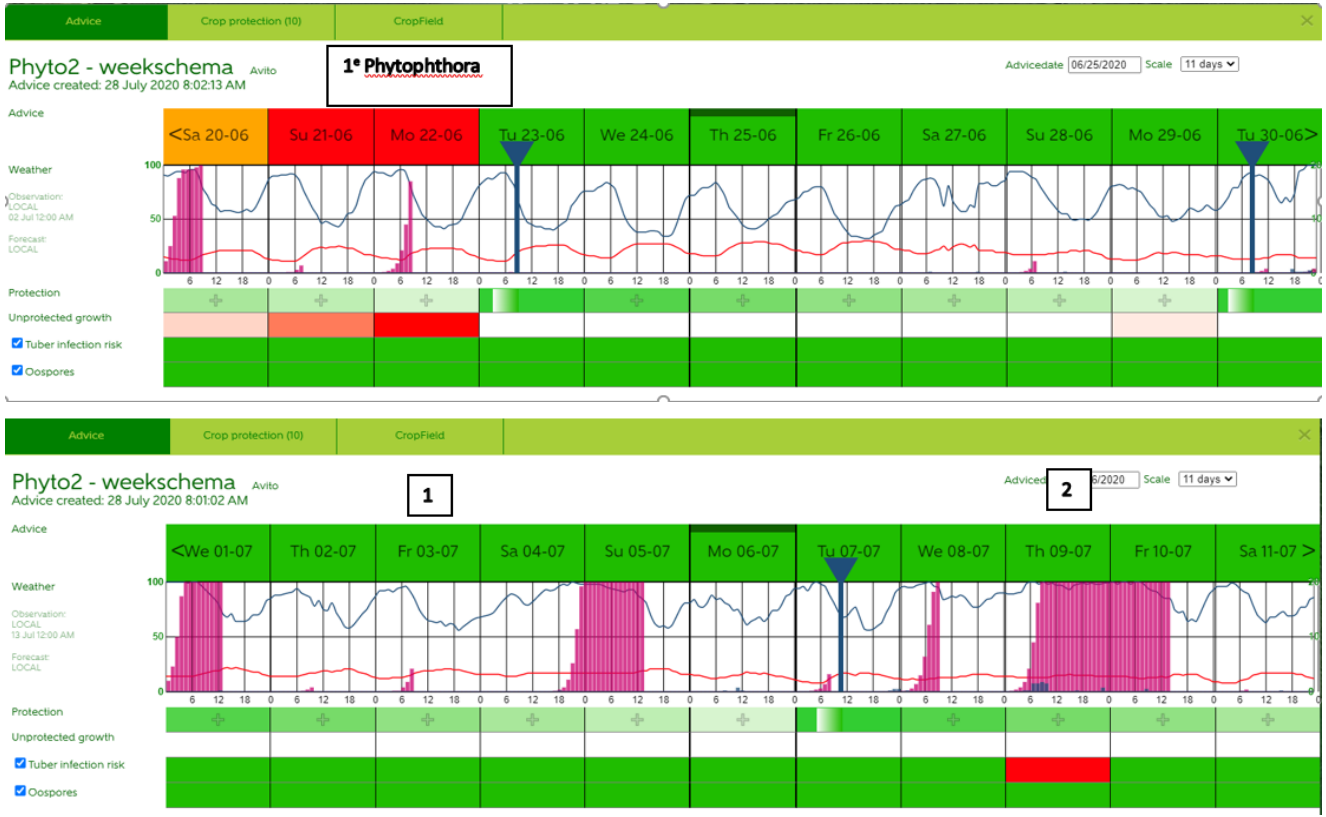
Trial design

- Untreated control
- Reference
- DSS
- Cumulative
- Two or three weekly spraying schedule
- Bio stimulants
- Combination of above

Cumulative start – BlightApp on Farmmaps



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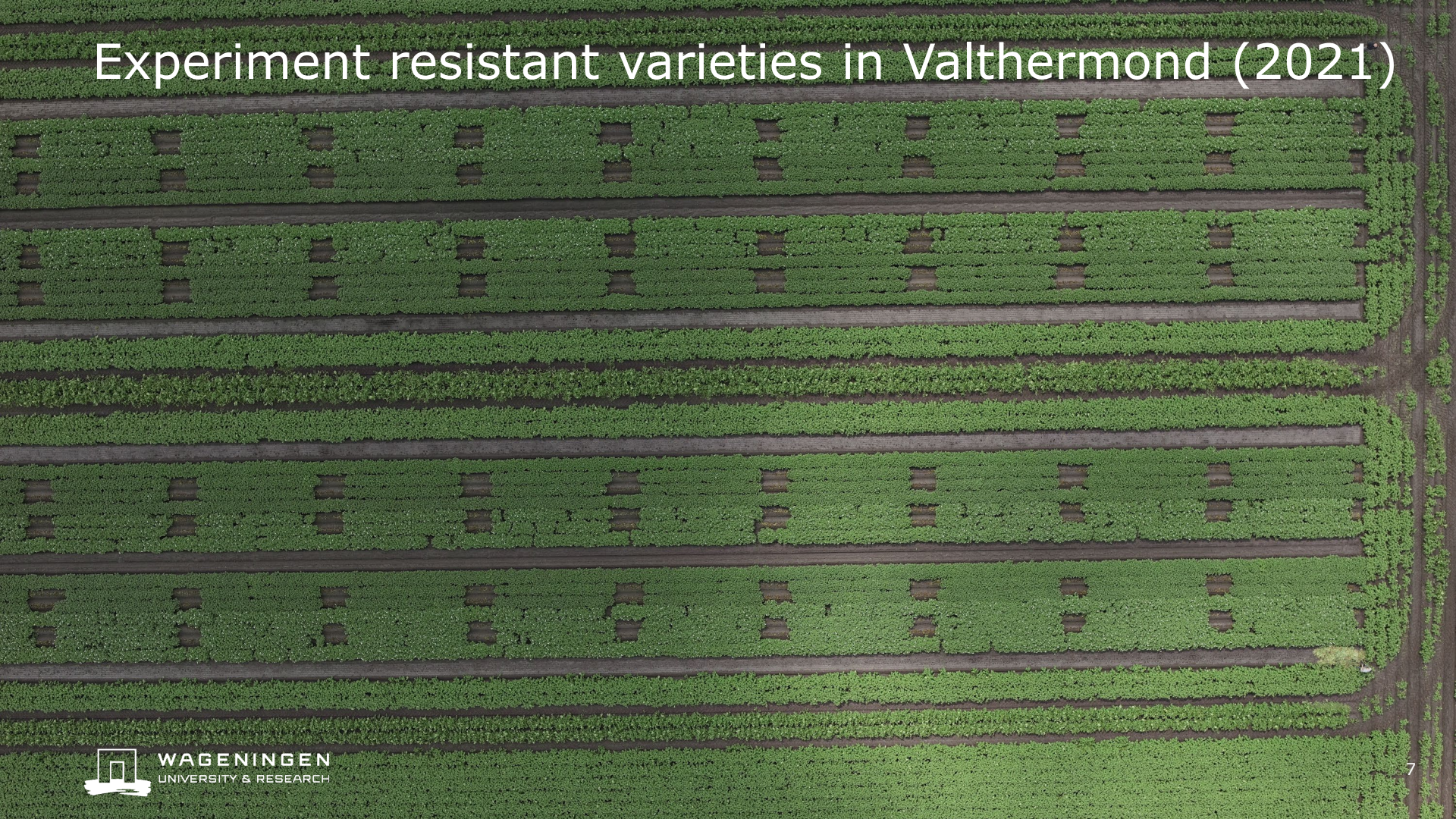
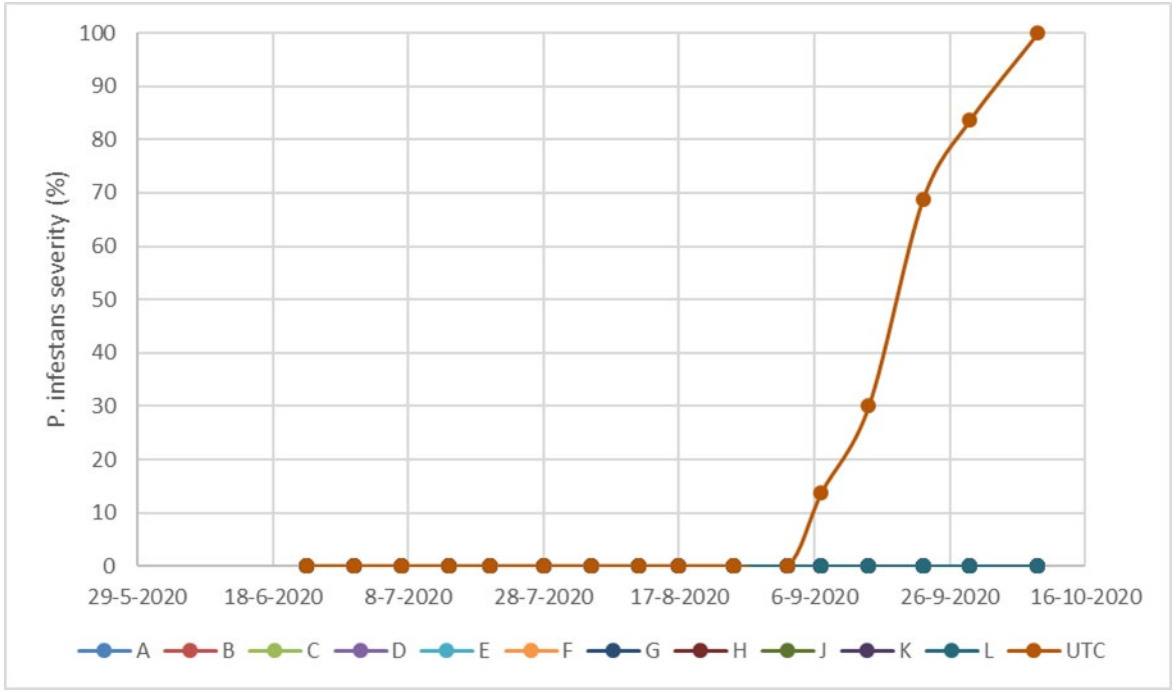
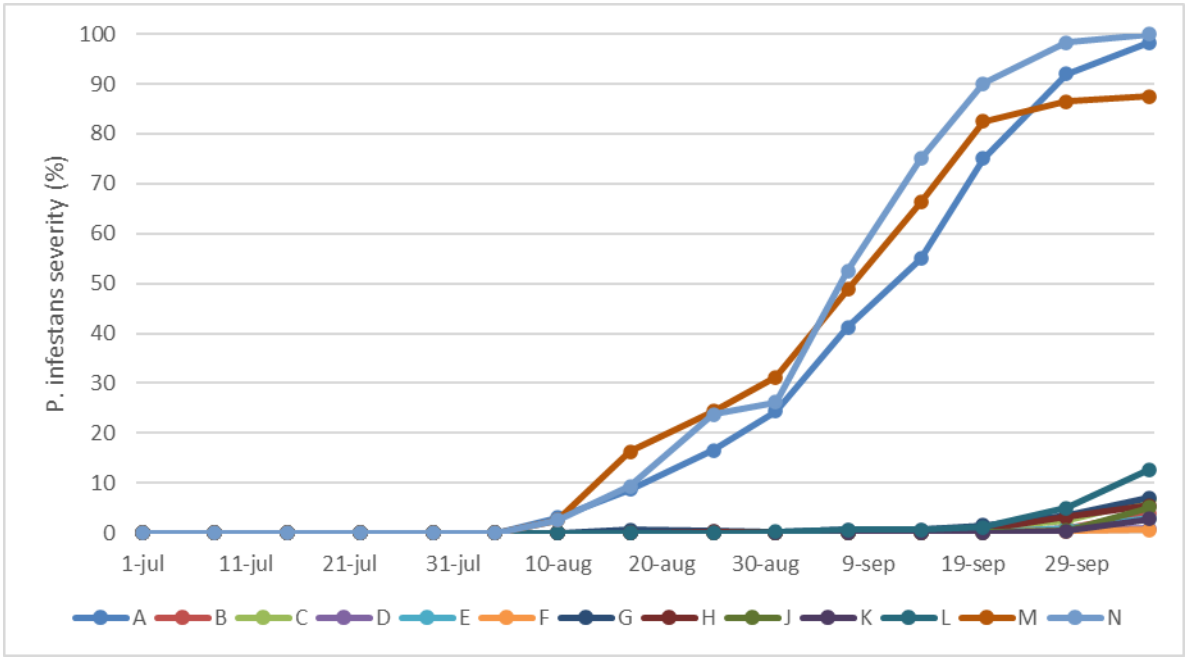
Experiment resistant varieties in Valthermond (2021)



Results 2020

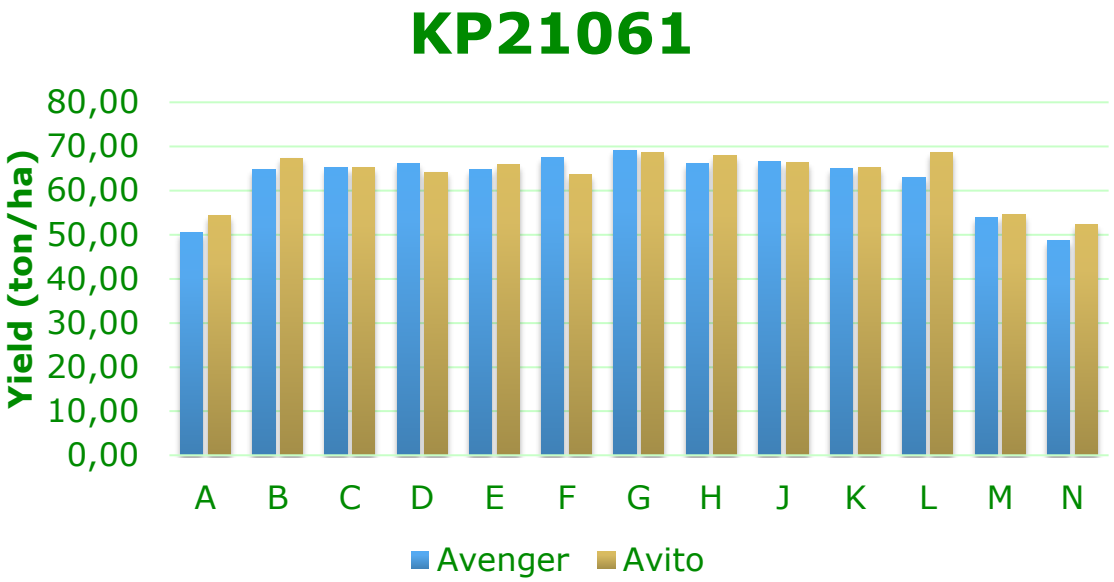


Results 2021

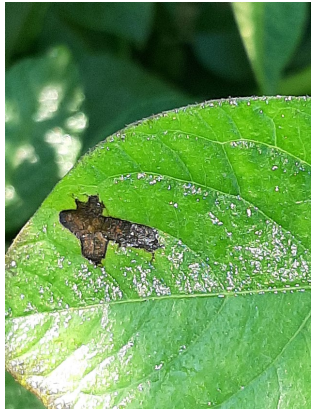


Treatment A: UTC
Treatment M & N: Cumulative approach + DSS with biostimulants

Effects visible in yield?



Atypical symptoms



No sporulation →

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Monitoring

FTA samples

Sample Code	Sample Type	CollectionYear	CollectionMonth	Host	Cultivar	Country	Region	Site	Genotype
NL21042	D	2021	8	potato	Avito	NL	Drenthe	Field Experiment	Other
NL21043	D	2021	8	potato	Avito	NL	Drenthe	Field Experiment	Other
NL21044	L	2021	8	potato	Avito	NL	Drenthe	Field Experiment	Other
NL21045	D	2021	8	potato	Avito	NL	Drenthe	Field Experiment	Other
NL21046	D	2021	8	potato	Avito	NL	Drenthe	Farmers Field	Z_failed
NL21047	D	2021	8	potato	Avito	NL	Drenthe	Farmers Field	Z_failed
NL21048	L	2021	8	potato	Avito	NL	Drenthe	Farmers Field	Z_failed
NL21049	D	2021	8	potato	Avito	NL	Drenthe	Farmers Field	Z_failed
NL21050	D	2021	8	potato	Avito	NL	Drenthe	Farmers Field	Other

Conclusion

- *P. infestans* adapts rapidly
- Resistant varieties are needed to achieve the F2F goals:
    - Resistance is part of the ICM strategy
    - There are only a limited R genes available
    - Fungicides are need to protect the R genes

  Sustainable realization of F2F objectives huge challenge!

Questions?

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