BlightManager

EuroBlight
A potato late blight network for Europe

Systems approach for early warning and control of late blight and early blight in Denmark

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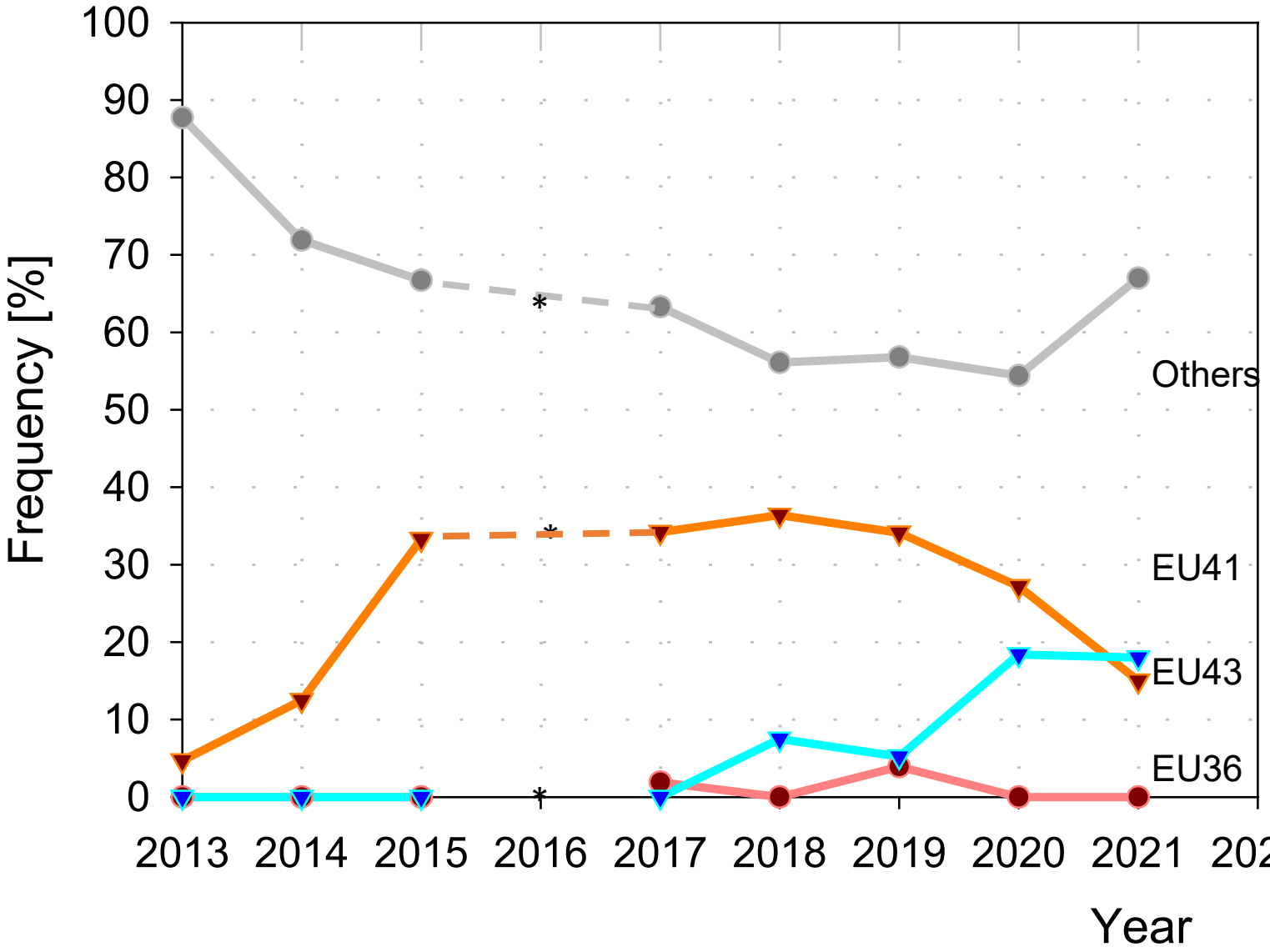
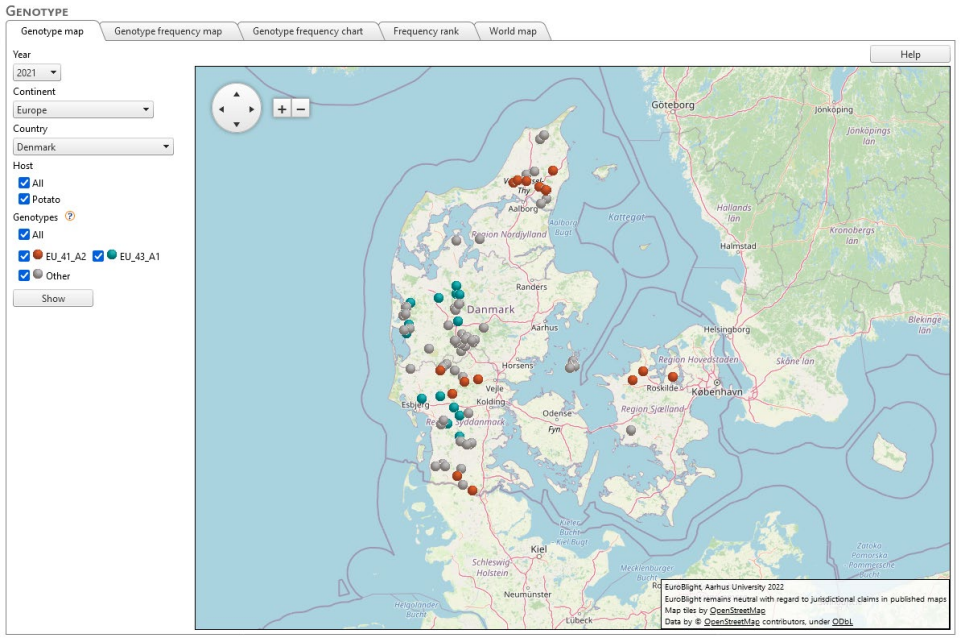


∗ No data in 2016

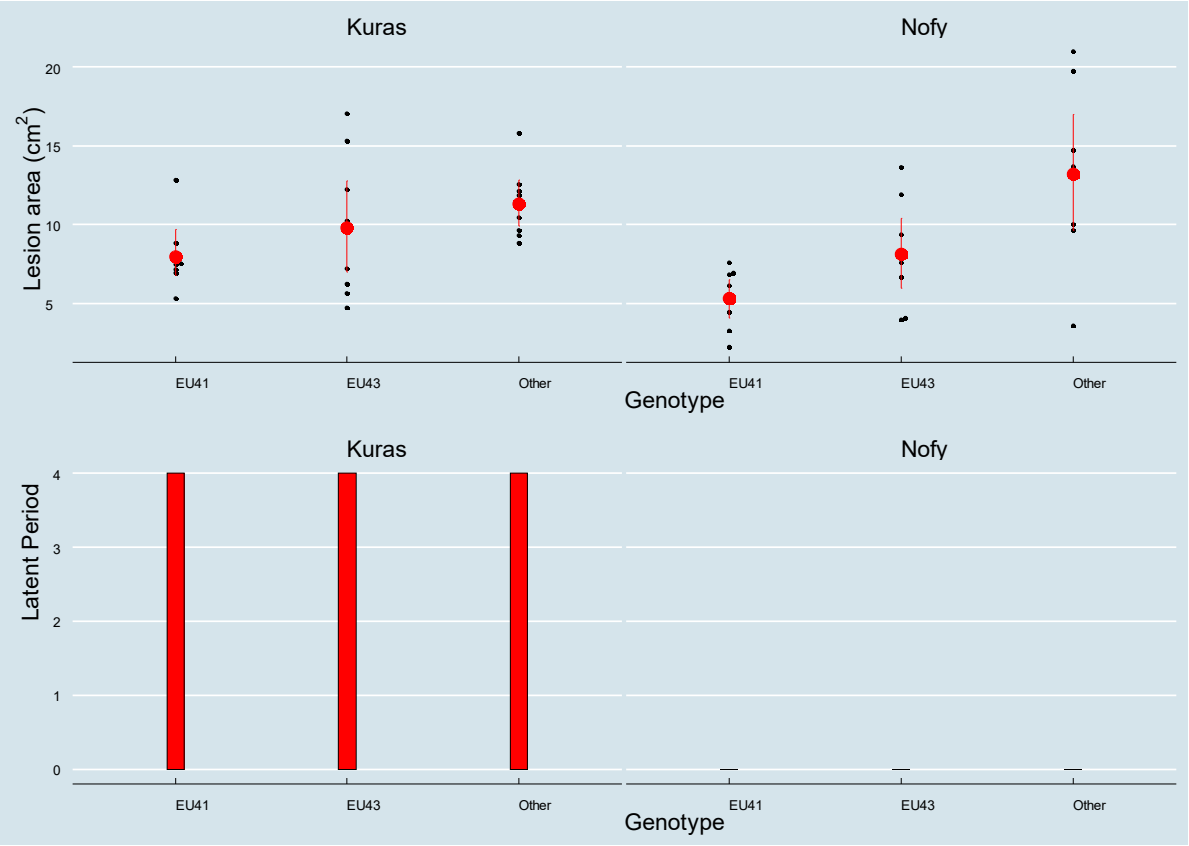


Genotypes in Denmark, 2021

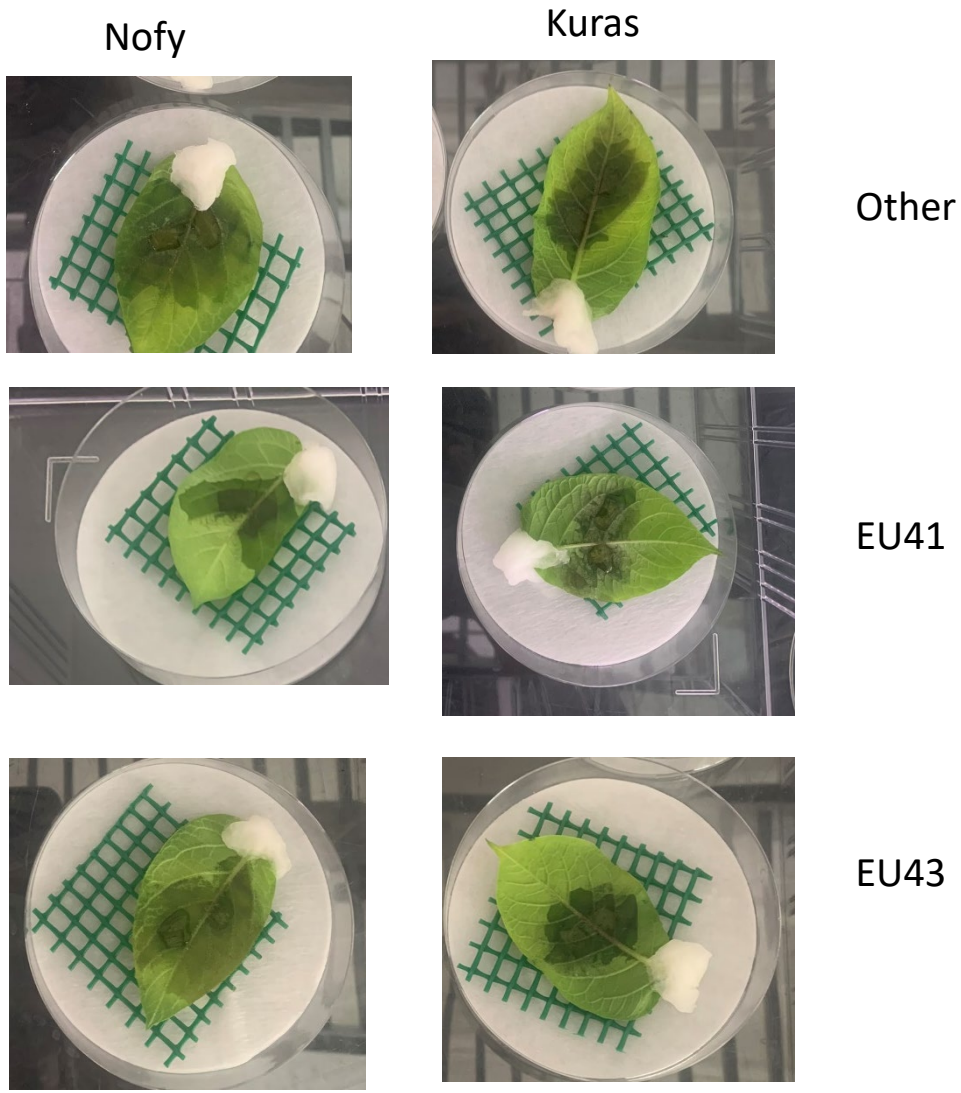
145 samples

EU41: 15%
EU43: 18%
Other: 67%

- The clones (EU41 & EU43) are less aggressive compared to the other types
- Factors supporting their dominance still remains to be answered?



IPMBlight2.0 also concluded that EU41 is not more aggressive than the "other" types



Some conclusions

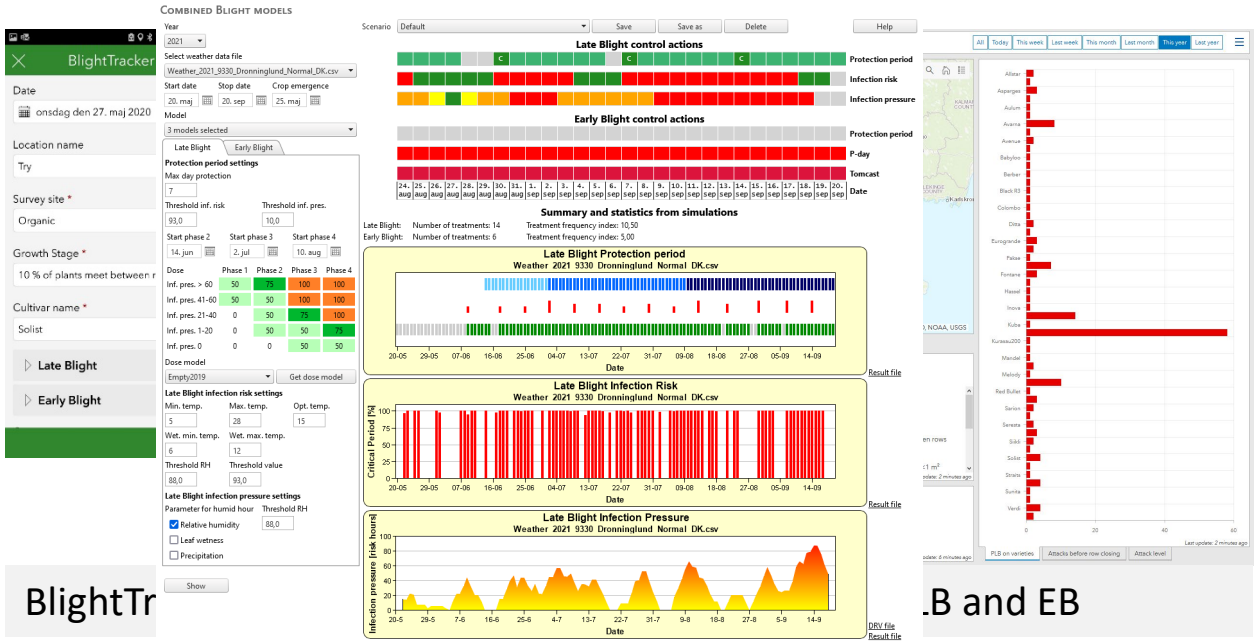
Due to climate change, we have milder winters. More (infected) tubers survive in dumps and as volunteer plants and this might explain the expansion of the clonal population of EU41 and EU43.

Volunteer plants act as “false crop rotations”

Increased pathogen diversity from oospore driven epidemics is a threat to a sustainable potato production in Europe

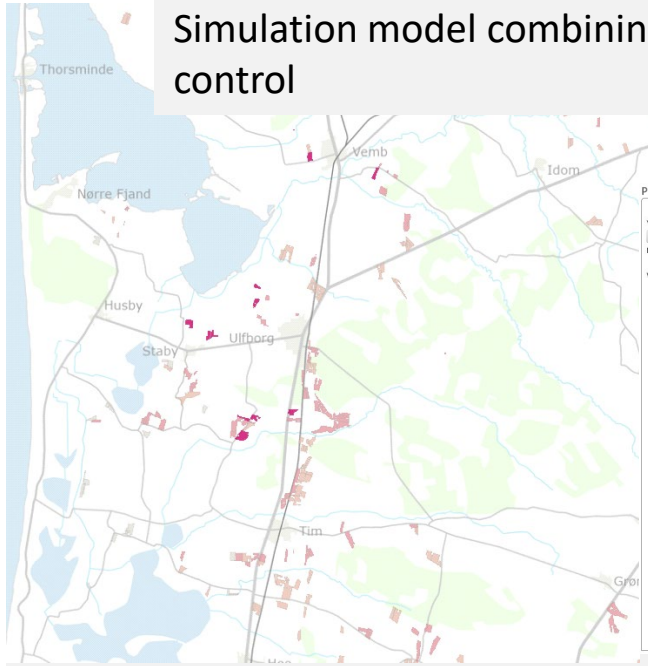
- Host specificity
- Erosion of host resistance
- Risk of fungicide resistance

Oospores in Denmark. Documented since 1997

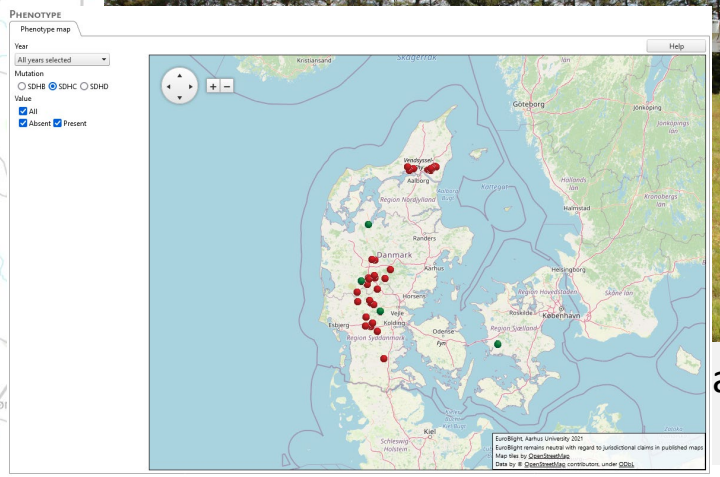


BlightTr … LB and EB

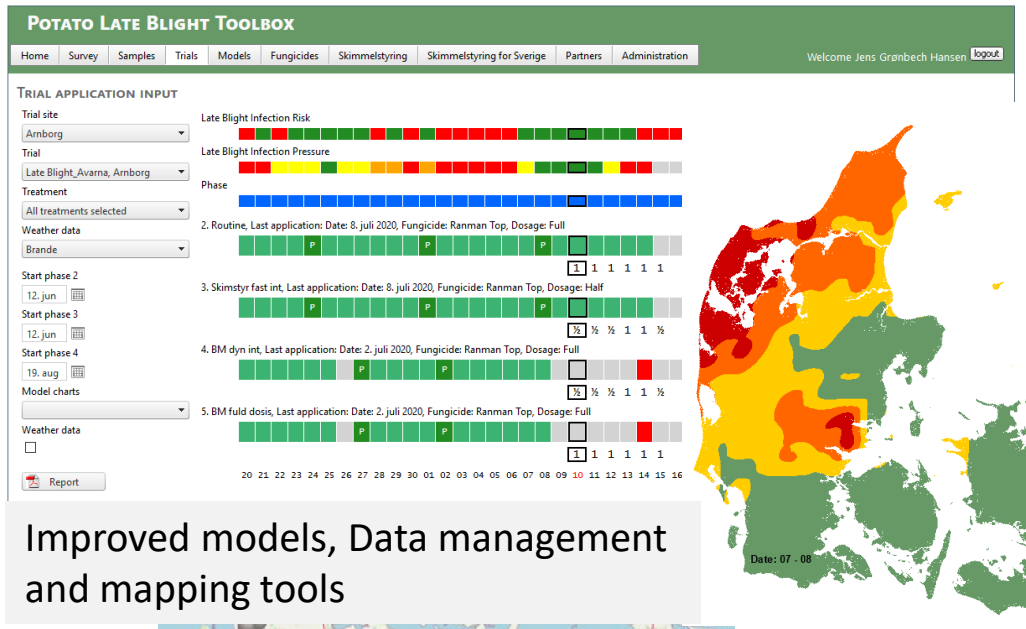
Simulation model combining PLB and EB control



GIS Risk model for oospores



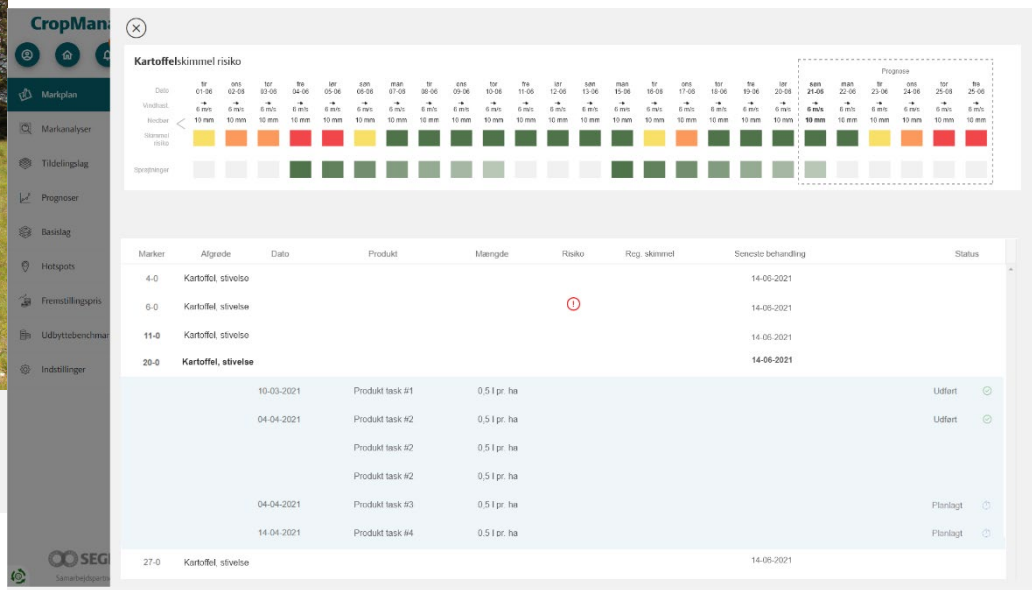
Monitoring fungicide resistance, EB



Improved models, Data management and mapping tools

Genotyping of *P. infestans*

…aled



BlightManager in CropManager


Population
OTHER
EU_43_A1
EU_41_A2

SSR Data Analysis with Poppr

Data Summary | Genotype Freq | Min.Spanning Tree | MST JS | Phylogenetic Tree | PCA | MLG INFO | Download | Parallel Coord

Following radio buttons can be used to select the color of node labels. This is useful only if the population structure is set as something other than coutry. When the population structure is se
coutry,the radio buttons are not useful.

Choose color for node labels: Genotype

Choose pop to be displayed: All

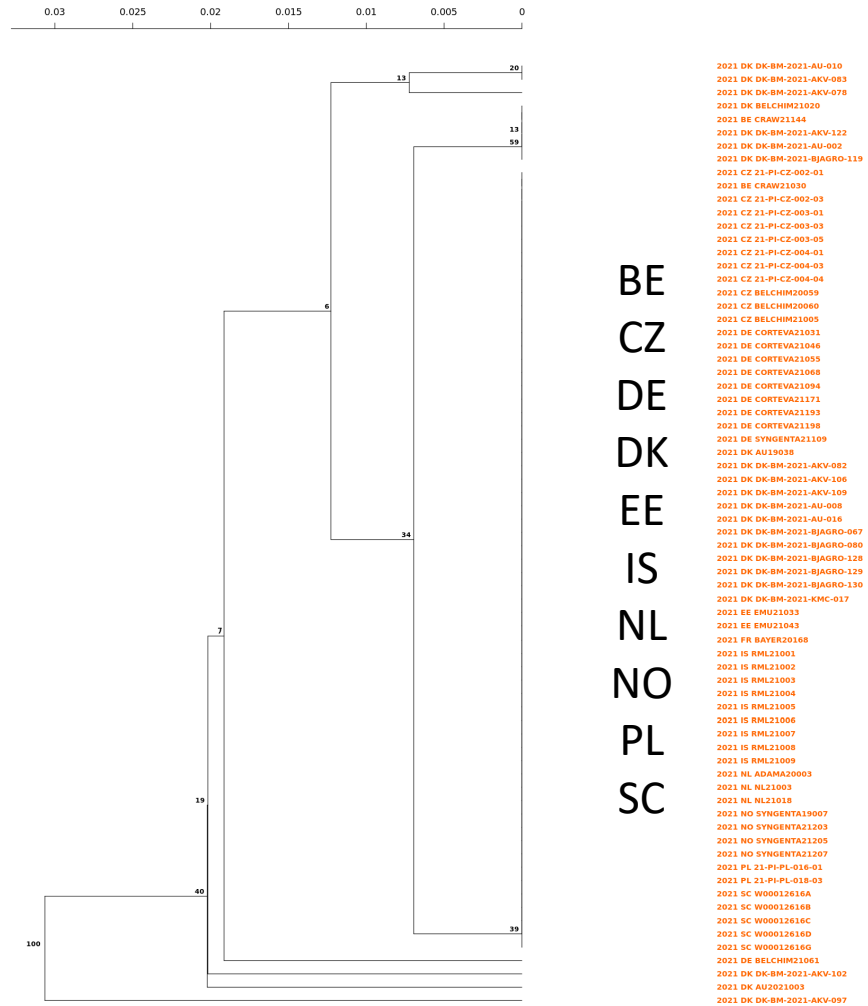
Remove Clones: Yes / No

Type of tree: phylogram / unrooted

Bootstrap replicates: 70 (30 | 2,430 | 4,830 | 7,230 | 9,630 | 10,000)

Cutoff value: 5 (0 | 5 | 15 | 25 | 35 | 45 | 55 | 65 | 75 | 85 | 95)

Update Phylo tree



Recommendations

Early warning & control

1. Continue monitoring of *P. infestans* population (+phenotypic traits!) and collaborate with many partners
2. Stepping up IPM e.g. reduce primary inoculum sources and increase attention on more sanitation measures
3. Introduce new and more resistant cultivars and describe the resistance type, level and stability (for use in DSS)

4. More research in use of biologicals and combinations of biologicals with traditional fungicides
5. Improve our DSS and integrate LB and EB models and spray recommendations also for use of biologicals
6. Support increase in organic potatoes – area, yield and quality
7. More and better education and knowledge transfer in the use of biologicals.

8. Extension (SEGES) implement a Field specific (GIS based) version of the basic DSS components developed by AU
9. Political focus on the Potato Value Chain and EU Green Transition, Farm to Fork (industry establish demo farms)
10. Continue a research and early warning infrastructure that includes all stakeholders

Characterisation of the level and type of resistance of potato varieties to late blight (Phytophthora infestans)

Isaac Abuley and Jens G. Hansen

Published Online: 31 Mar 2022 | https://doi.org/10.1094/PHYTO-07-21-0309-R

Eur J Plant Pathol (2021) 161:645–663
https://doi.org/10.1007/s10658-021-02350-4

An epidemiological analysis of the dilemma of plant age and late blight (*Phytophthora infestans*) susceptibility in potatoes

Isaac Kwesi Abuley · Jens Grønbech Hansen

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Thank you for your attention