

# Changes in late blight blight infection between 1922-2021

Mati Koppel



**Eesti Maaülikool**  
Estonian University of Life Sciences

[www.emu.ee](http://www.emu.ee)

# Potato breeding in Jõgeva Plant Breeding started in 1920.



Scoring of potato late blight since 1922

The same trial set up since 1980

40-400 varieties

2 row plots 'a 5 plants

3 replicates

assessment 1-2 times a week

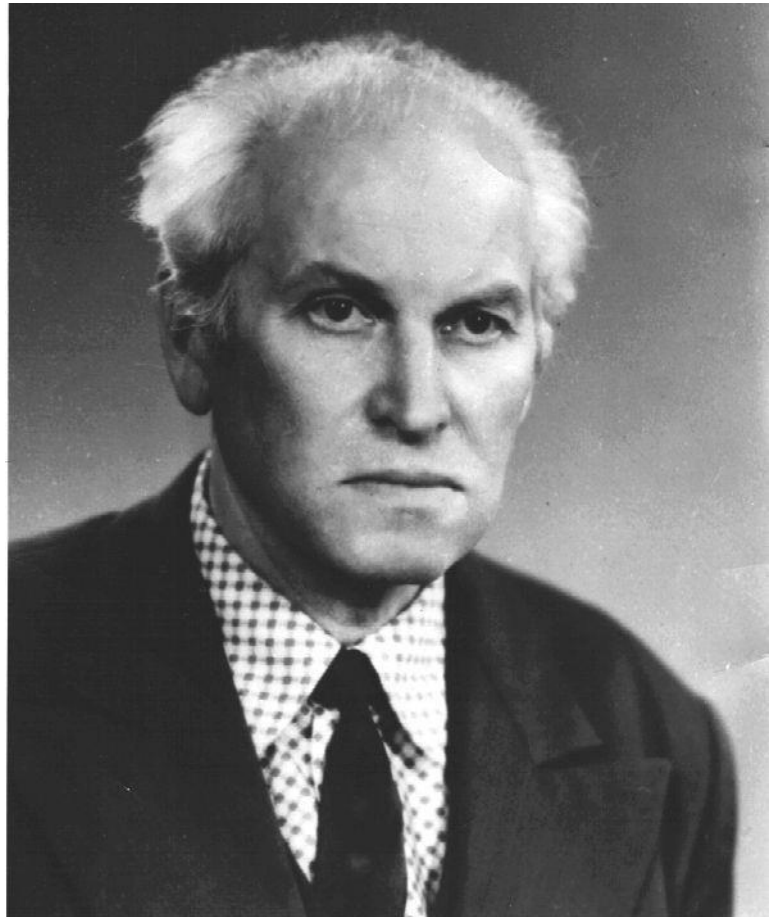
Several varieties have been in trial for a longer period



**Eesti Maaülikool**  
Estonian University of Life Sciences

[www.emu.ee](http://www.emu.ee)

In memory of



Jaan Sarv 1922-1991

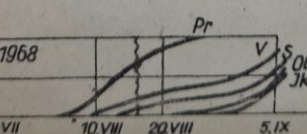
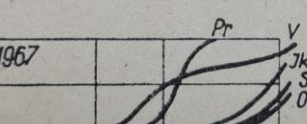
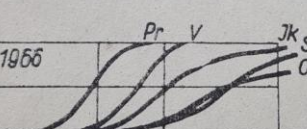
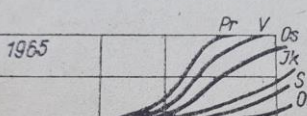
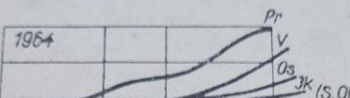
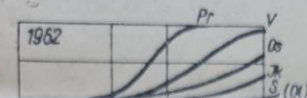
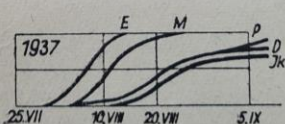
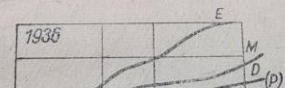
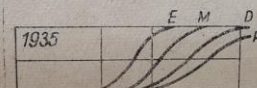
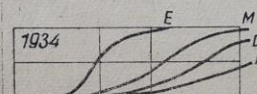
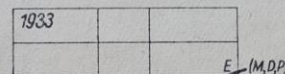
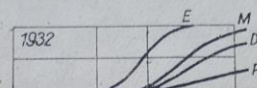
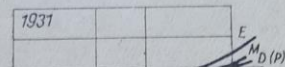
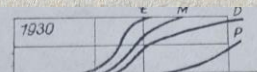
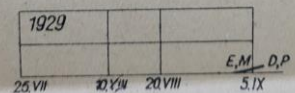
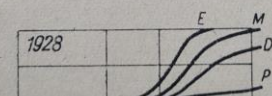
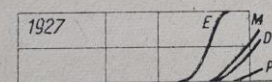
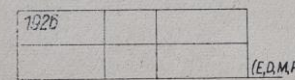
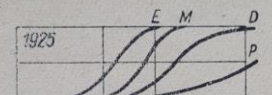
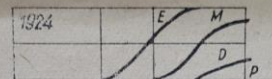
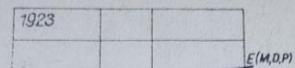
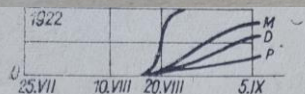


**Eesti Maaülikool**  
Estonian University of Life Sciences

[www.emu.ee](http://www.emu.ee)

# DIE KRAUT- UND KNOLLENFÄULE UND DIE WITTERUNGSBEDINGUNGEN IN DER SAATZUCHTANSTALT JÖGEVA VON 1922—1968

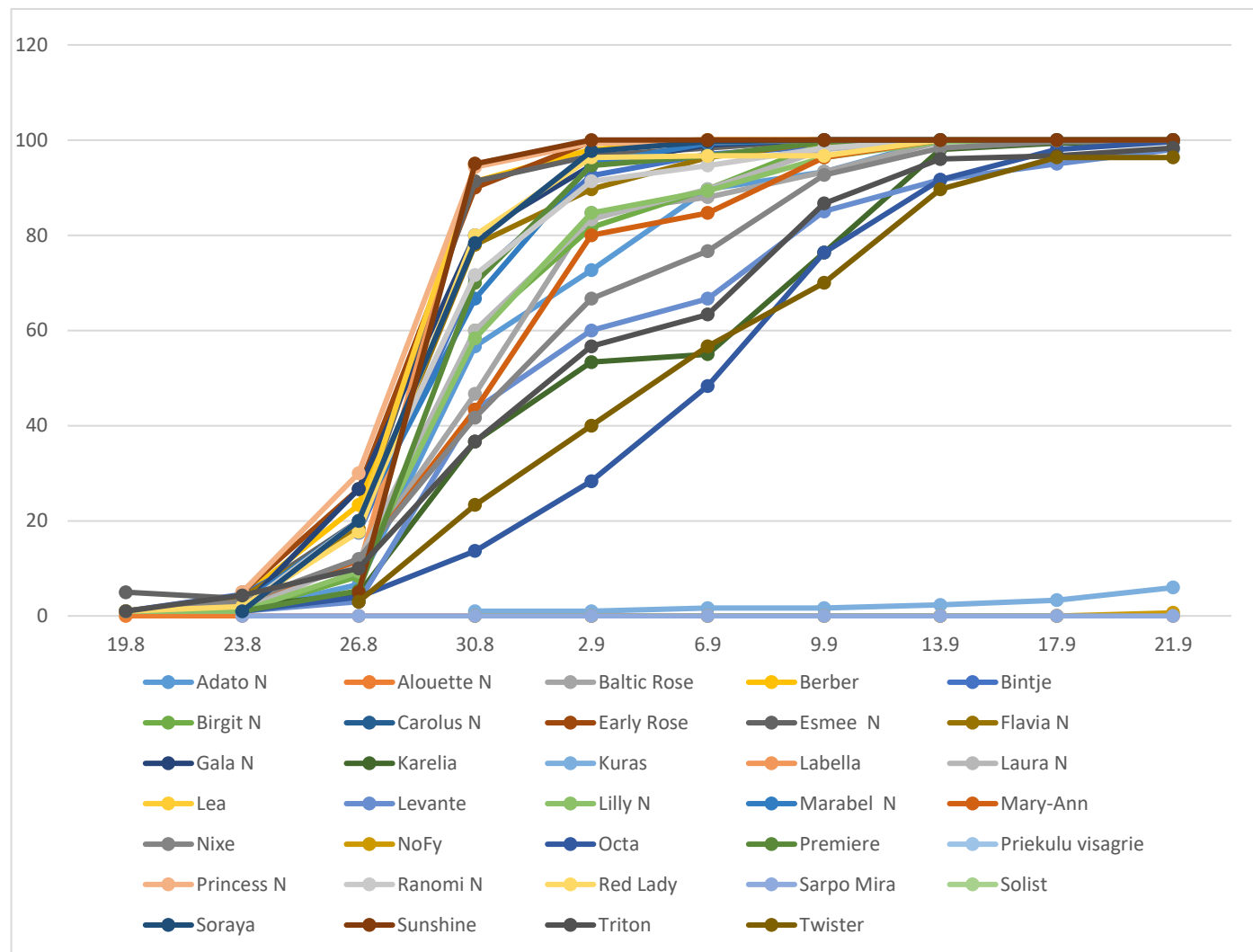
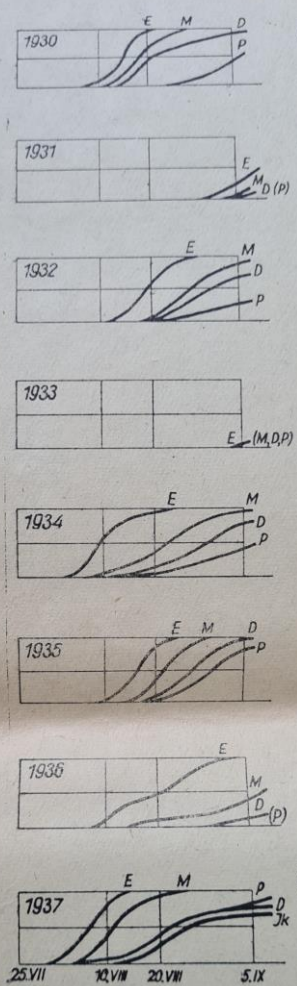
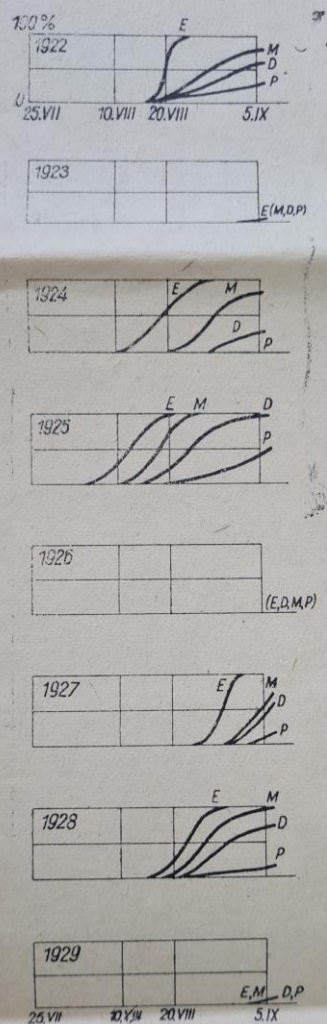
J. SARV  
K. PÖIKLIK



**Eesti Maaülikool**  
Estonian University of Life Sciences

www.emu.ee

# Late blight development in 2021



# My interests

Have changes in *P.infestans* population caused:

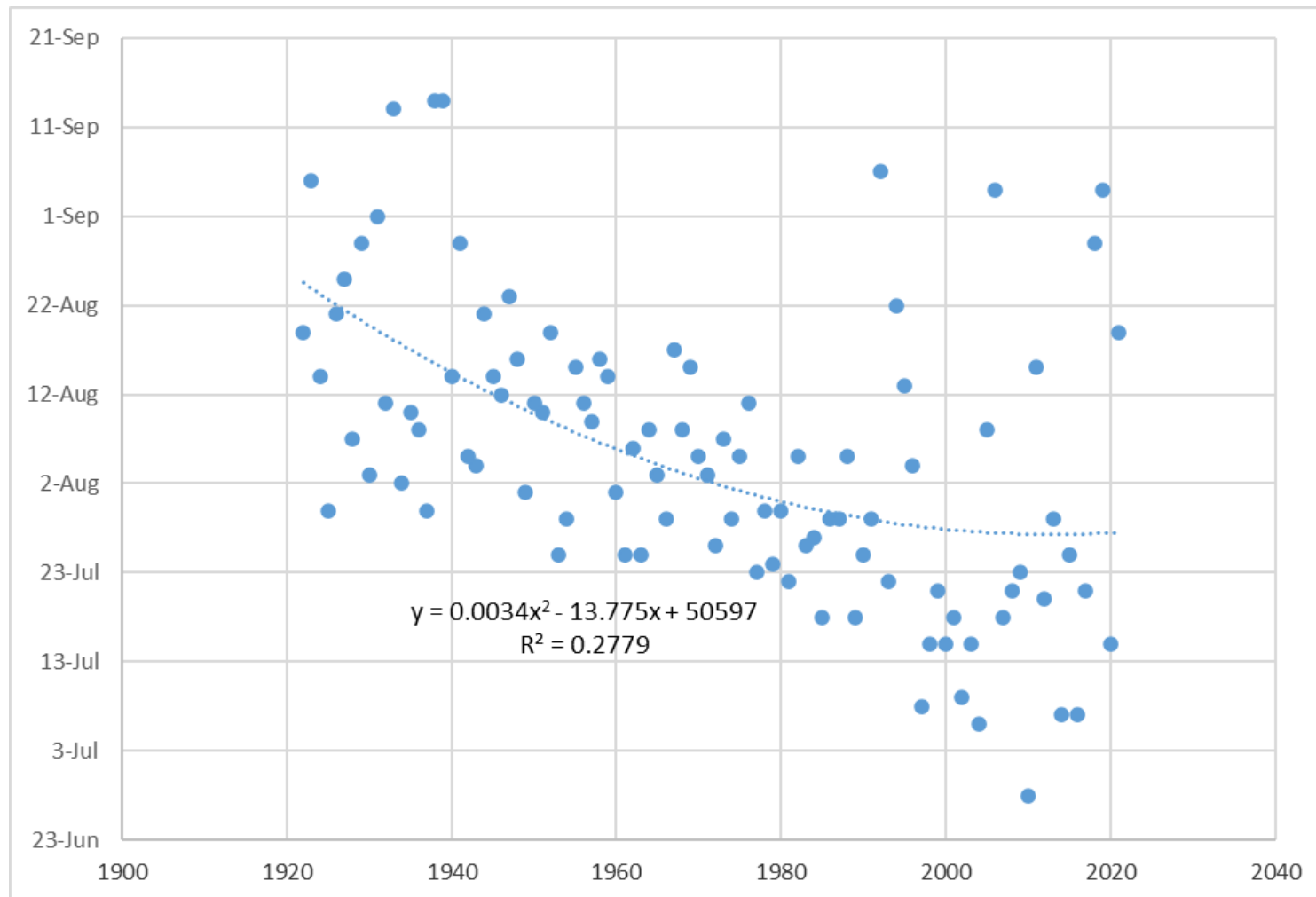
changes in time of first infection

changed virulence/ breakdown of R gene resistance

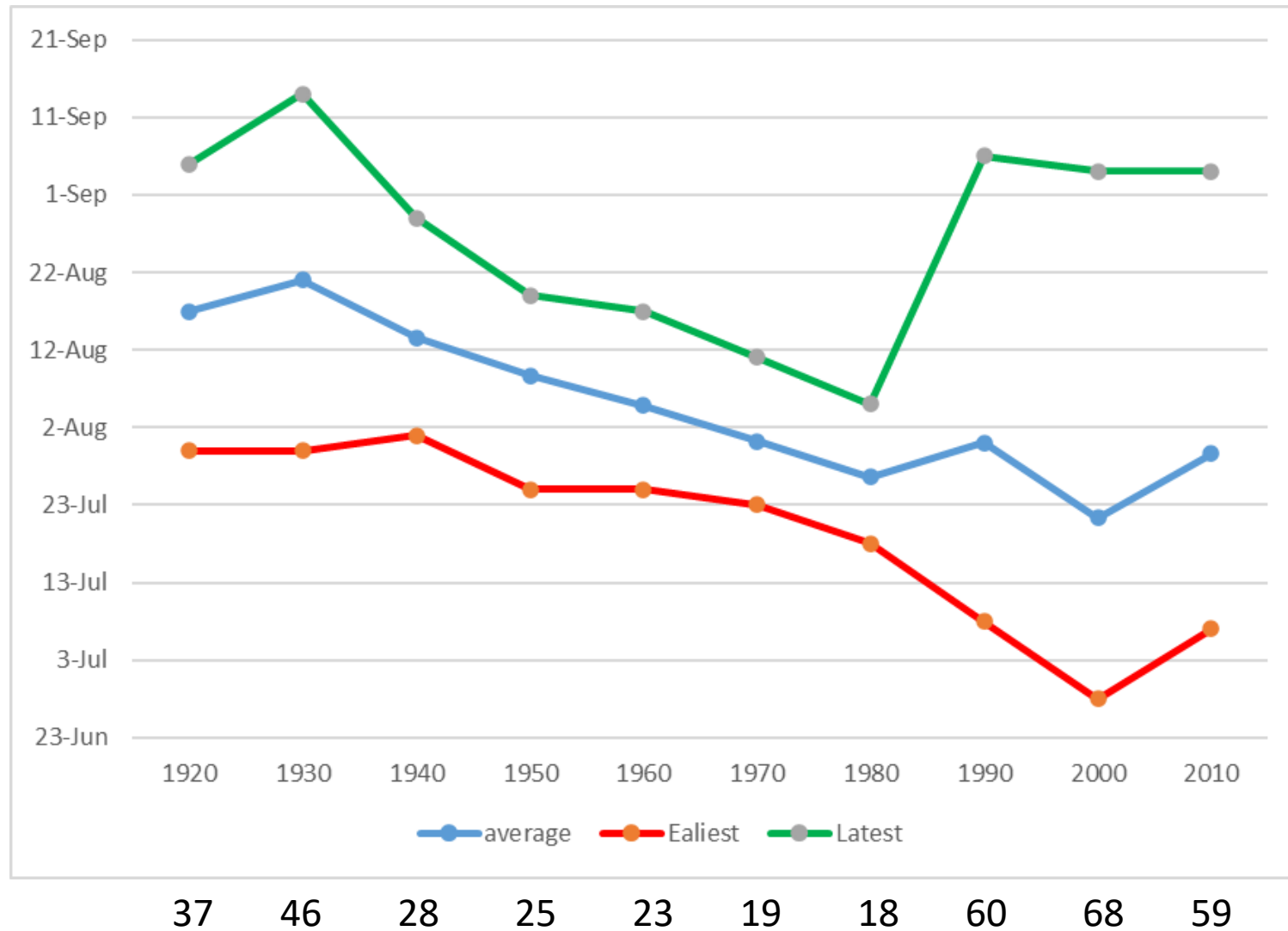
changed aggressiveness ?



# Changes in time of first infection

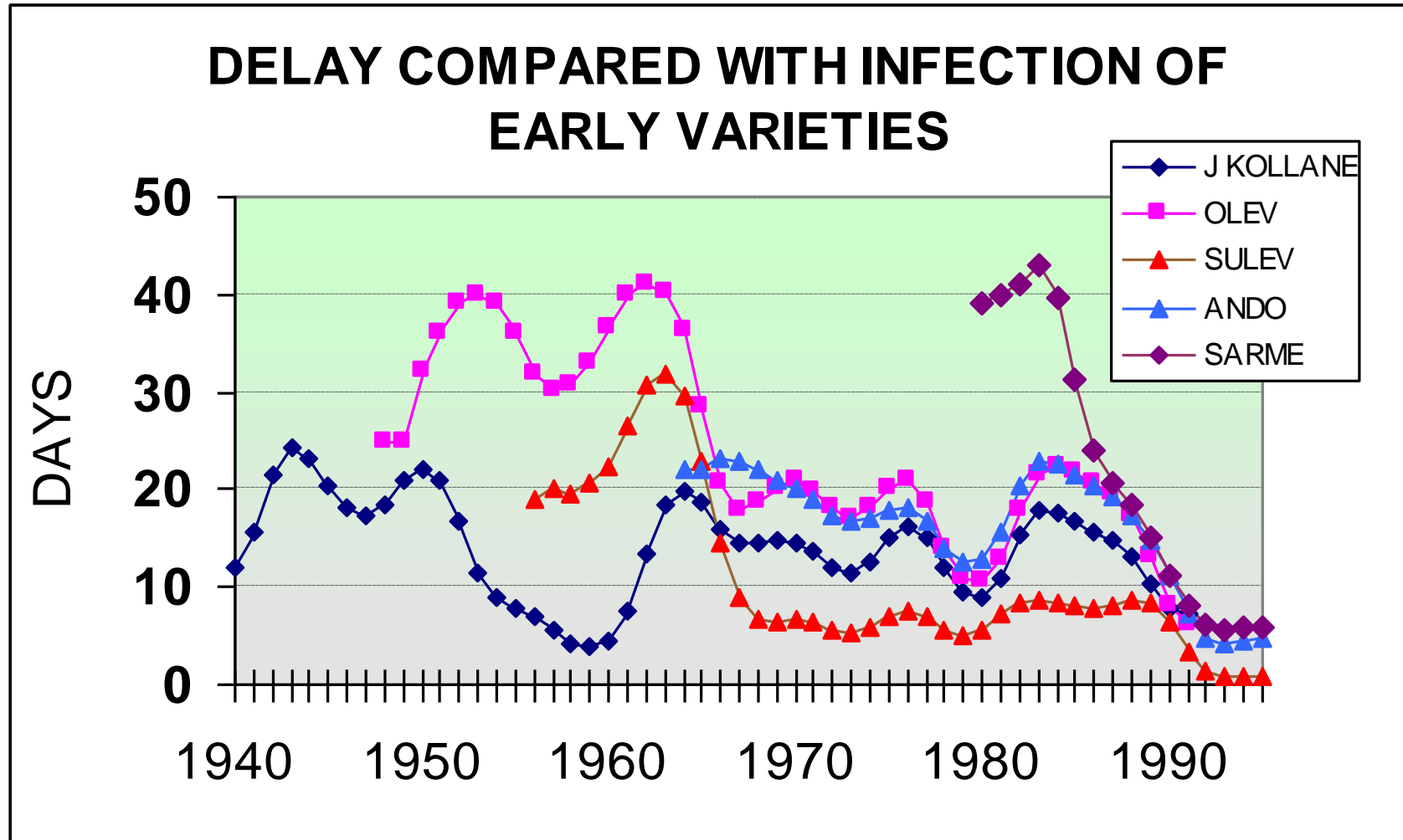


# Changes in time of first infection



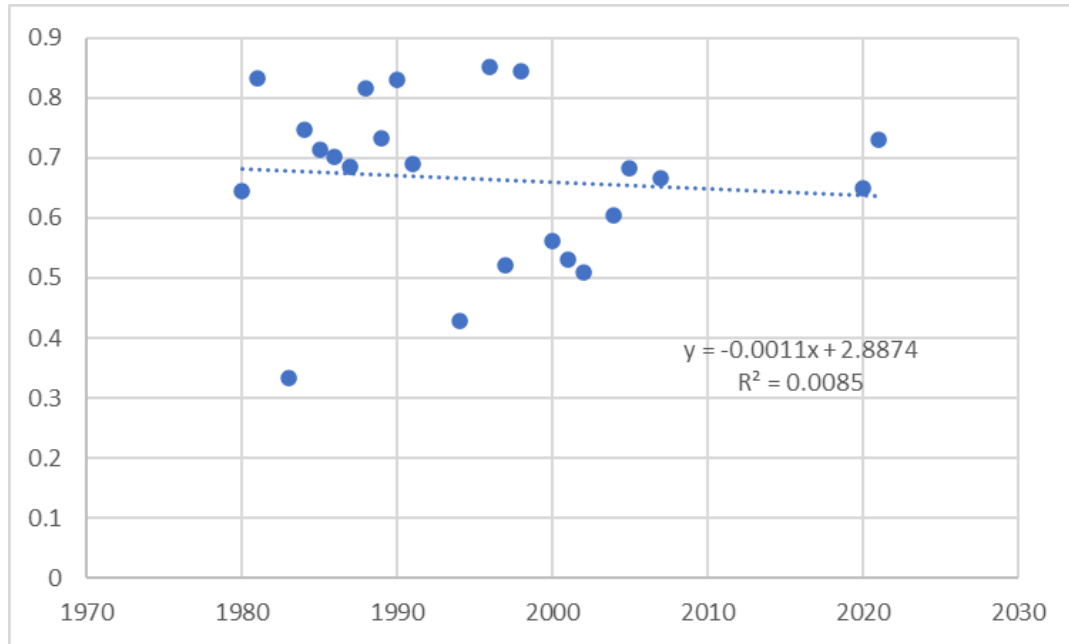


# Changed virulence/ breakdown of R gene resistance

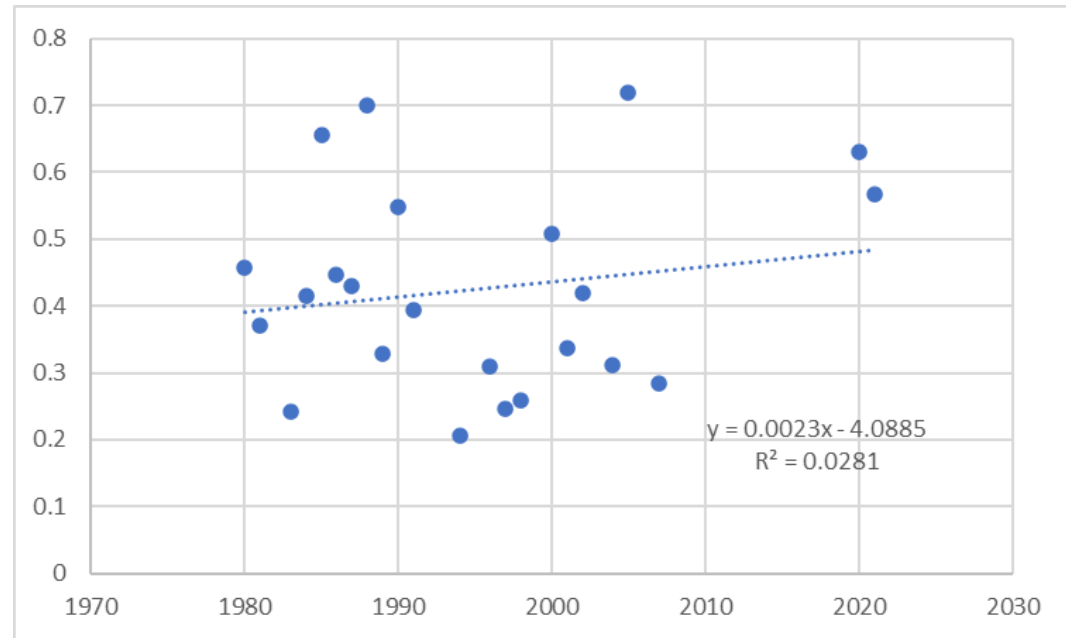


# Changed aggressiveness ? variety Bintje - susceptible

## rAUDPC

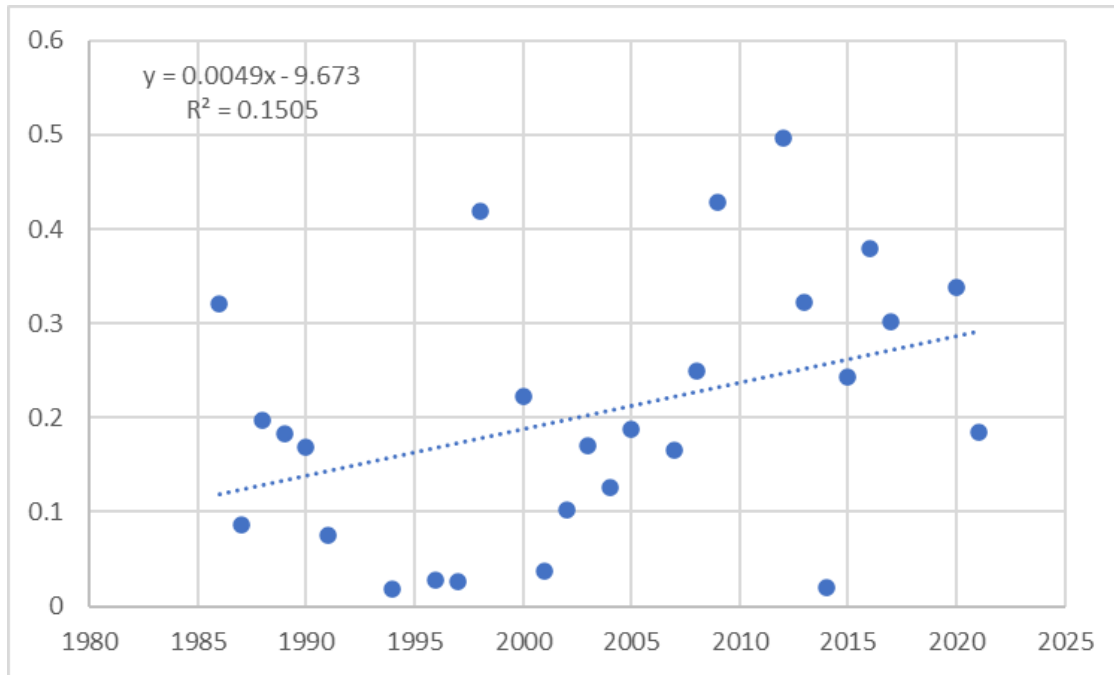


## AIR

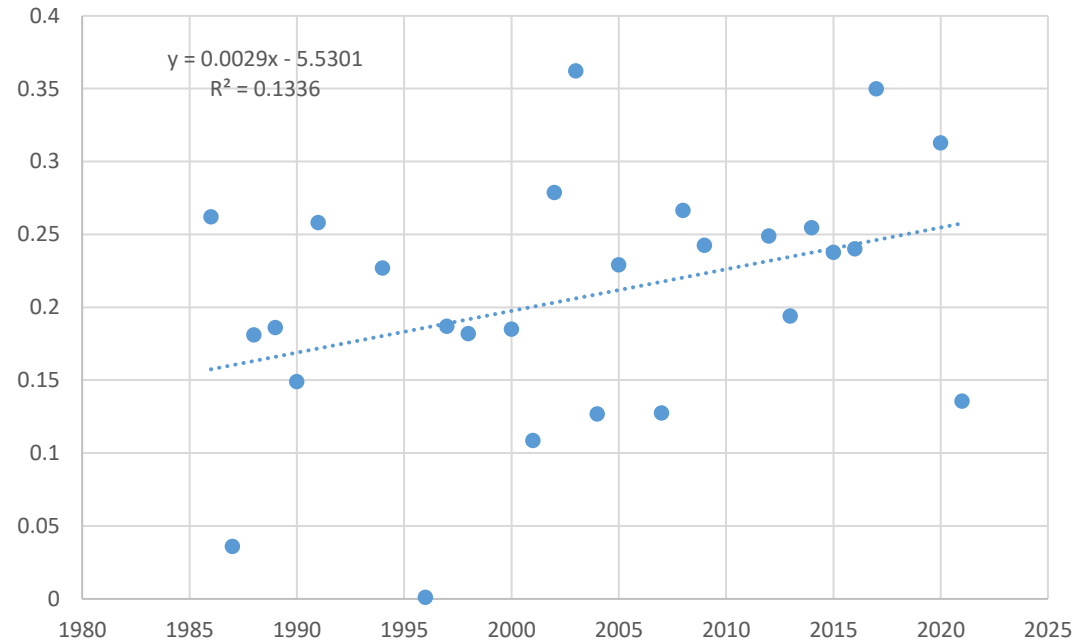


# Changed aggressiveness ? variety Anti – field resistance

## rAUDPC



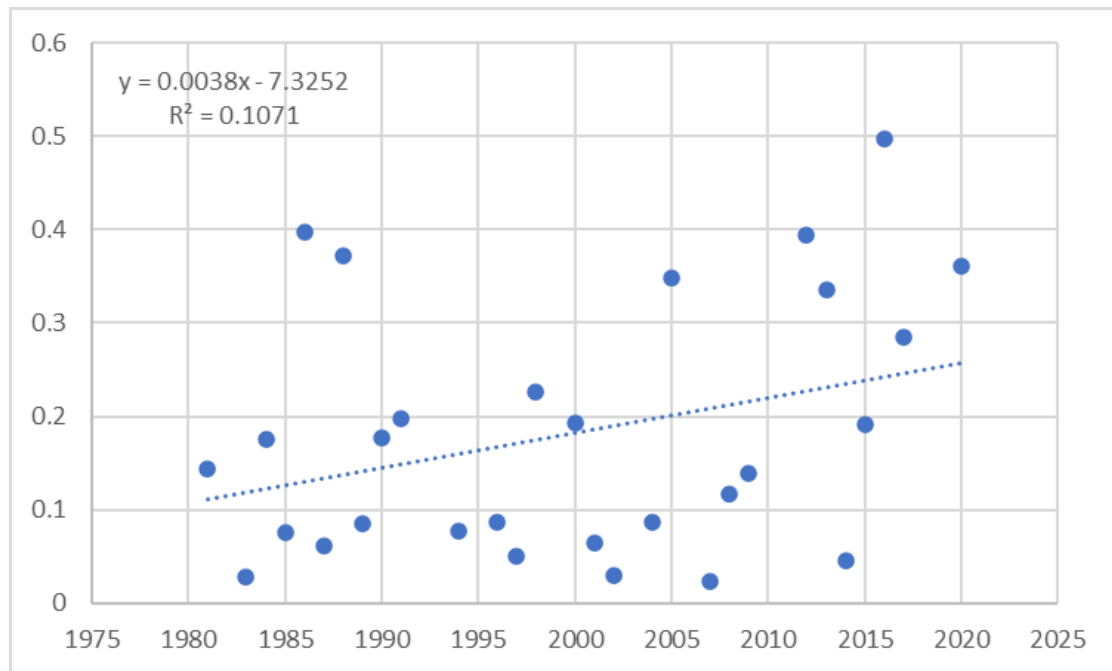
## AIR



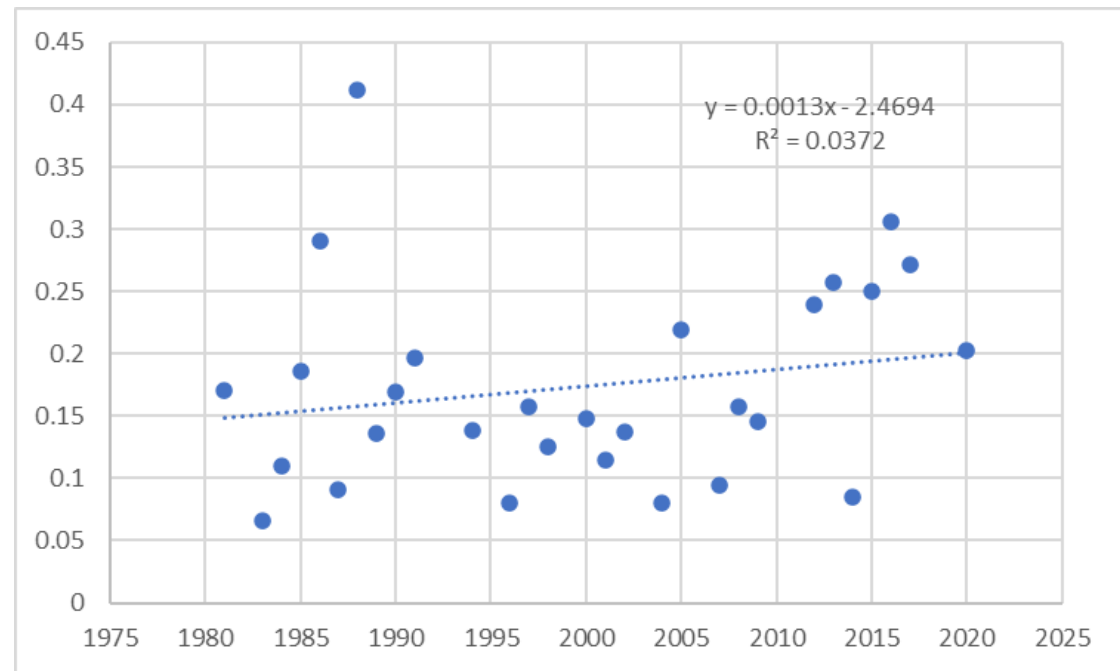
# Changed aggressiveness ?

variety Ando – R1; R4 + field resistance

## rAUDPC

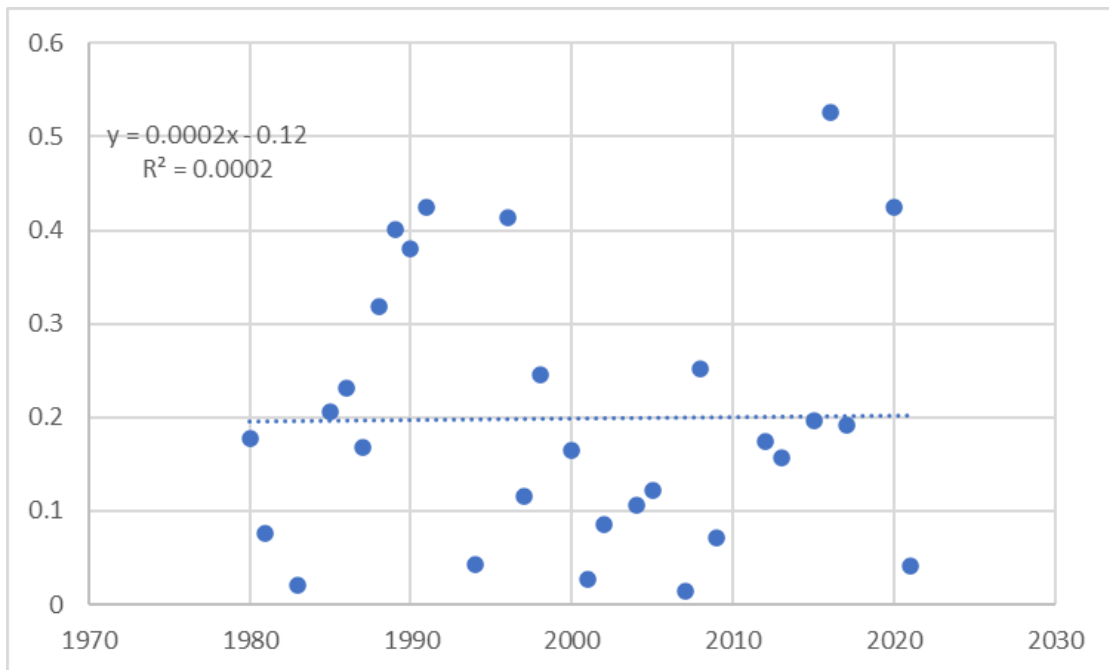


## AIR

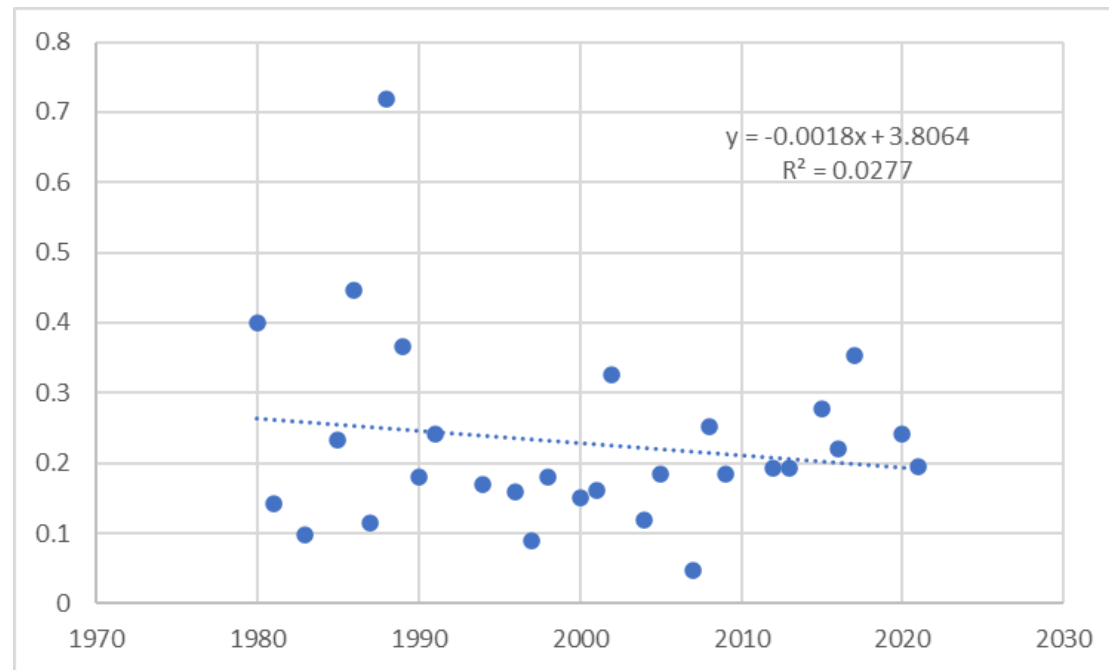


# Changed aggressiveness ? variety Sarme – R1; R2,R3,R4

## rAUDPC



## AIR



# Conclusions

Infection is starting 3 weeks earlier; fluctuation between the years has increased in last two decades

R-gene based resistance has broken

No changes on increased aggressiveness in susceptible variety

Slight increase of aggressiveness in field resistant variety



# Thank you !



**Eesti Maaülikool**  
Estonian University of Life Sciences

[www.emu.ee](http://www.emu.ee)