

Skimmel, resistens og perspektiver for anvendelse af biologiske produkter

Lars Bødker

3-8-2022

Sculpture by Rowan Gillespie in Dublin.

SEGES
INNOVATION

Historie - Kartofflen/kartoffelskimmel

- Dyrkning af kartofler i Sydamerika går mere end 10,000 år tilbage
- Kartofflen er en vigtig basisføde i Andesbjergene fra 1500 – 500 f.v.t
- Kartofflen ankom til Europa ca. 1567
- Kartofflen udgjorde i 1845 1/3 af det dyrkede land i Irland og kartofler udgjorde 10% af kalorieindtaget i Europa.
- Kartoffler er i dag den 5. mest producerede afgrøde i verden
- Første bølge af kartoffelskimmel i Europa: “Great Irish Famine” 1845-1852 – 1 million døde og 1-2 million udvandrede
- Anden bølge af kartoffelskimmel. A2 kommer til Europa i 1976 – kønnet formering – oosporer – sædskiftesygdom

Kartofler i Peru



Kartofler i Peru



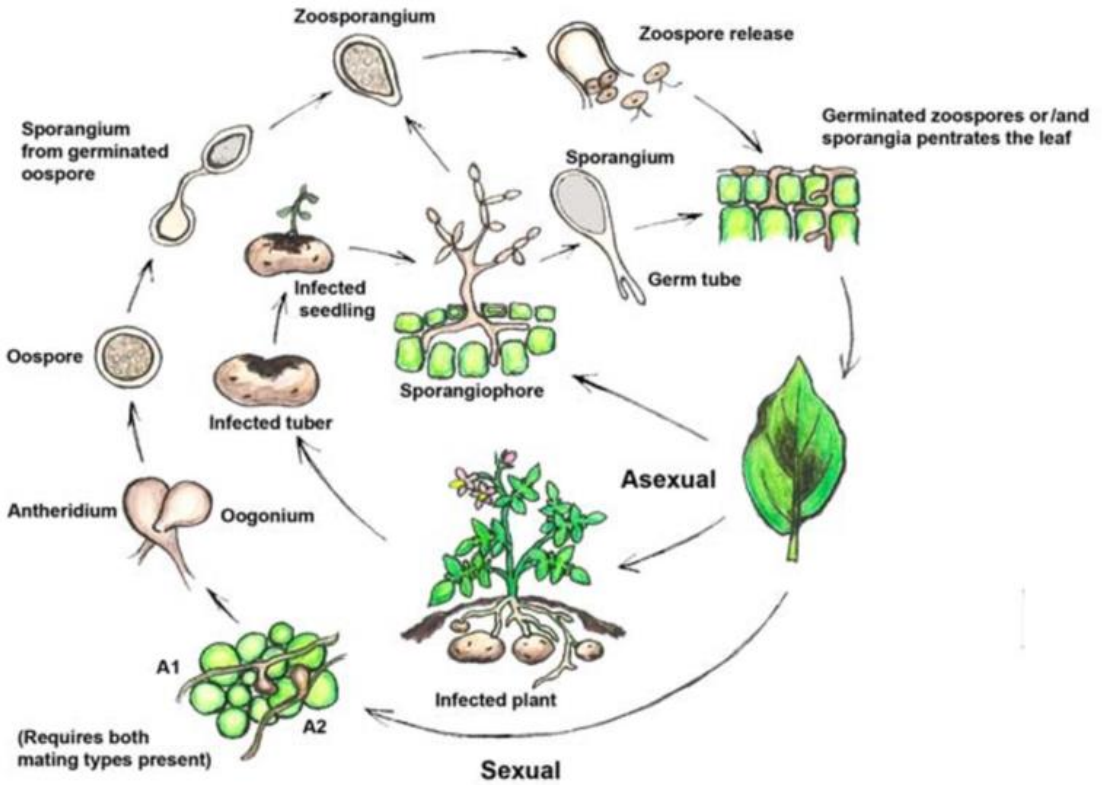
Kartofler i Peru



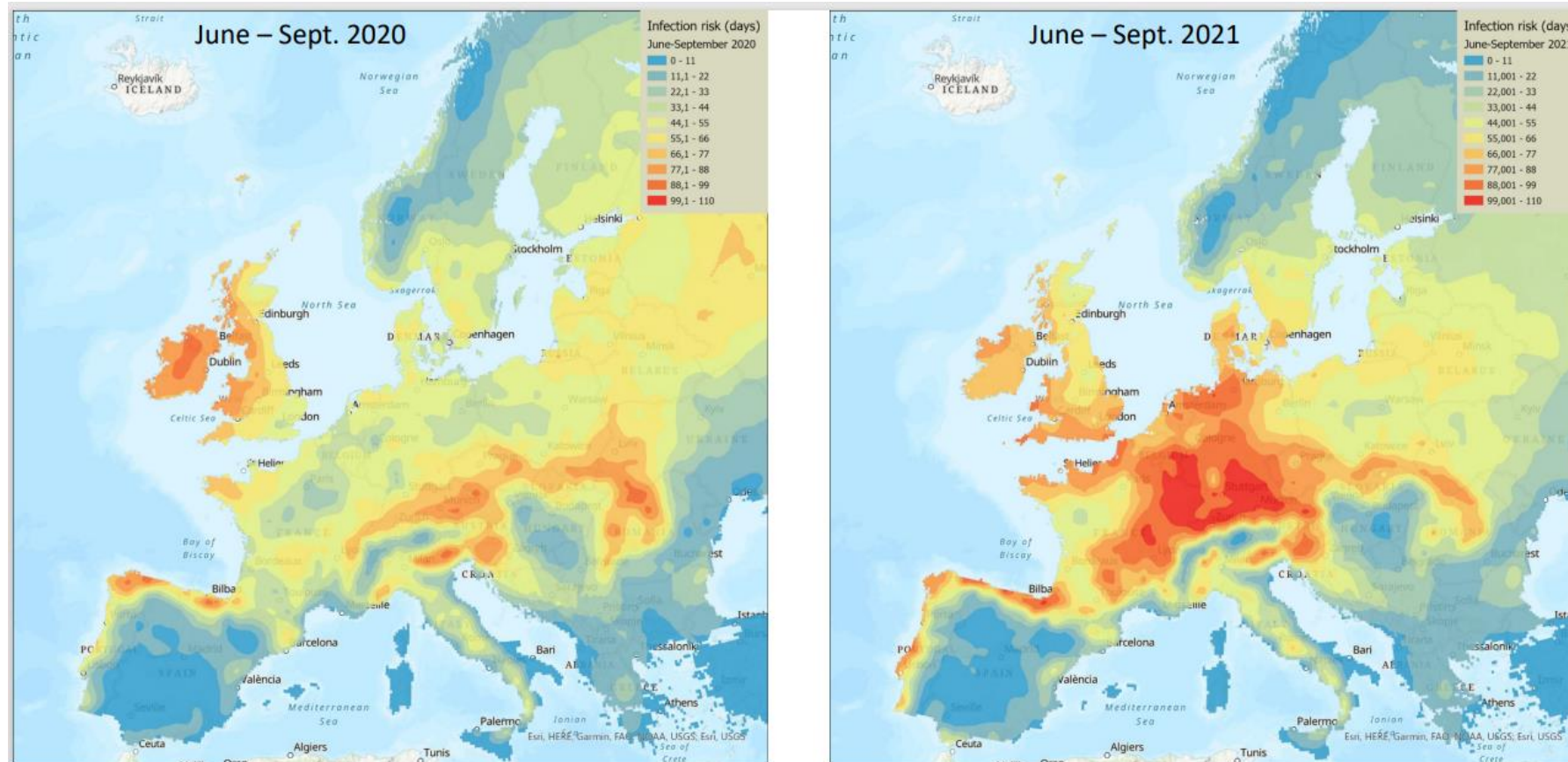
Kartofler i Peru



Kartoffelskimmel - sygdomscyklus

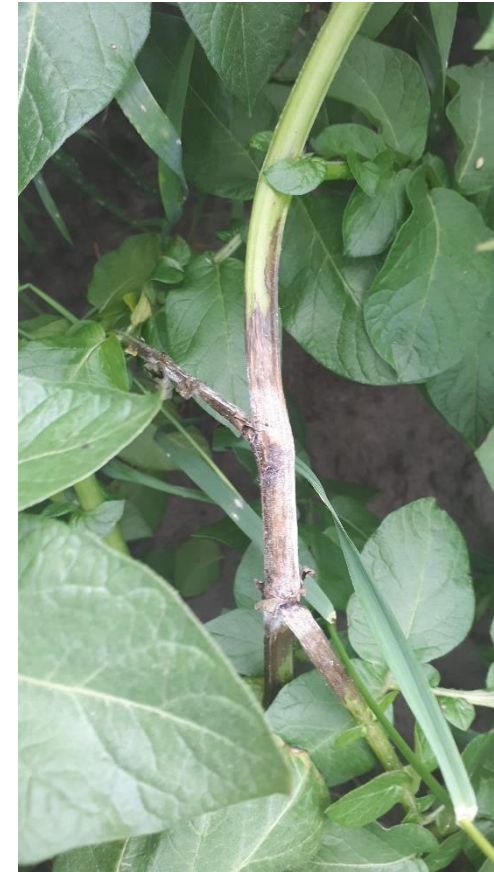


Potentiale for kartoffeldyrkning i DK - Skimmelrisiko



Jens G. Hansen og David Cook 2021

Primær infektion fra knolde



Oosporer - jordsmitte



Infektion allerede fra fremspiring



Infektion af blade som rører jorden

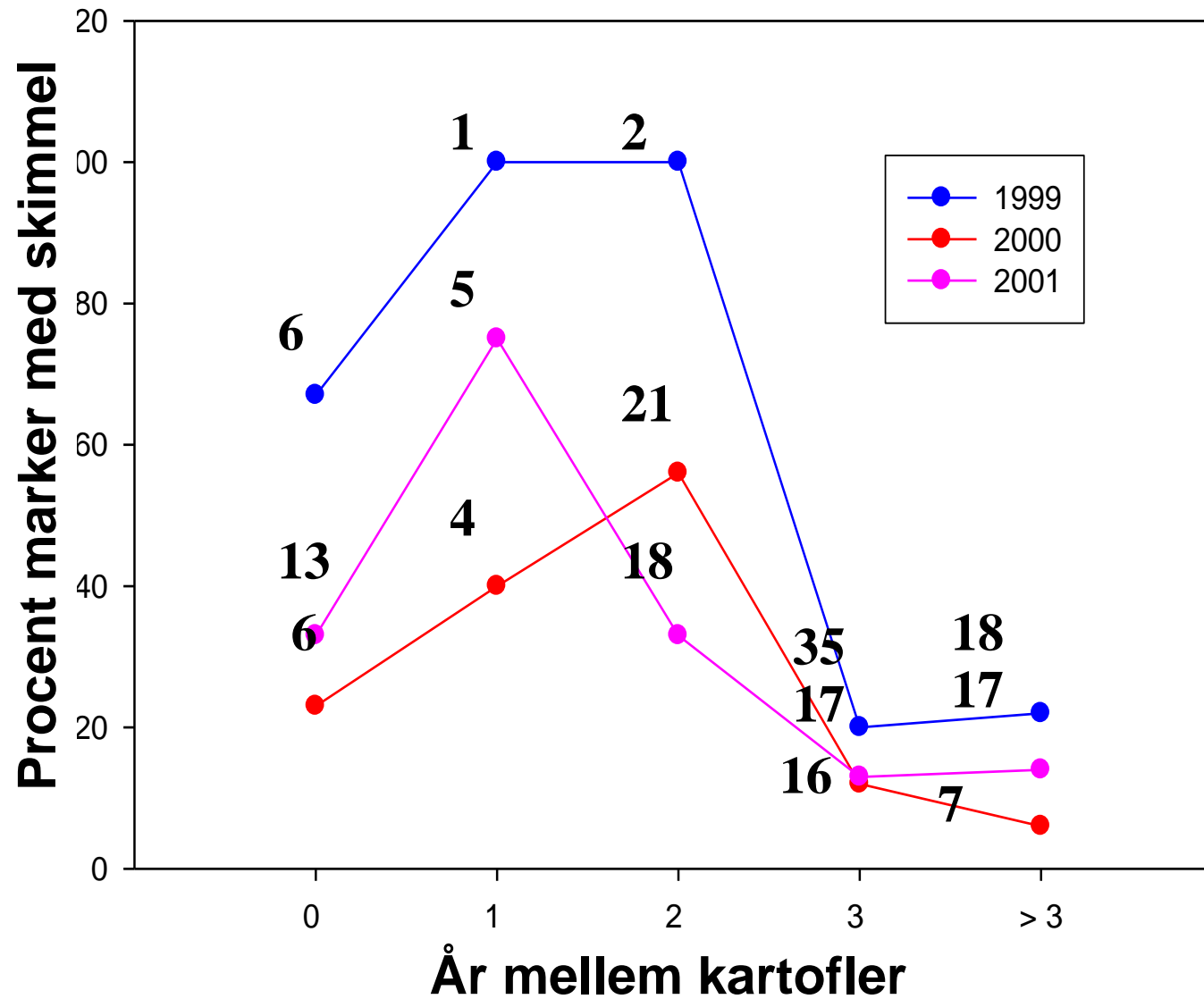


Spredning til alle stængler

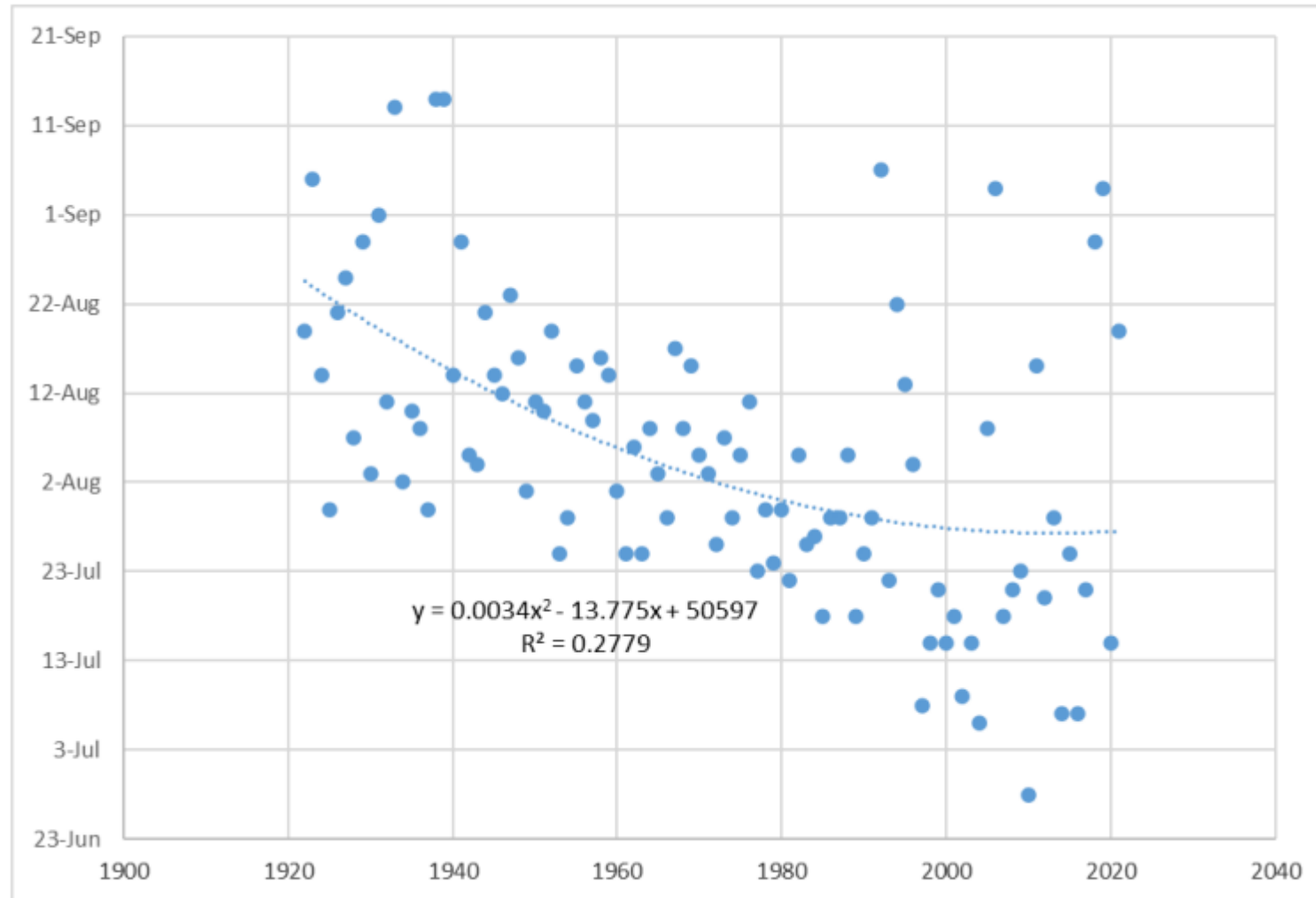


Betydning af sædskifte 1999-2001

AKV Langholt



Tidspunkt for første angreb i Estland



Forebyggelse – resistente sorter

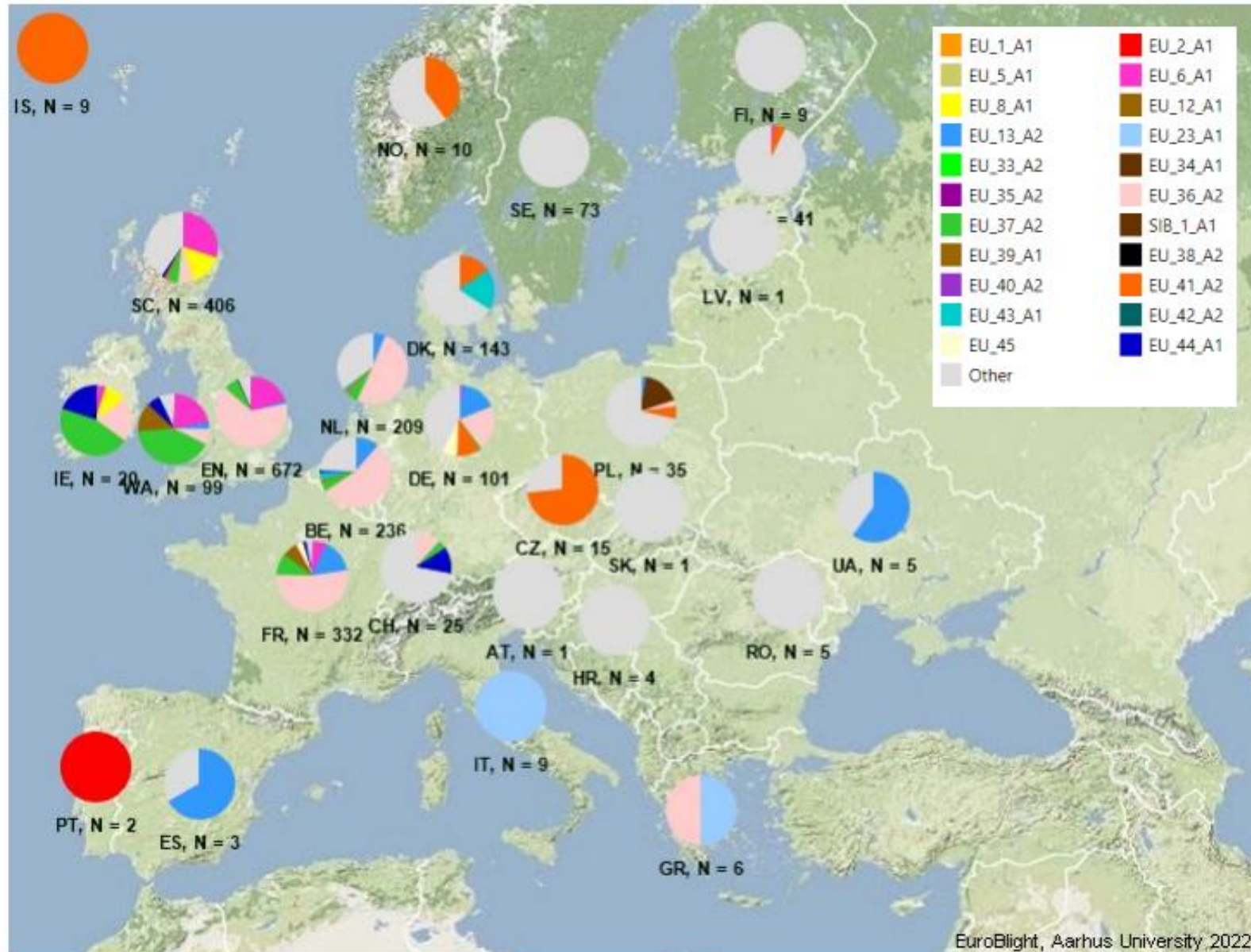


Virulence of Blue13



David Cooke & Alison Lees (SCRI)

Europe 2021 data



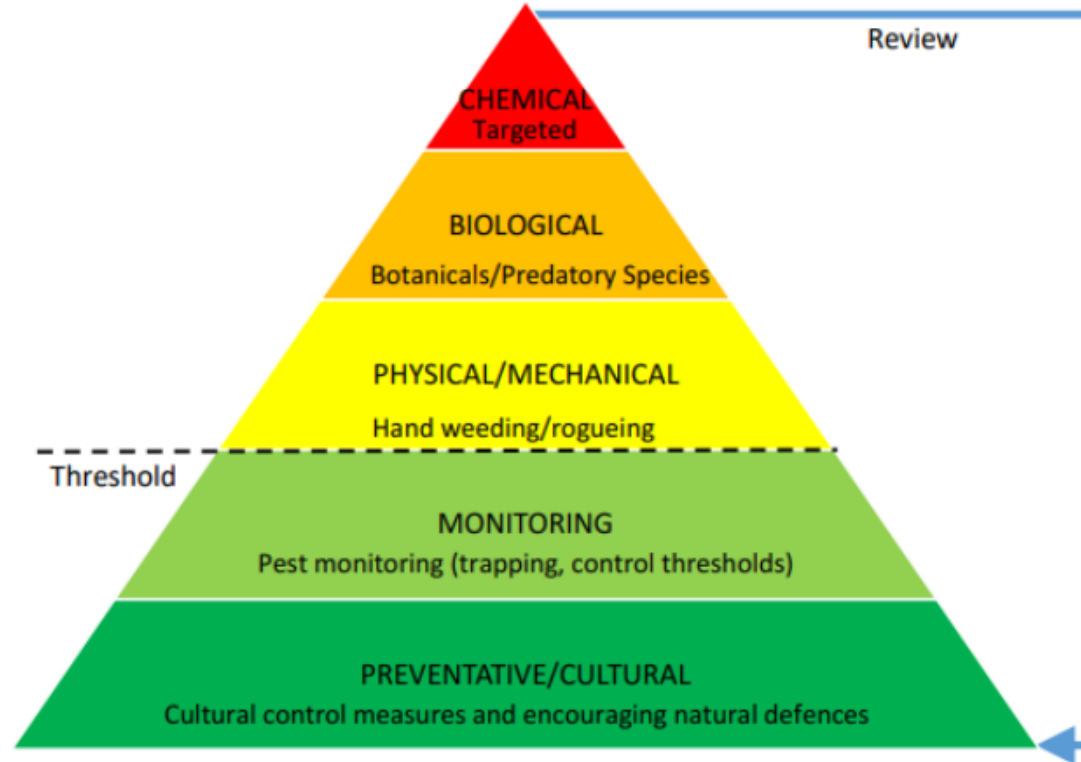
EU Farm2Fork Strategy

- At heart of EU Green Deal to make food systems fair, healthy and environmentally-friendly
- Linked to the EU biodiversity strategy
- A few objectives:
 - 50% reduction of overall use and risk from chemical pesticides by 2030
 - a reduction of nutrient losses by at least 50%
 - A reduction in the use of fertilizers by at least 20% by 2030
 - 25% EU's agricultural land organic

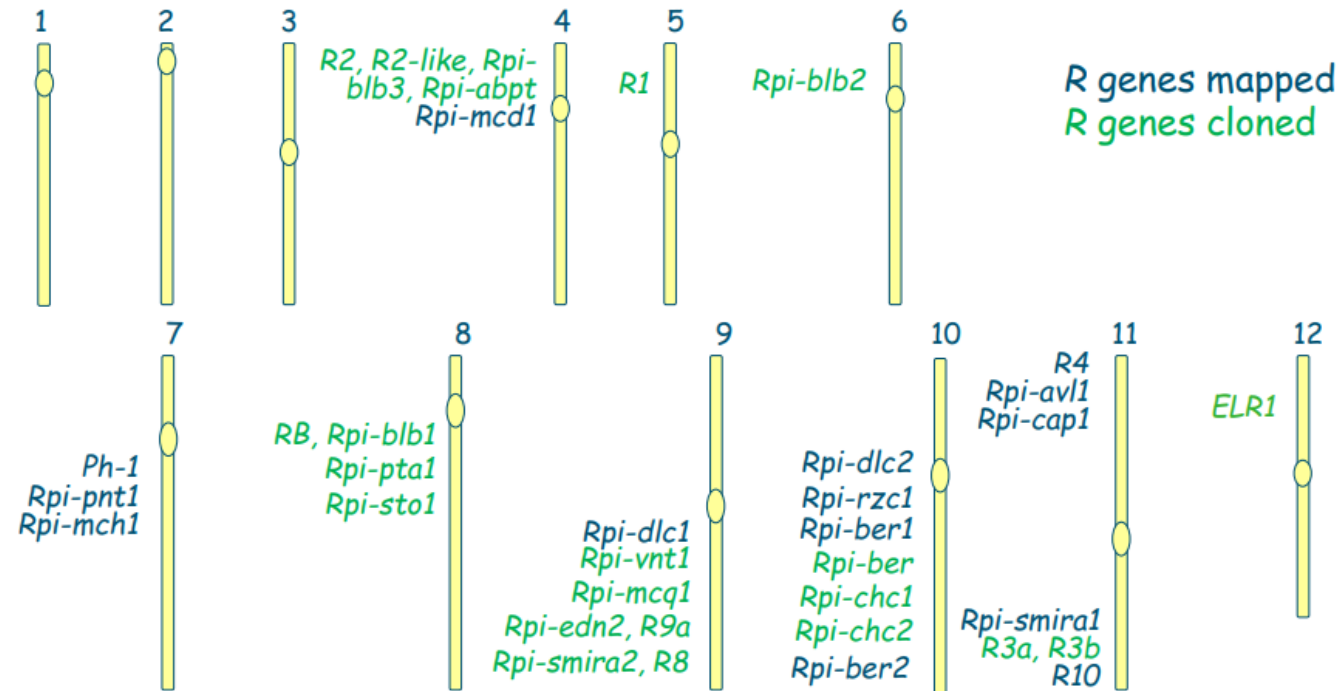


EU – Farm2Fork

Figure 1. Integrated Pest Management: 5 step approach to pest control.



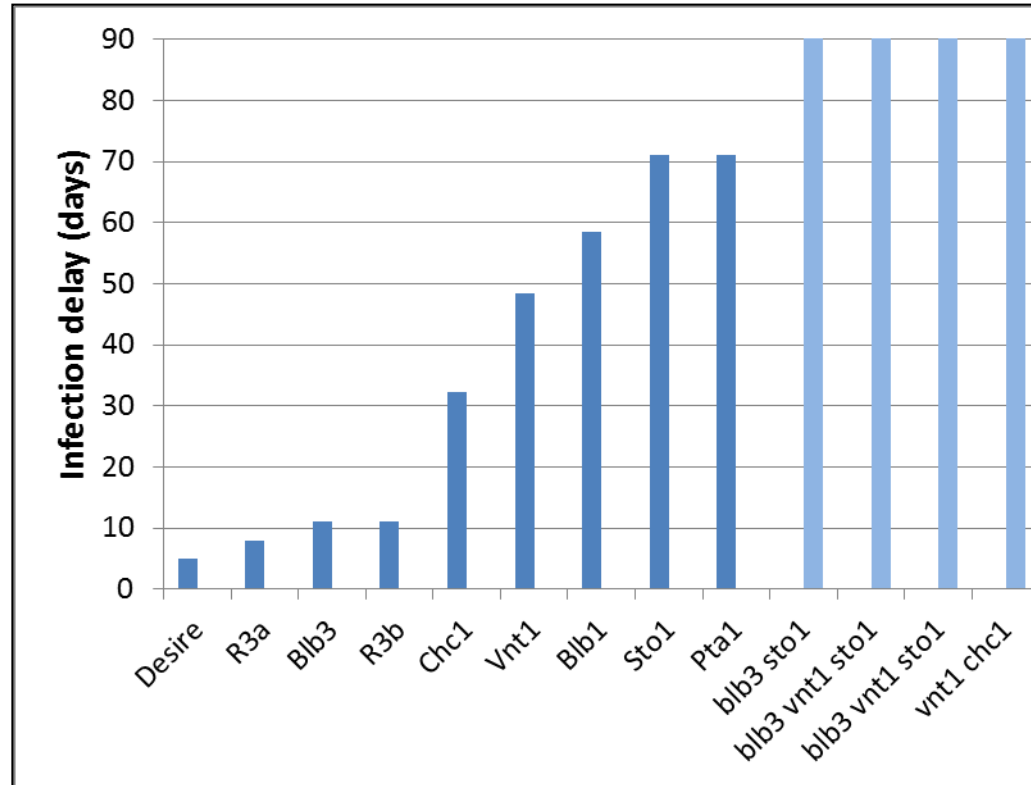
Resistensgener – antallet er begrænset



Geert Kessel 2021

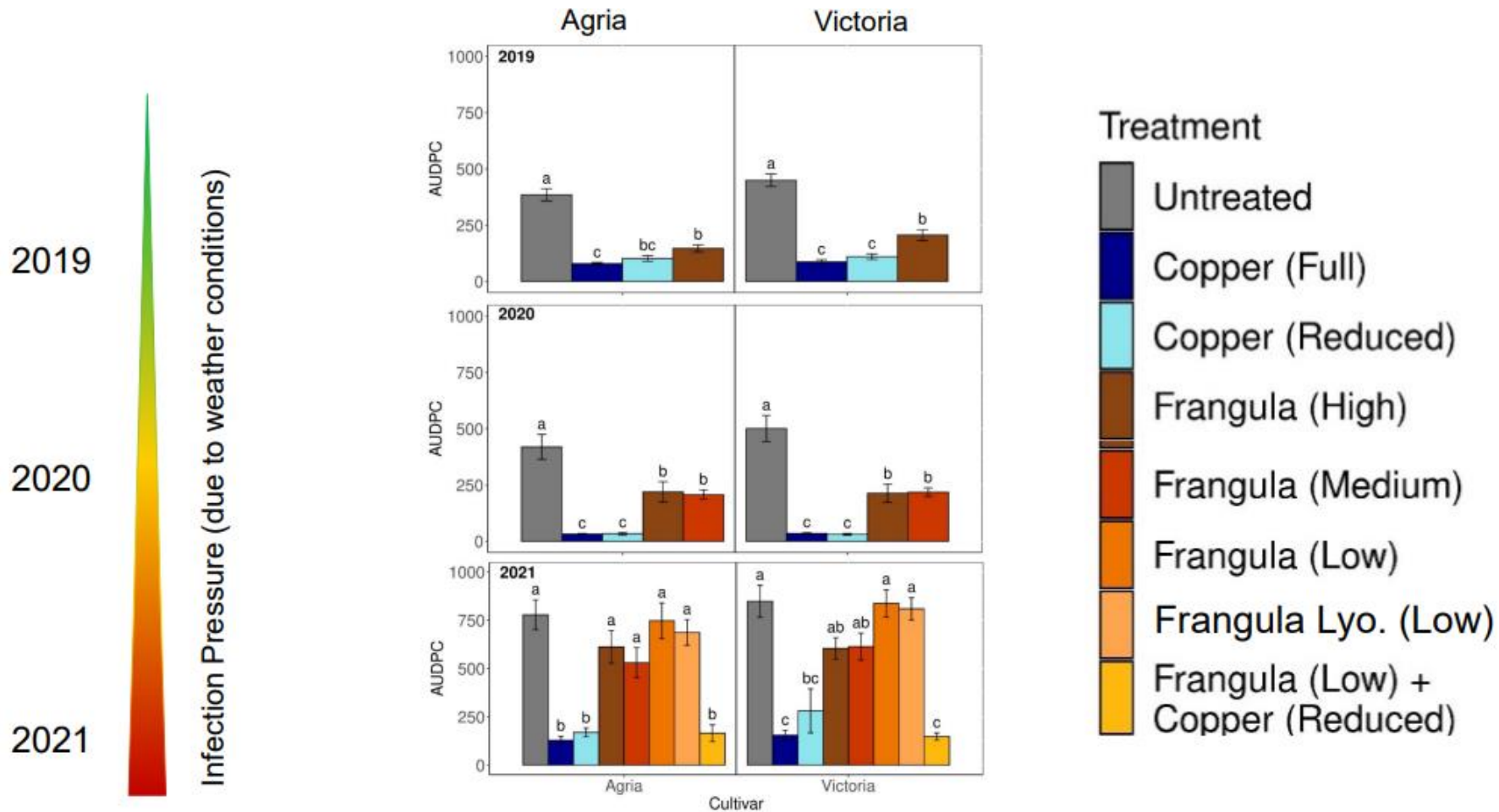
Effekt af resistensgener

Lelystad Desiree

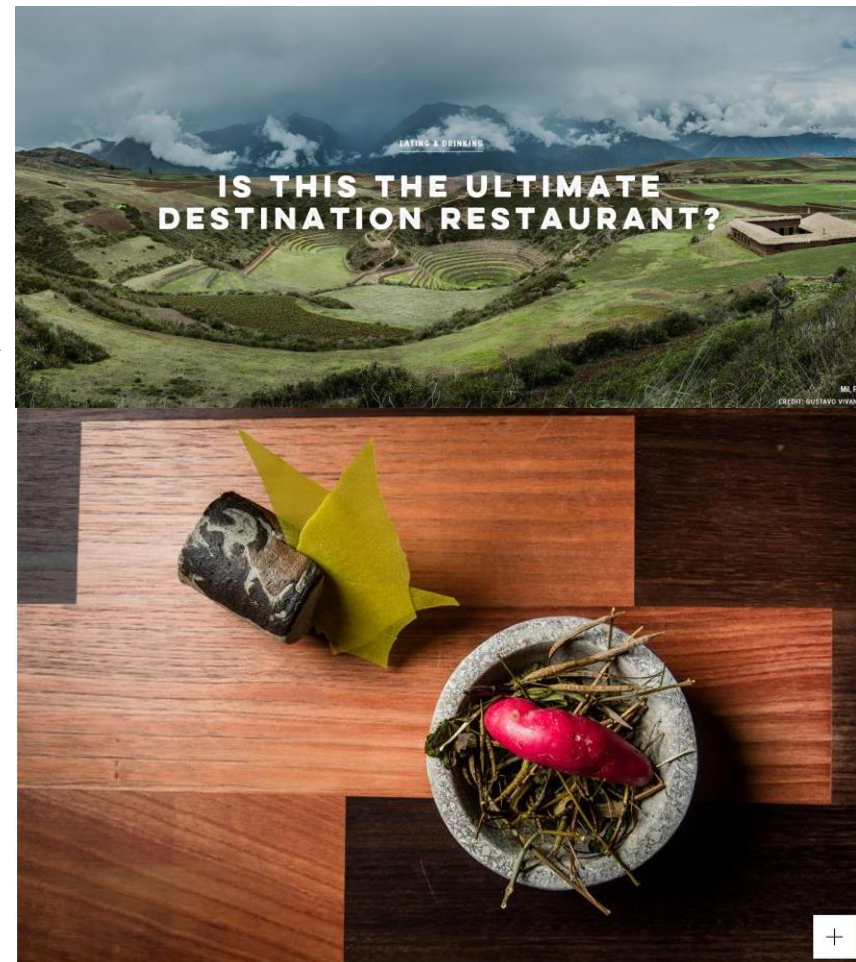


Geert Kessel 2021, Wageningen

Biologisk bekæmpelse 2019 - 2021



Kartofler kan være en kæmpe oplevelse



Diskussion

