

Loofziekten in pootaardappel

Huub Schepers

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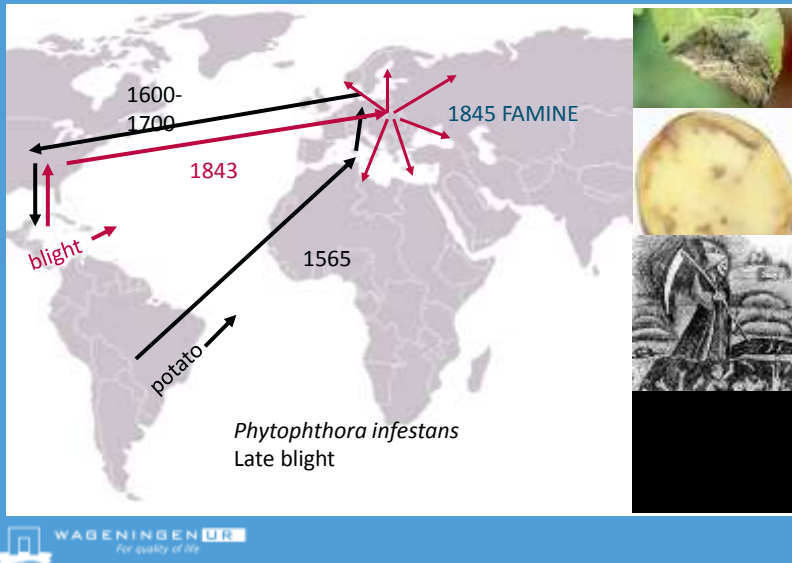


Aandachtspunten presentatie

- *Phytophthora infestans*
 - Geschiedenis
 - Levenscyclus
 - Symptomen
- Geïntegreerde bestrijding
 - Reduceer primaire bronnen van inoculum
 - Resistente rassen
 - Gerichte inzet van fungiciden
 - Beslissingsondersteunende systemen (BOS)
- Conclusies



Phytophthora infestans Migratie 1

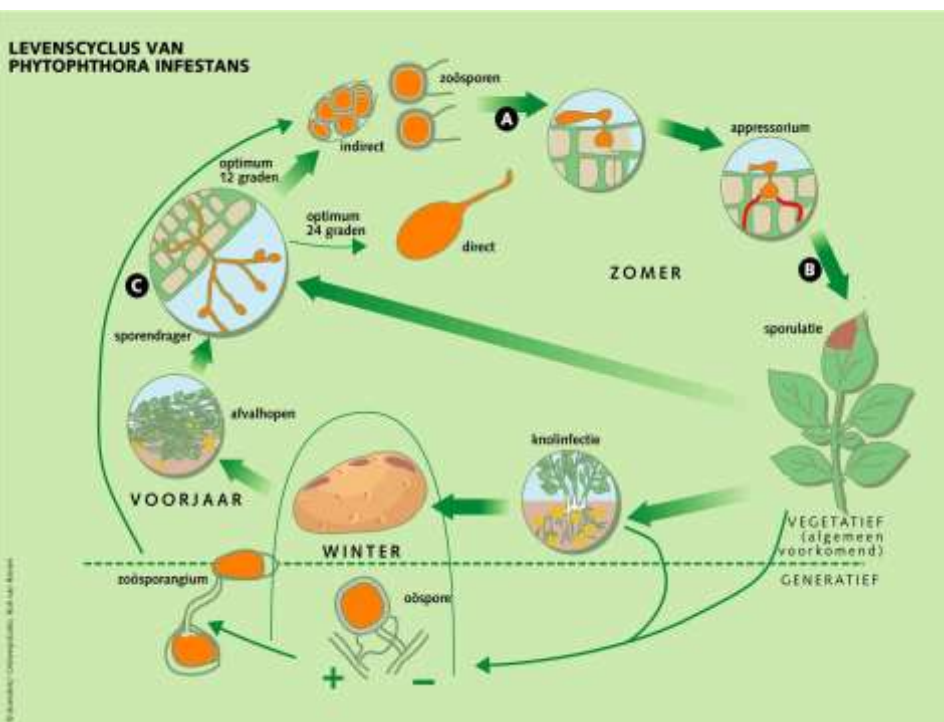


Irish Potato Famine 1845, 1846



Phytophthora infestans

- Wereldwijd 21 miljoen ha en € 10 miljard schade
- In Nederland 165.000 ha
 - omzet € 750 miljoen/jaar
- 12-15 bespuitingen/jaar
- Kosten per jaar
 - Fungiciden € 60 miljoen
 - Spuiten € 60 miljoen
 - Schade: € 30 miljoen
 - Totaal € 150 miljoen (=20% van omzet)



P. infestans: inoculumbronnen

- Kan overleven in knollen
 - Pootgoed
 - Opslagplanten
 - Afvalhopen
- Oösporen
- Alternatieve waardplanten
 - Bitterzoet
 - Nachtschaden
 - Tomaat



Reduceer primaire bronnen van inoculum

- Verordening PA
- Gecontroleerd door NAK Agro
- Afvalhopen: bedek met zwart plastic voor 15 april
- Opslag: bestrijden na 1 juli als > 2 planten/m² per 0,3 ha
- Excessieve aantasting bestrijden
- Waarschuwing: gele kaart
- Rode kaart: boete



P. infestans: automatische bestrijding opslag



■ Camera herkenning

- Real time
- 4 km/uur



Best Practice: gebruik resistente rassen

Using Cultivar Resistance to Reduce Inputs Against Late Blight

Summary

The late blight resistance of a cultivar offers significant potential in reducing fungicide inputs as part of an integrated control strategy. Such potential requires thorough understanding of the genetic and physiological mechanisms of late blight resistance and the ability to select cultivars with the appropriate level of resistance for the target environment. However, the use of resistant cultivars is not a simple task as it requires a deep understanding of the genetic and physiological mechanisms of late blight resistance and the ability to select cultivars with the appropriate level of resistance for the target environment. However, the use of resistant cultivars is not a simple task as it requires a deep understanding of the genetic and physiological mechanisms of late blight resistance and the ability to select cultivars with the appropriate level of resistance for the target environment.

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About ENDURE

ENDURE is the European network for the development of integrated strategies (ENDURE) to reduce the use of fungicides in late blight control. The network is a consortium of scientists and growers from across Europe, working together to develop and implement strategies to reduce the use of fungicides in late blight control. The network is a consortium of scientists and growers from across Europe, working together to develop and implement strategies to reduce the use of fungicides in late blight control.

Website and ENDURE information Centre:
www.endure-network.eu

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Using Cultivar Resistance to Reduce Inputs Against Late Blight

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endure
 developing crop protection

EUROPEAN UNION



Veredeling

- Conventionele veredeling door kruisen en selectie
- Genetically Modified Organisms (GMO)
 - Transgenese: genen inbrengen vanuit andere organismen
 - Cisgenese: genen gebruiken van zelfde soort (DuRPh)

Brede maatschappelijke discussie over effecten van GMO op voedselveiligheid en milieu

- In NL ontwikkelen veredelaars nieuwe rassen zonder GMO-technieken te gebruiken



Duurzame resistentie tegen Phytophthora



Aveka Blb2

Aveka

Best Practice: gerichte inzet van fungiciden

Fungicides for Tackling Late Blight

Summary

Phytophthora infestans is the most serious and widespread cause of late blight in European potato. Fungicides are essential to control late blight in potato. Fungicides are essential to control late blight in potato. Fungicides are essential to control late blight in potato.

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About ENDURE

ENDURE is the European Network for the Durable Exploitation of Crop Protection Strategies. ENDURE is a network of European potato breeders and plant pathologists working together to develop and implement an integrated approach to potato late blight control. ENDURE is a multi-disciplinary network of scientists and growers working together to develop and implement an integrated approach to potato late blight control.

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Fungicides for Tackling Late Blight

Order Address: MRA, France; Bacti BioScience and Bacti BioScience, WUR, Netherlands; Cerec, Canada; BCTA, France; Cerec, Canada; Bacti BioScience and Bacti BioScience, WUR, Netherlands; Bacti BioScience, WUR, Netherlands; Bacti BioScience, WUR, Netherlands.

endure
Durable potato production

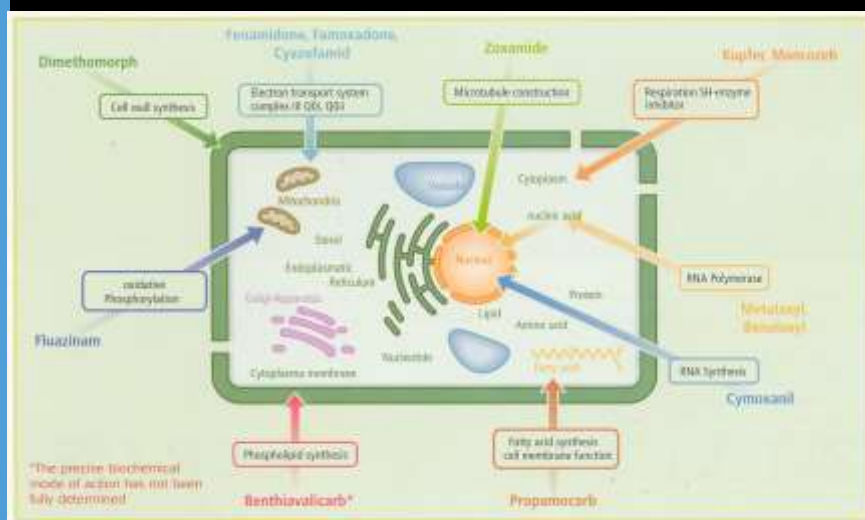
Food Quality and Safety

Gerichte inzet van fungiciden

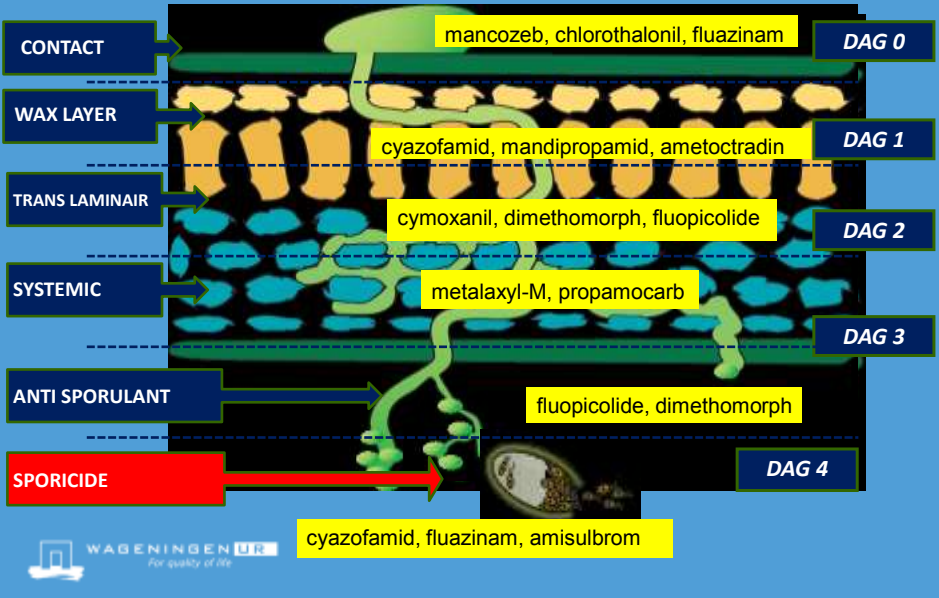
- Fungicide eigenschappen
- Werkingswijze
 - preventief, curatief
 - Stop/eradicatief
 - regenvastheid
 - Transport in plant
- Effectiviteit
 - blad, nieuwe groei
 - stengel, knol
 - oosporen



Werking van *P. infestans* fungiciden

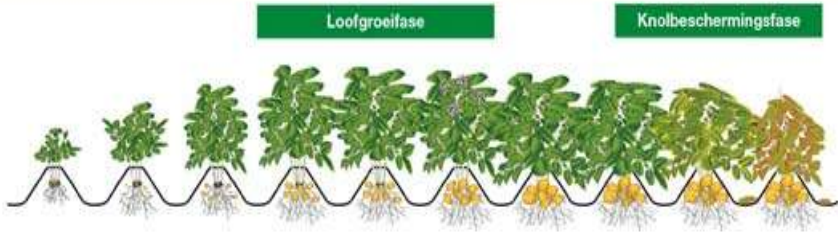


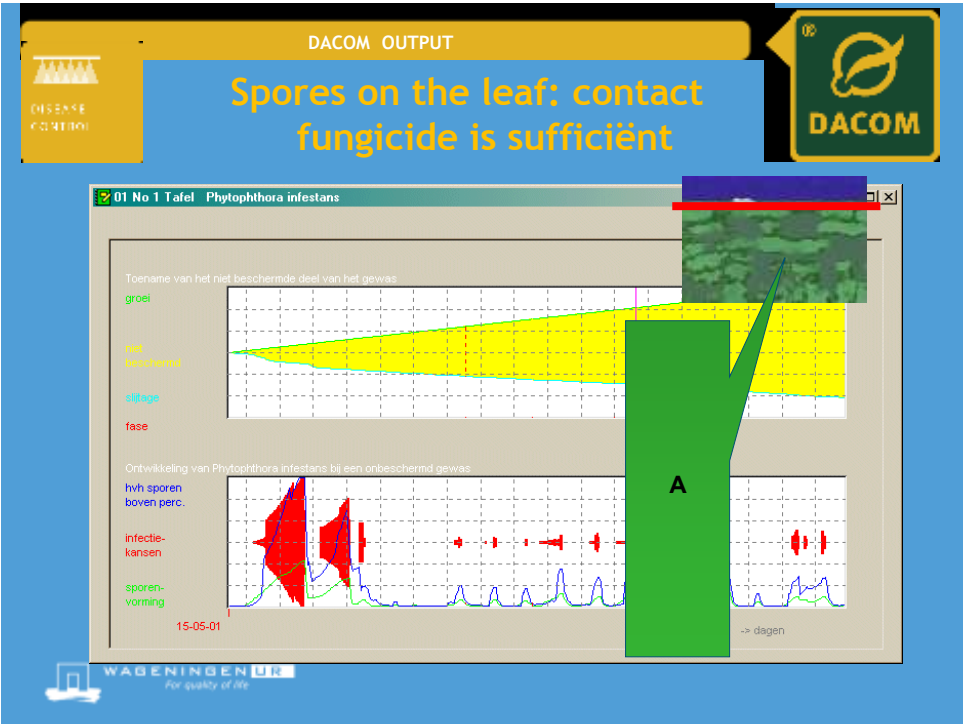
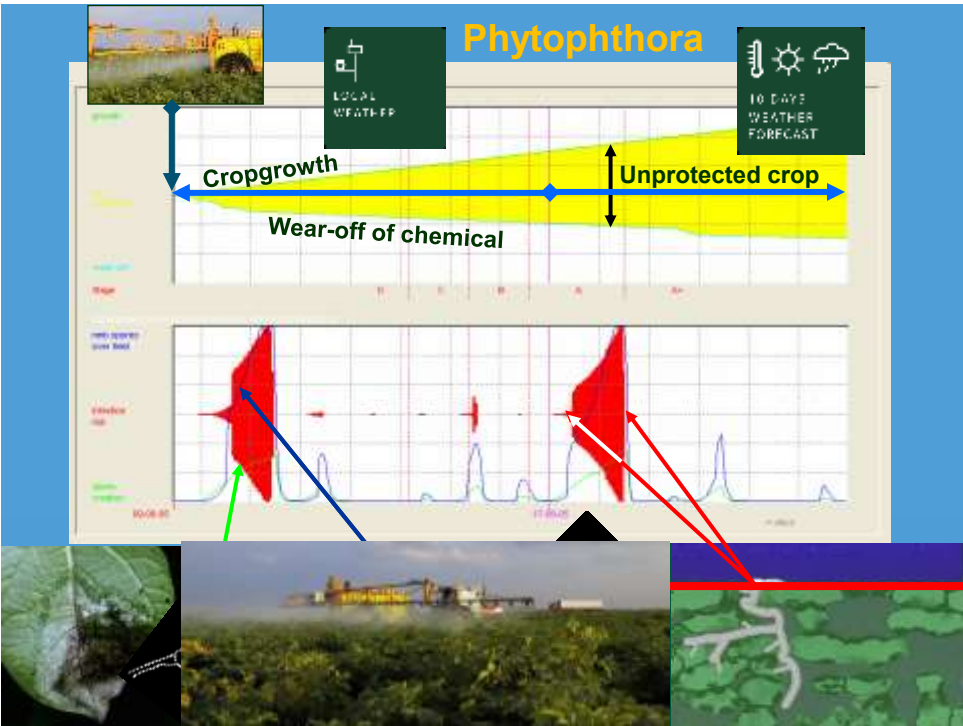
Aardappel fungiciden

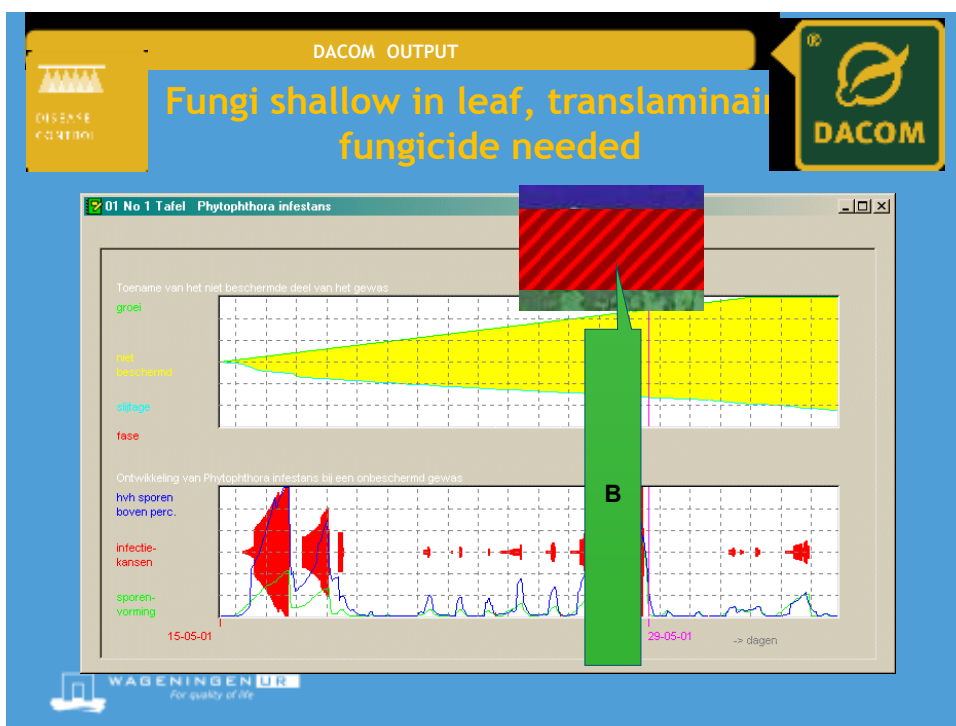


Voorbeelden spuitschema's

Emergence		Fast growth	Bulking	Tuber protection
1 of 2	2 á 3			
1 of 2	2 á 3	3 sprays	4 sprays	3 sprays
Curzate M		Curzate M	Shirlan	Shirlan
Shirlan		Shirlan	Shirlan	Shirlan
Revus		Revus	Shirlan	Shirlan
Revus	Fubol Gold	Revus	Shirlan	Shirlan
Revus		Revus	Shirlan	Shirlan
Valbon		Valbon	Shirlan	Shirlan
Tattoo C		Tattoo C	Shirlan	Shirlan
Acrobat		Acrobat	Shirlan	Shirlan
Curzate M		Curzate M	Shirlan	Shirlan







Conclusies

- *Phytophthora infestans* is belangrijkste loofziekte in pootaardappel
- Geïntegreerde aanpak
 - Reduceer primaire bronnen
 - Teel resistente rassen
 - Gebruik fungiciden zo efficiënt mogelijk
 - Ondersteuning van BeslissingsOndersteunende Systemen

Bedankt voor uw aandacht

