

Aardappelwratziekte: je ziet
het niet, maar 't is er wel !

GCM van Leeuwen

Nationaal Referentie Centrum (NRC)
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Inhoud

1. Organisatie

taken Nationaal Referentie Centrum (NRC) van de NVWA
(voorheen afdeling Diagnostiek van de Plantenziektenkundige
Dienst)



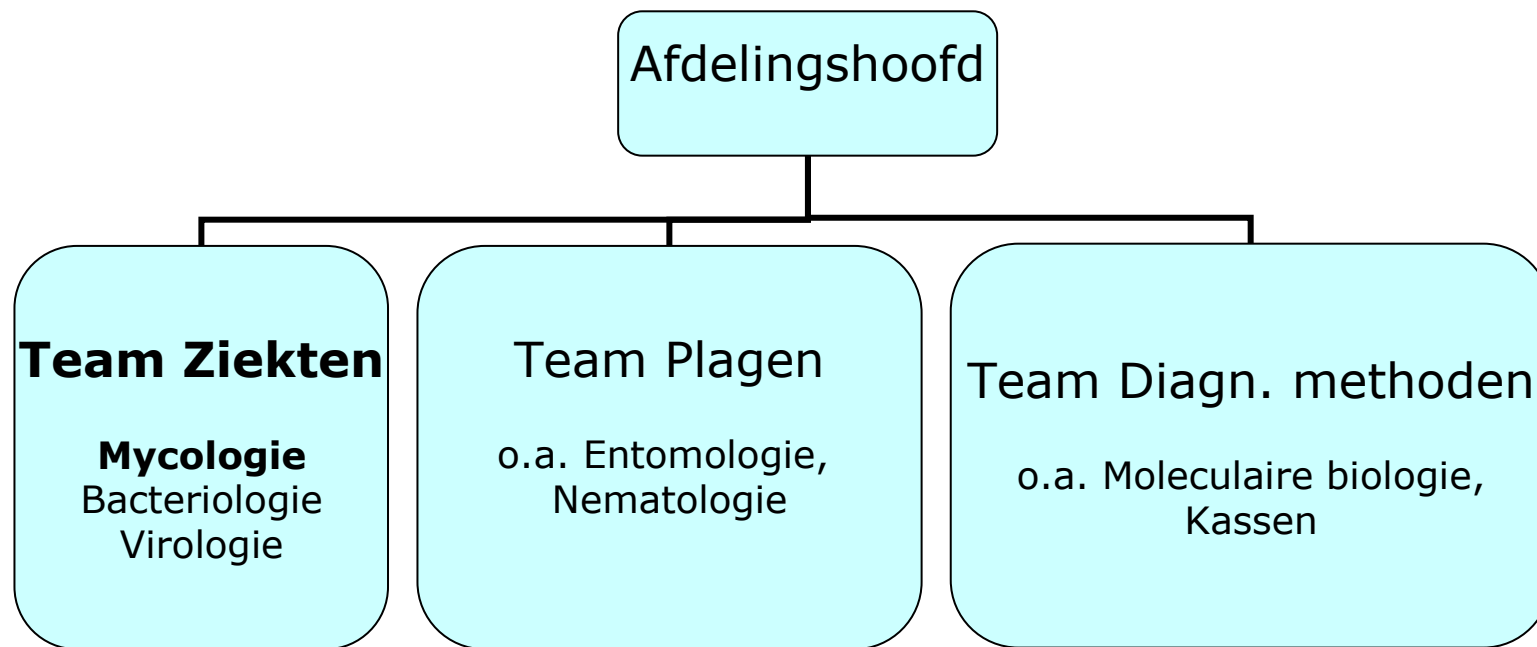
Inhoud

2. Krent uit de pap... :

- *Synchytrium endobioticum*, veroorzaker van aardappelwratziekte
- voorkomen in Nederland
- ontwikkelingen van de laatste jaren (diagnostiek, detectie, nieuwe vondsten, internationaal)



Nationaal Referentiecentrum (NRC)





NRC, vakgroep Mycologie

Werkveld

- o.a. bedrijven van diagnostiek (plantendokters)
- sterk in : Citrus black spot, *Phytophthora ramorum*, aardappelwratziekte





In deze presentatie centraal

- *Synchytrium endobioticum*, veroorzaker van aardappelwratziekte
- quarantaine-organisme, IAAI organisme (EU-Fytorichtlijn)
- primaire beheersmaatregel : teelt van resistente rassen (lijsten per fysio)



Bestaan van fysio's (pathotypen)

- In Nederland zijn tot nu toe vier fysio's vastgesteld : fysio 1(D1), 2(G1), 6(O1), en 18(T1)
- Identificatie op basis van bio-toets

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Mini-review

History of potato wart disease in Europe – a proposal for harmonisation in defining pathotypes

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Abstract

Potato wart disease, caused by the chytridiomycete *Synchytrium endobioticum*, was first introduced into Europe in the late 19th century. It spread quickly, and today is reported in 15 European countries. Initially, only one pathotype was found, and the disease was efficiently controlled using resistant cultivars. In 1941, however, formerly resistant cultivars showed wart formation in the field simultaneously in Germany and South Bohemia (Czech Republic), indicating the occurrence of new pathotypes. New pathotypes have since been reported from Germany, The Netherlands, Czech Republic, Ukraine and Canada. Today the pathogen is present in The Netherlands (only in fields for ware and starch potatoes) but restricted to two demarcated areas and subject to official control. Outside these areas, the pathogen is absent. For pathotyping, different countries have used different sets of differential cultivars, and the usual system of numerical coding of pathotypes has not been consistently followed. In this review we propose a new standardised code to be used for the 43 pathotypes currently known and described in Europe. The code is a combination of a numerical and letter code, combining the two terminologies used by former West and East Germany, respectively. We also plead for harmonisation in the choice of differential cultivars used for pathotype identification. The set of differentials described in the international standard for diagnosis of *S. endobioticum* issued by the European and Mediterranean Plant Protection Organisation (EPPO), should serve as a basis. Through close collaboration of European countries dealing with new pathotypes of potato wart disease, a final agreed upon set of differentials, combined with a set of reference isolates, should ultimately be established, allowing a clear distinction between the most important pathotypes occurring in Europe.

Introduction

The chytridiomycete *Synchytrium endobioticum* is the causal agent of potato wart disease. The

(pest already present in the EU; entry or spread within the EU is prohibited) in the EU Directive 2000/29/EC (European Union, 2000). *Synchytrium endobioticum* stimulates its host to produce



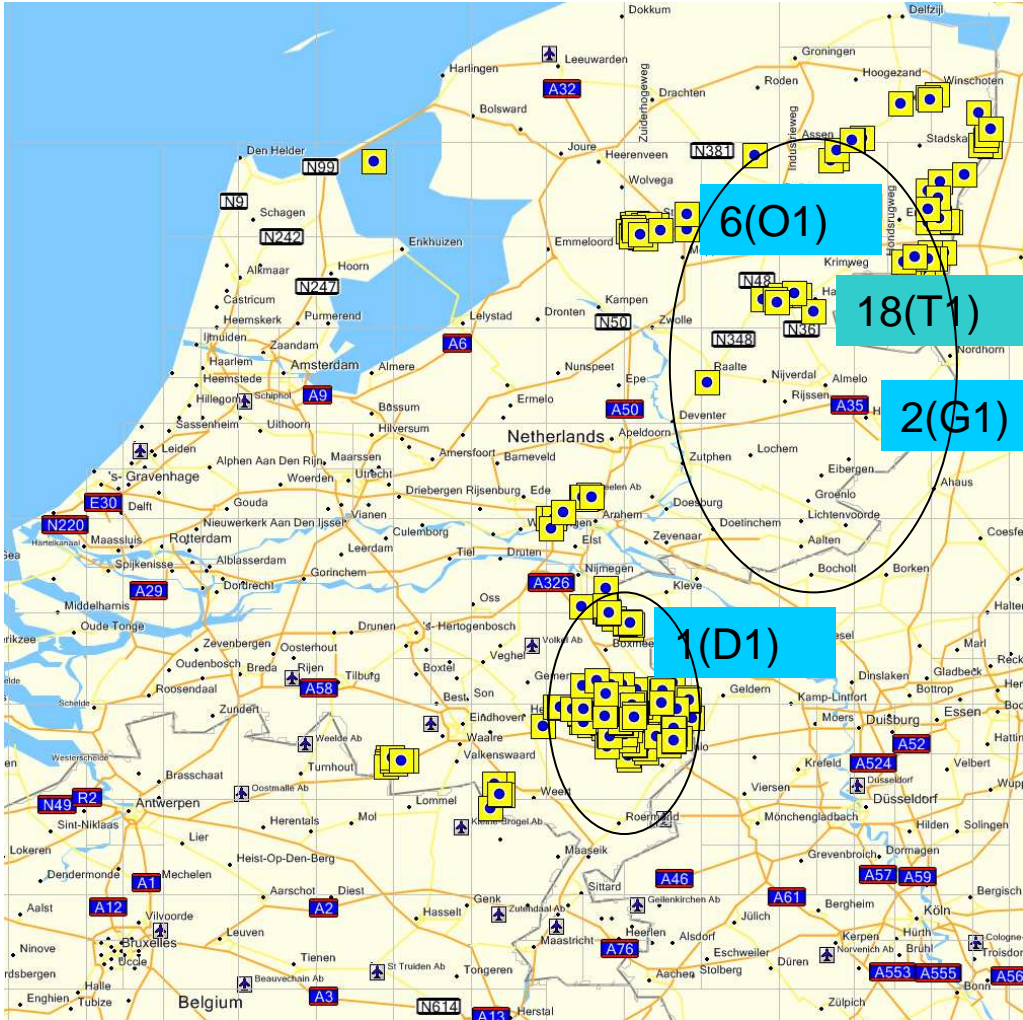
Bestaan van fysio's (pathotypen)

Cultivar	1(D1)	2(G1)	6(O1)	8(F1)	18(T1)
Deodara	S	S	S	S	S
Tomensa	S	S	S	S	S
Morene	S	S	S	S	S
Producent	R	S	S	S	S
Combi	R	S	S	S	S
Saphir	R	S	R	R	R
Delcora	R	R	R	S	S
Miriam	R	R	R	R	S
Karolin	R	R	R	R	R
Ulme	R	R	R	R	R
Belita	R	R	R	R	–

bron : EPPO Diagnostic
Protocol, 2004



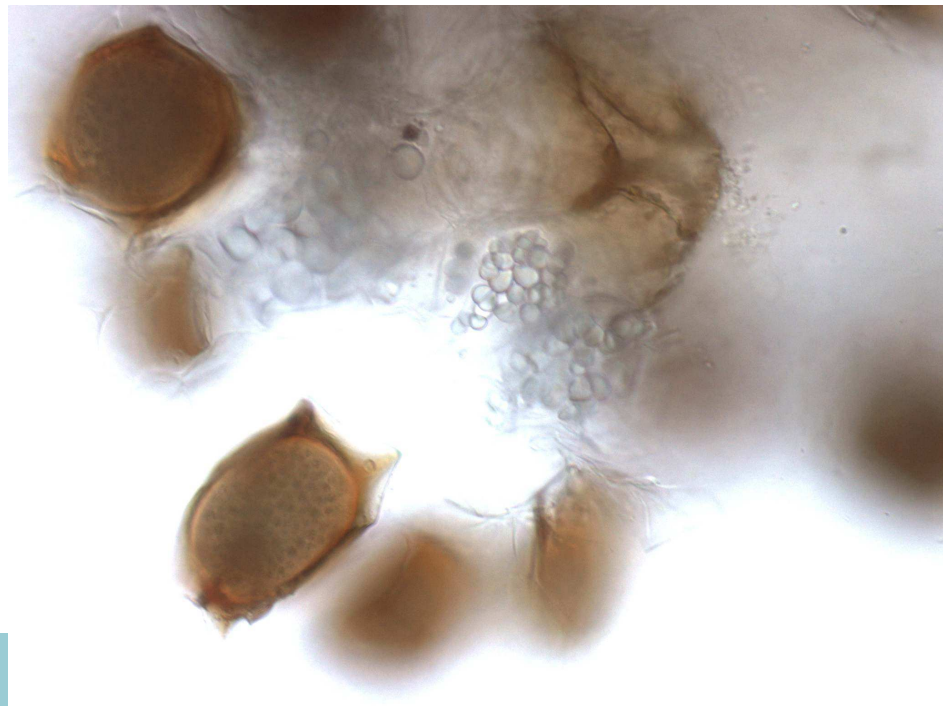
Verspreiding in Nederland





Ondergronds bestaan ...

- bodempathogeen (overleving door wintersporangia)
- leidt een verborgen bestaan ... 'je ziet het niet, maar 't is er wel'
- aanwezigheid komt aan het licht bij teelt van een vatbaar ras



wintersporangia



... soms erboven





Ontwikkelingen v/d laatste jaren

- Moleculaire test ontwikkeld om fysio 1(D1) te onderscheiden van andere/hogere fysio's



Ontwikkelingen v/d laatste jaren

- Test ontwikkeld door PRI-Wageningen, gevalideerd door het NRC (binnen internationaal Euphresco-project)





Ontwikkelingen v/d laatste jaren

- Nieuwe toets geeft snel uitsluitsel bij nieuwe vondsten : is het originele fysio aanwezig- 1(D1), ... of hebben we te maken met een ander fysio ?





Tot slot

- Fysio-bepaling : vooralsnog blijft de biotoets zeer belangrijk
- Moleculair moeilijk, obligate parasiet. Hoe krijg je zuiver DNA in handen ?

