

# The EU-monitoring project

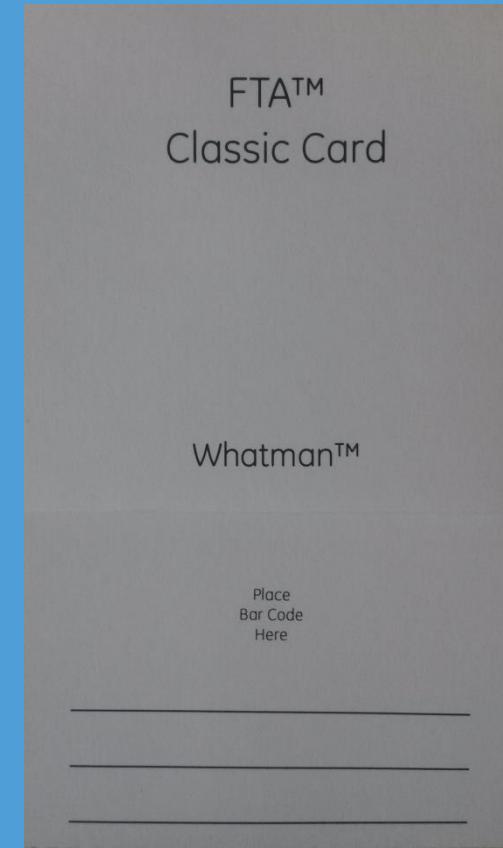
A view behind the scenes

Marieke Förch, David Cooke, Jens G. Hansen, Poul Lassen  
& Geert Kessel



# The EU-monitoring project

- 2 years
- Collaboration between:
  - The James Hutton Institute
  - Aarhus University
  - Wageningen UR
  - 27 Participants

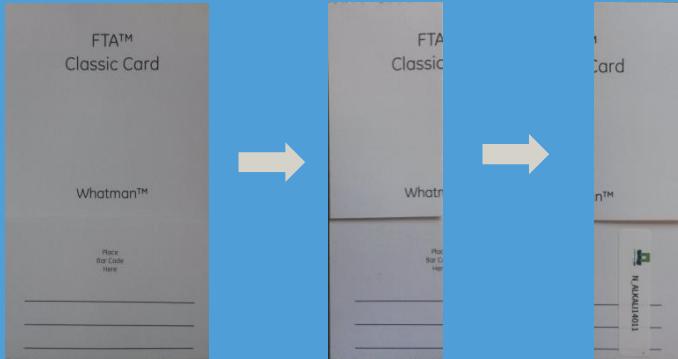


# The EU-monitoring project

- 2013
  - 1590 FTA cards sent out
  - 585 FTA cards returned
  - ~ 750 samples analysed incl. UK
- 2014
  - 1551 FTA cards sent out
  - 790 FTA cards returned
  - ~ 1450 samples analysed incl. UK

# Sending out FTA-cards

## 1. Cut and label many, many cards



## 3. Many Agreements

**AGREEMENT**

The undersigned,

1. the foundation **Stichting Dienst Landbouwkundig Onderzoek**, research institute Praktijkonderzoek Plant & Omgeving/Plant Research International, established in Wageningen, whose registered office is at Dreevendaalsesteeg 1 (6708 PB) Wageningen, The Netherlands, hereinafter also referred to as: "DLO", lawfully represented by its Managing Director, *dr. ir. J.E. van den Ende*;

Contact person: Dr Geert J.T. Kessel  
Telephone number: +31 (0)317 480814  
E-mail address: Geert.Kessel@WUR.NL  
Business Unit: Biolnteractions and Plant Health

For the purpose of this agreement also acting on behalf of

1a. **The James Hutton Institute (Hutton)**, whose business address is at (Invergowrie, Dundee, DD2 5DA, UK, hereinafter also referred to as 'Participant', lawfully represented by Beth Corcoran, Director of Finance and Company Secretary;

Contact person: David Cooke  
Telephone number: +44 1382 568831  
E-mail address: [david.cooke@hutton.ac.uk](mailto:david.cooke@hutton.ac.uk)

and

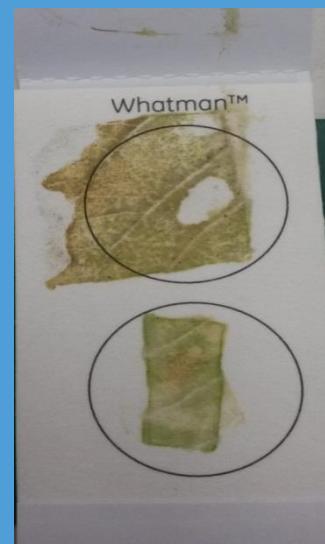
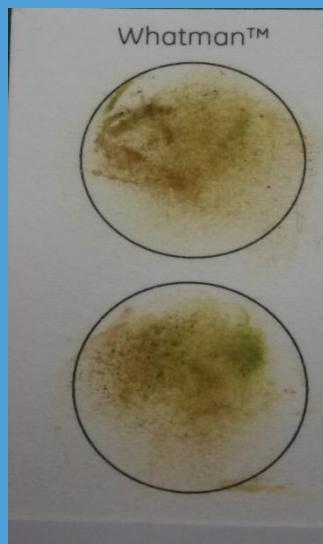
1b **Aarhus University (AU)**, Department of Agroecology, whose business address is at (Nordre Ringgade 1, DK-8000 Aarhus C, Denmark), hereinafter also referred to as 'Participant', lawfully represented by Head of Department Erik Steen Kristensen

Contact person: Dr Jens Gronbech Hansen

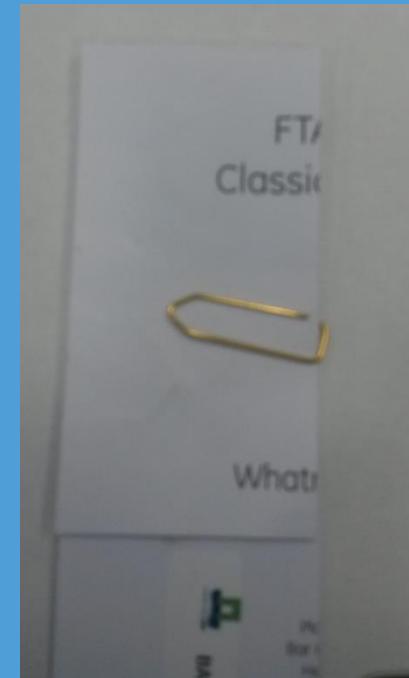
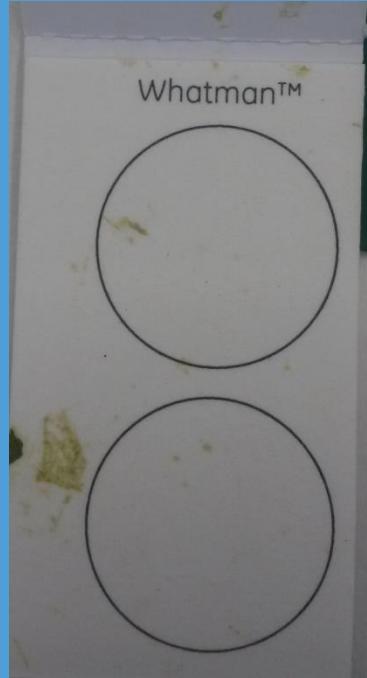
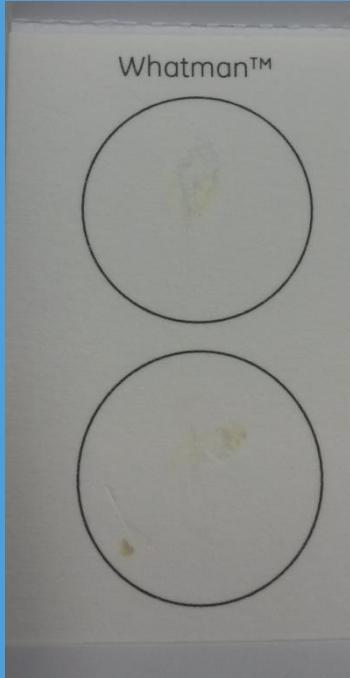
## 2. Send to Participants



# Sample processing



# Challenging samples



# Processing the FTA-cards

- After sampling the FTA-cards are returned to us.
- Cards and data forms are checked
- Some problems:
  - cards and sample data do not match
  - Cards sent in without the preferred excel file
  - Handwriting is “difficult to read”
  - The use of different GPS systems
  - Missing data
  - Cards sent in very late (December, January, ..)

# GPS

- Different formats:

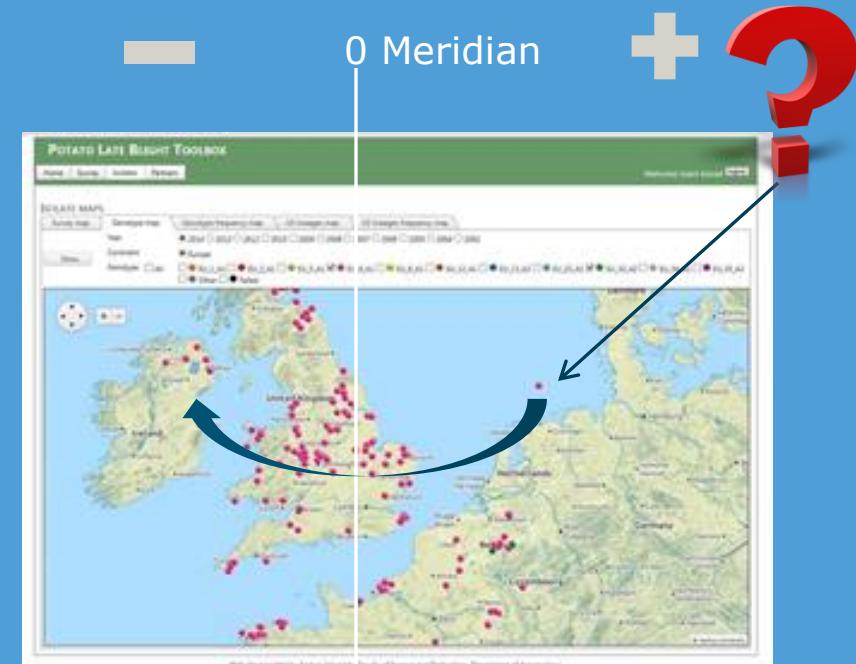
- N 51.85242° E004.50777°
- N51°51.145' E 004°30.466'
- N 51°51'08.7" E004°30'28.0"

same place

- Swiss grid

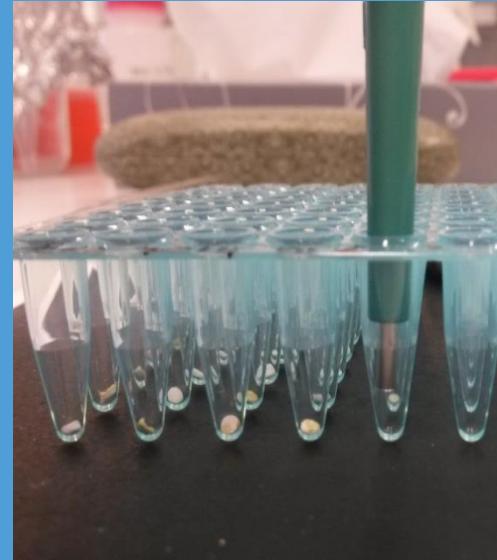
- Longitude notation:

- 53.85242N 6.508W
- 53.85242° - 6.508



# Processing the cards

- All FTA cards are divided between the JHI and PRI.
- We try to divided the cards from 1 participants equally between both institutes.



# Procedure (from cards to peaks)

- DNA extraction (FTA procedure)
- PCR reaction with the 12 multiplex SSR primers
- Dilution PCR product 500x
- Gene scan on ABI 3700 sequencer
- FSA files analysed in Genemapper™

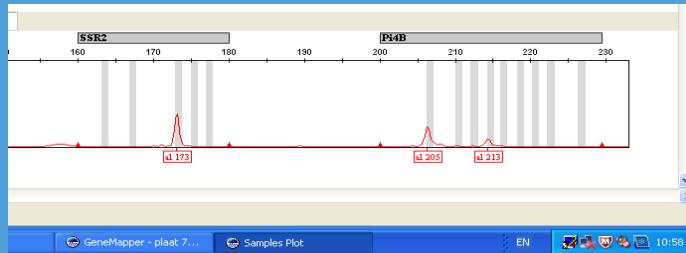


# Results

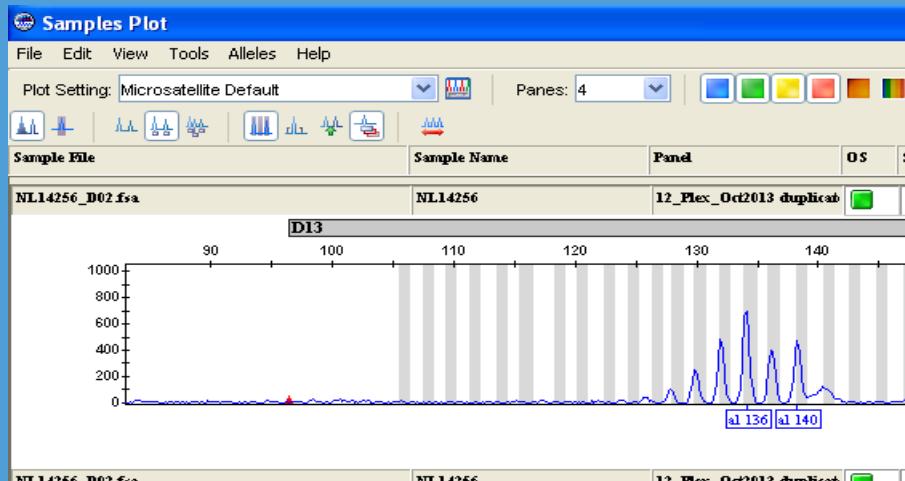


All results (peaks) are checked manually and adjusted when necessary.

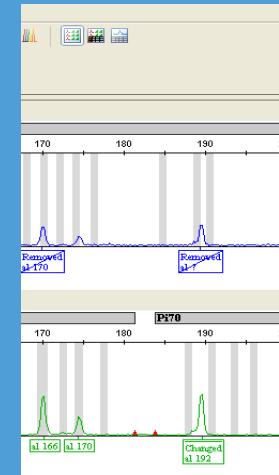
# Examples of “peaks” & problems



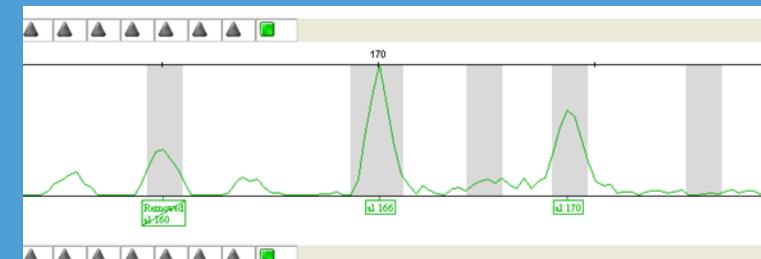
Homozygote and Heterozygote example



Stutters and peaks



Overload



FTA artefact

# Results

# Participant Result file



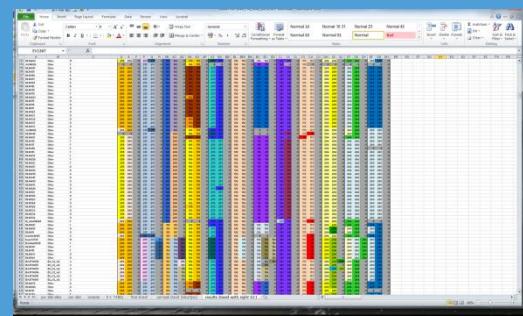
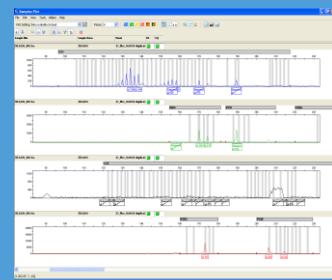
# PRI



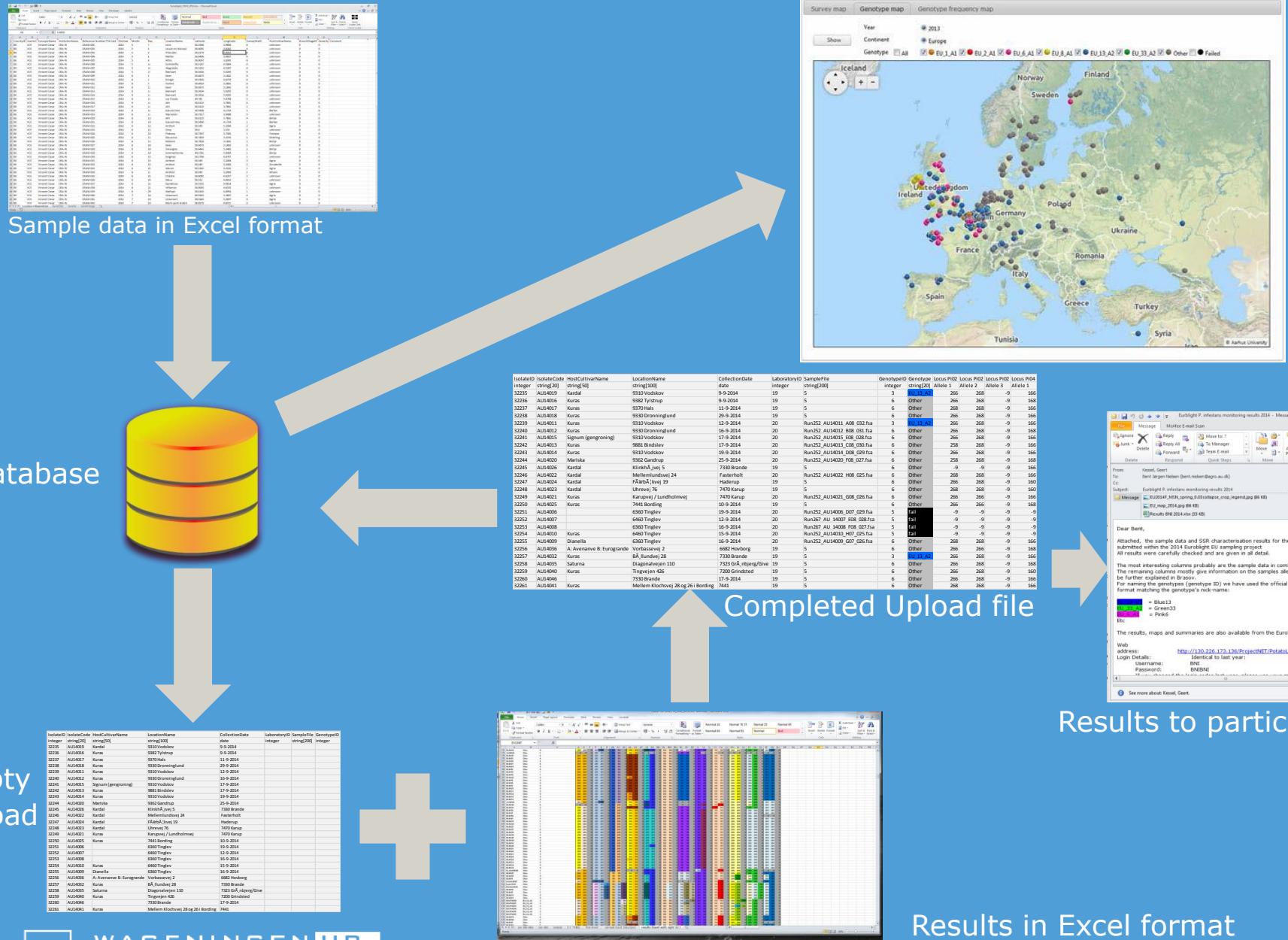
Hutton



PRI



**WAGENINGEN UR**  
For quality of life



Thank you for  
your attention

