



# Variation of *P. infestans* within and between fields

Lina Grönberg

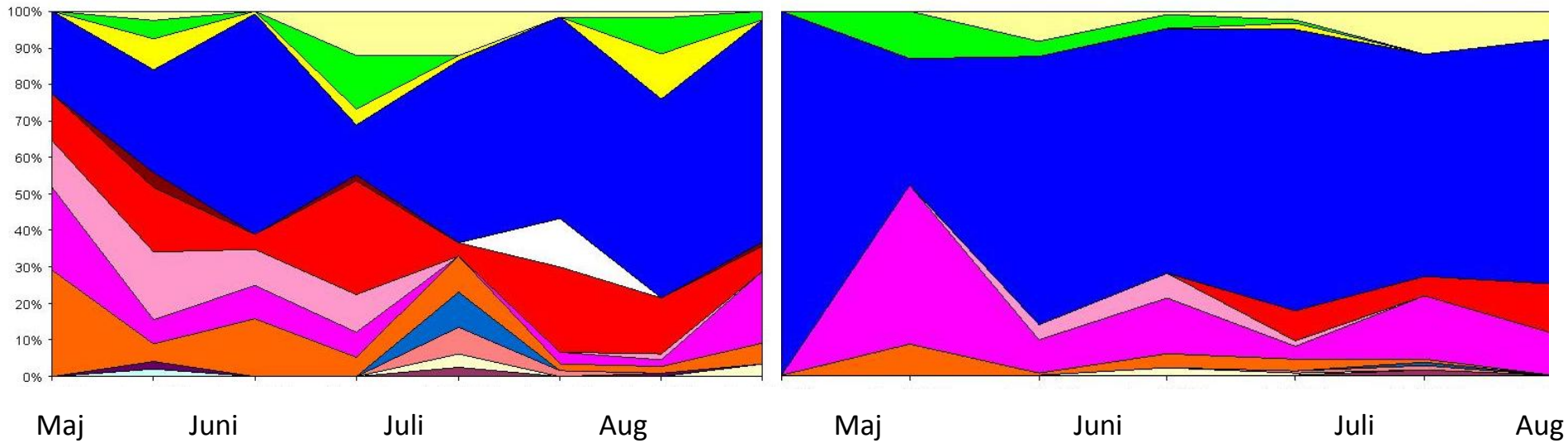


# P. INFESTANS POPULATIONS

UK

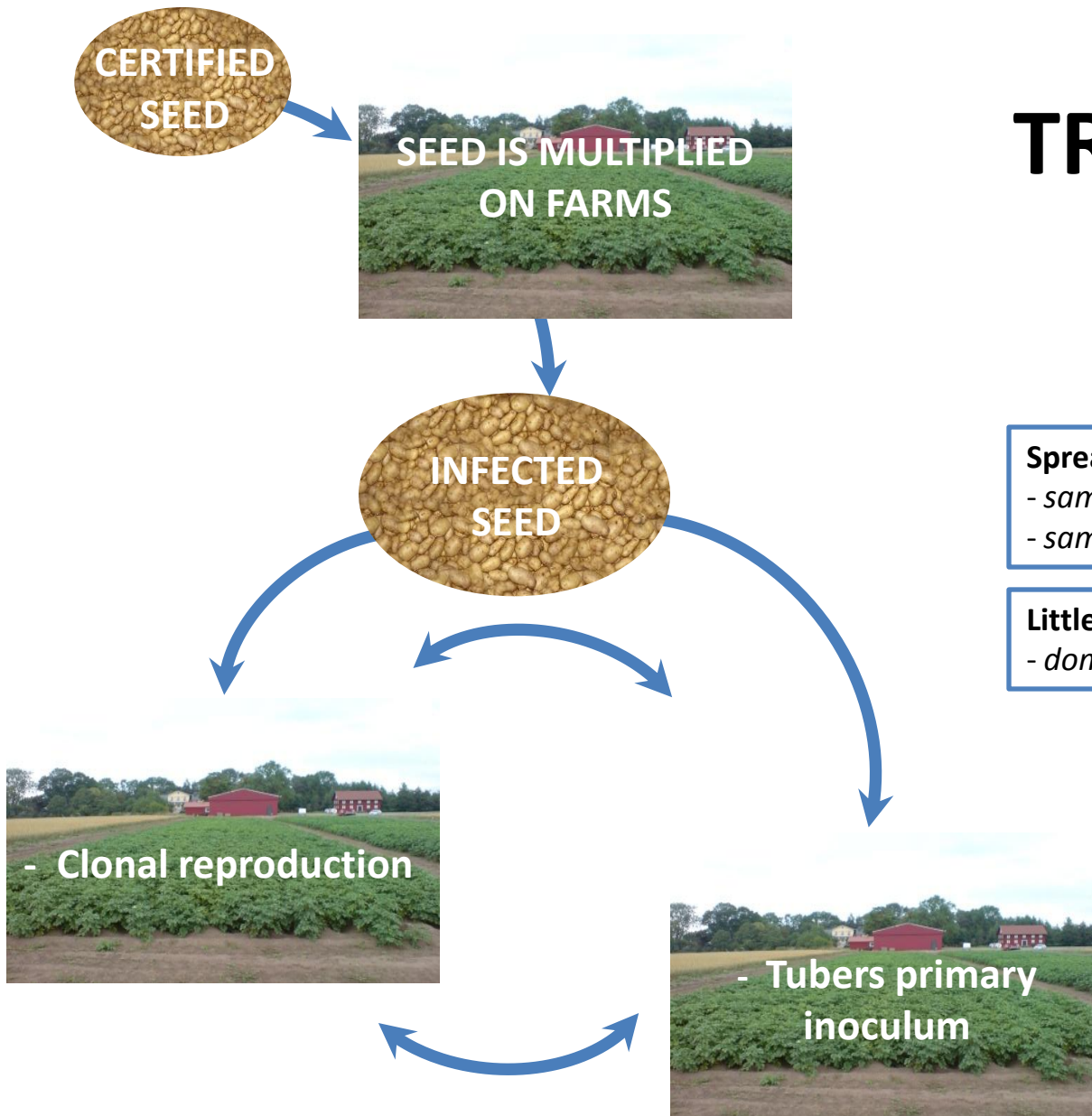
2006

2007



Different colours represents different genotypes

# TRADITIONAL!



## Spread between fields:

- *same genotypes found in several fields*
- *same genotypes found from year to year*

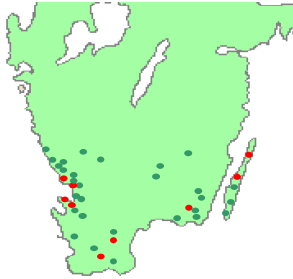
## Little differentiation between fields:

- *dominating clonal linages*

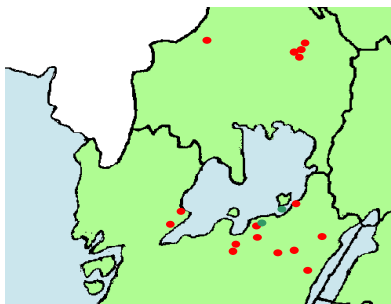
# OOSPORE FORMATION IN FIELDS

## Sweden

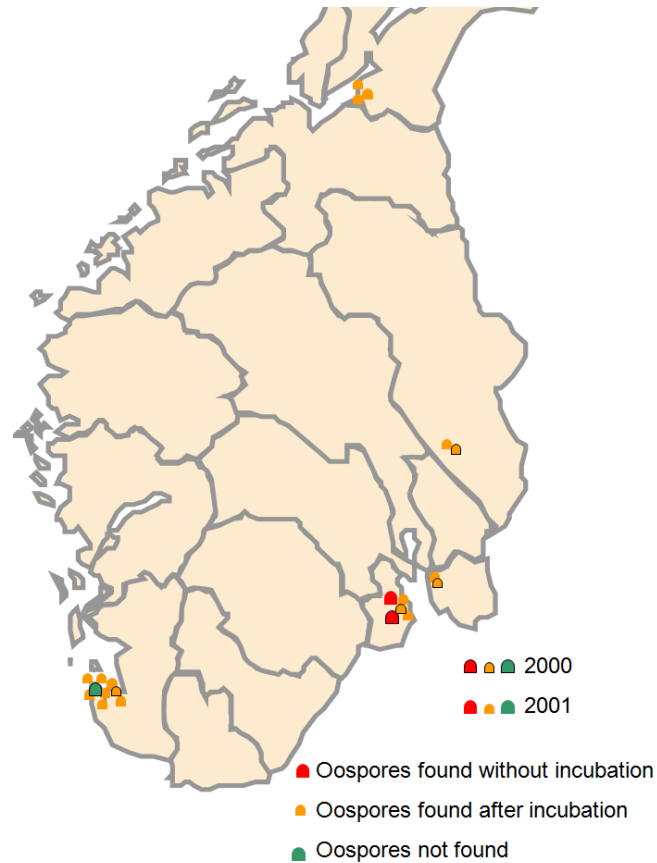
10 of 32 fields 2001



16 of 18 fields 2002

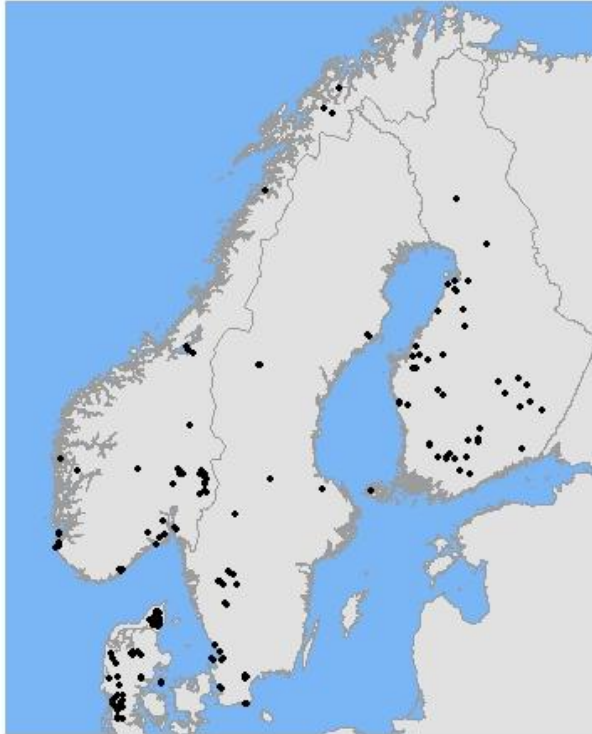


## Norway

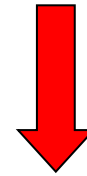


# P. INFESTANS POPULATIONS

Nordic countries



191 Nordic isolates genotyped with SSR



169 genotypes!

Norphyt 2003

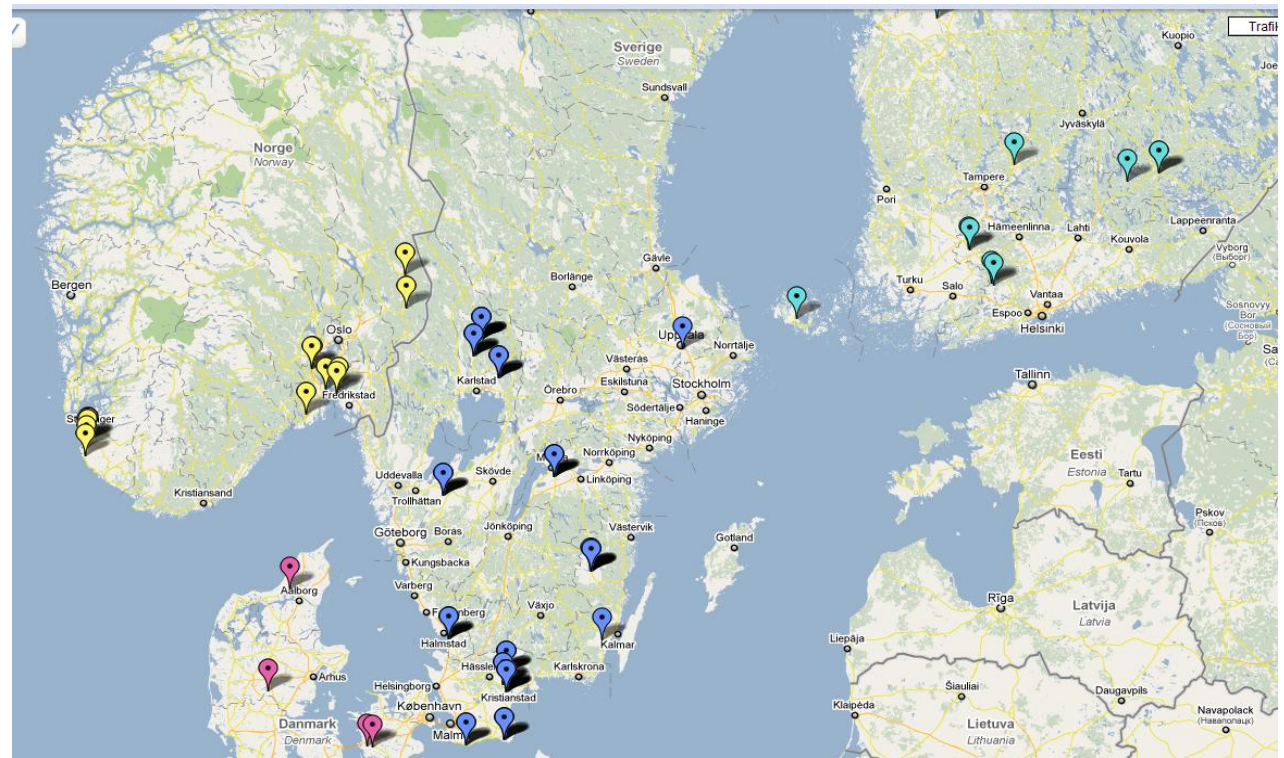
# NEW NORDIC POPULATION STUDY

A stratified sampling method was used:

- country
- field
- disease foci

- Sweden -16 fields
- Denmark -5 fields
- Finland -9 fields
- Norway - 12 fields

= 850 samples



# METHODS



- Dried leaflets
- CTAB-based protocol
- SSRs: 4B, G11, D13, Pi63, Pi16, Pi70, Pi04







# RESULTS

- Clones exists but not dominating
- Index of association
  - no association in most fields
- Recombination in most fields

	%	Stat	Val.	Prob.
Among countries	1%	Frt	0,01	0,01
Among fields/countries	12%	Fsr	0,117	0,01
Within fields	87%	Fst	0,126	0,01



# NEW CONCEPT?

**No or little dispersal between fields:**  
- *most genotypes found only once*

**Low differentiation between fields:**  
- *but no dominating lineages*

**Importance of inoculum sources:**  
- *seed*  
- *oospores* ?

# CONCLUSIONS

- Sexual reproduction of *P. infestans* does occur frequently in the Nordic countries
- No clonal lineage dominates
- Limited dispersal between fields

# OTHER PARTICIPANTS IN THE PROJECT

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