

A blue-tinted banner image at the top of the slide showing a building with a dome and a landscape in the background.

European Powdery Scab

Environment Factors Trial

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Setup

- France, Netherland, Scotland (SAC, SCRI), Switzerland (Wal, Laf)
- 2008: 6 locations (F, NL, 2 Scot, 2 CH)
- 2009: 6 locations (F, NL, 2 Scot, 2 CH)
- 2010: 5 locations (F, NL, 2 Scot, CH)
- 2-5 cultivars
- Tuber score: before harvest (at harvest)
- Root score: before harvest

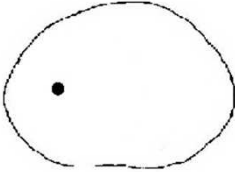
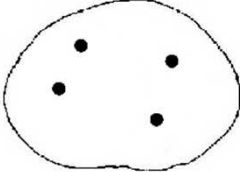
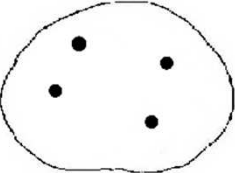
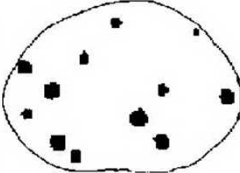
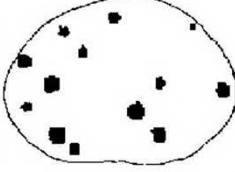
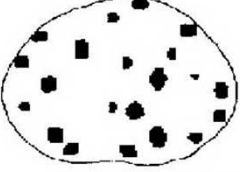
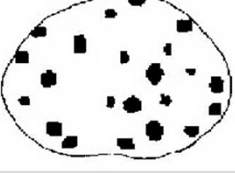
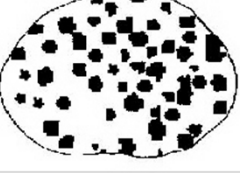
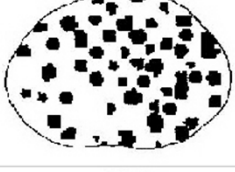

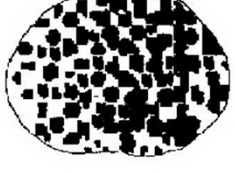

cultivars

La Fretaz	Agria, Estima, Gladiator, Kennebec, Markies (16 reps, roots and tubers)
Wallestalden	Agria, Nicola (16 reps, roots and tubers)
France	Kennebec, Nicola (16 reps, tubers)
Scotland SCRI	Agria, Nicola
Scotland SAC	Estima, Nicola

Tuber scoring

2 month after harvest

Powdery Scab Scoring Table

	(1%) 1 1P. - 2%	
	(3.6%) 2 2.1 - 5%	
	(7.6%) 3 5.1 - 10%	
	(18%) 4 10.1 - 25%	
	(37.6%) 5 25.1 - 50%	
	(75%) 6 > 50%	

Tuber scoring

2 month after
harvest



Environmental data

- | | |
|---------------|--|
| La Fretaz | <ul style="list-style-type: none">- soil water potential- soil temperature- precipitation |
| Wallestalden | <ul style="list-style-type: none">- soil water potential- soil water content- soil temperature- precipitation |
| France | <ul style="list-style-type: none">- soil temperature- precipitation |
| Scotland SCRI | <ul style="list-style-type: none">- soil moisture deficiency (SMD)- soil temperature |
| Scotland SAC | <ul style="list-style-type: none">- soil moisture deficiency (SMD)- soil temperature |

Tuber scoring after harvest: Calculations

Incidence	x	Severity	=	Disease index
Gladiator 26.34		Gladiator 1.109		Gladiator 29.218
Santé 31.10		Santé 1.127		Santé 35.061
Saturna 97.67		Saturna 2.706		Saturna 264.341
Nicola 98.42		Ratte 2.968		Ratte 293.103
Ratte 98.75		Desirée 3.054		Nicola 304.752
Russet Burbank 99.38		Nicola 3.097		Desirée 305.357
Agria 100.00		Russet Burbank 3.469		Russet Burbank 344.790
Desirée 100.00		Kennebec 3.856		Kennebec 385.577
Estima 100.00		Estima 3.988		Estima 398.841
Kennebec 100.00		Agria 4.373		Agria 437.299

0 - 100%	0 - 6	0 - 600
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2010: UK

< TI

AVG SMD

14.6 mm

AVG temp

16.7

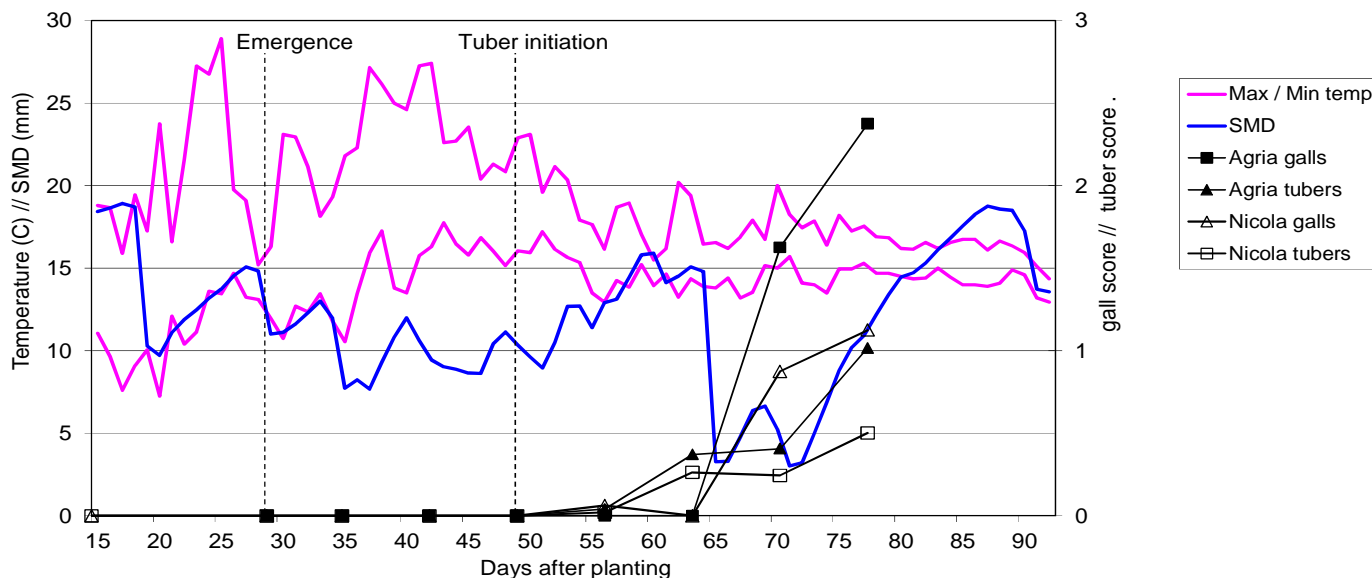
TI+28d

AVG SMD

9.9 mm

AVG temp

16.0



SCRI

< TI

AVG SMD

11.2 mm

AVG temp

14.9

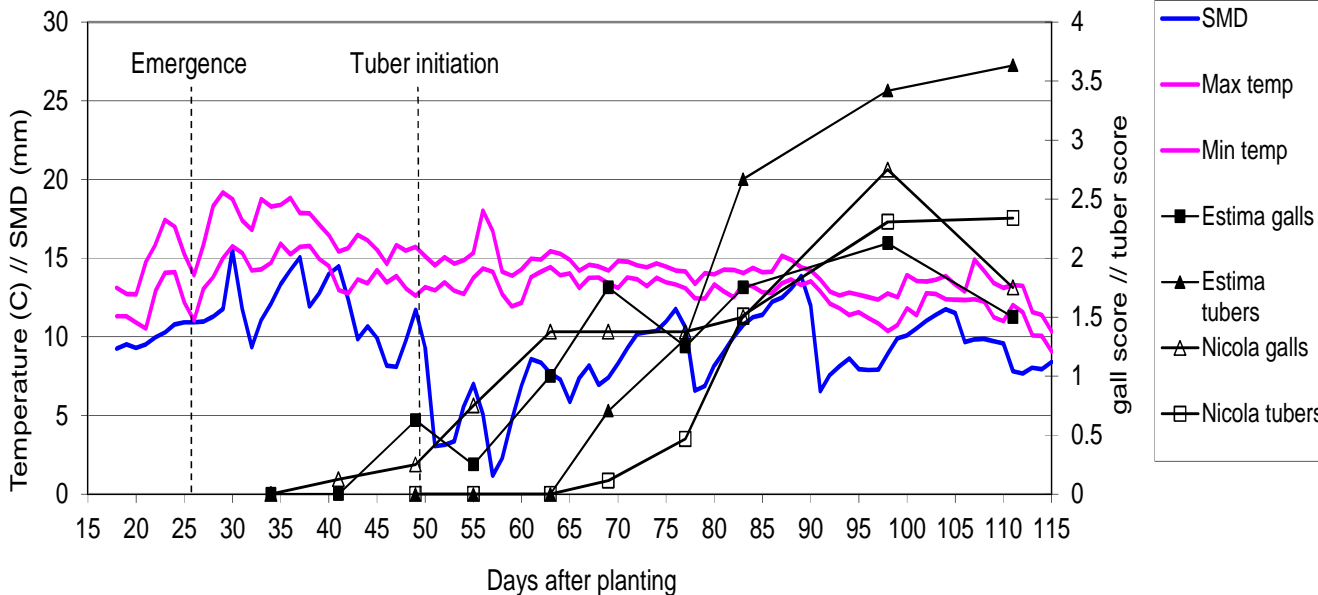
TI+28d

AVG SMD

7.1 mm

AVG temp

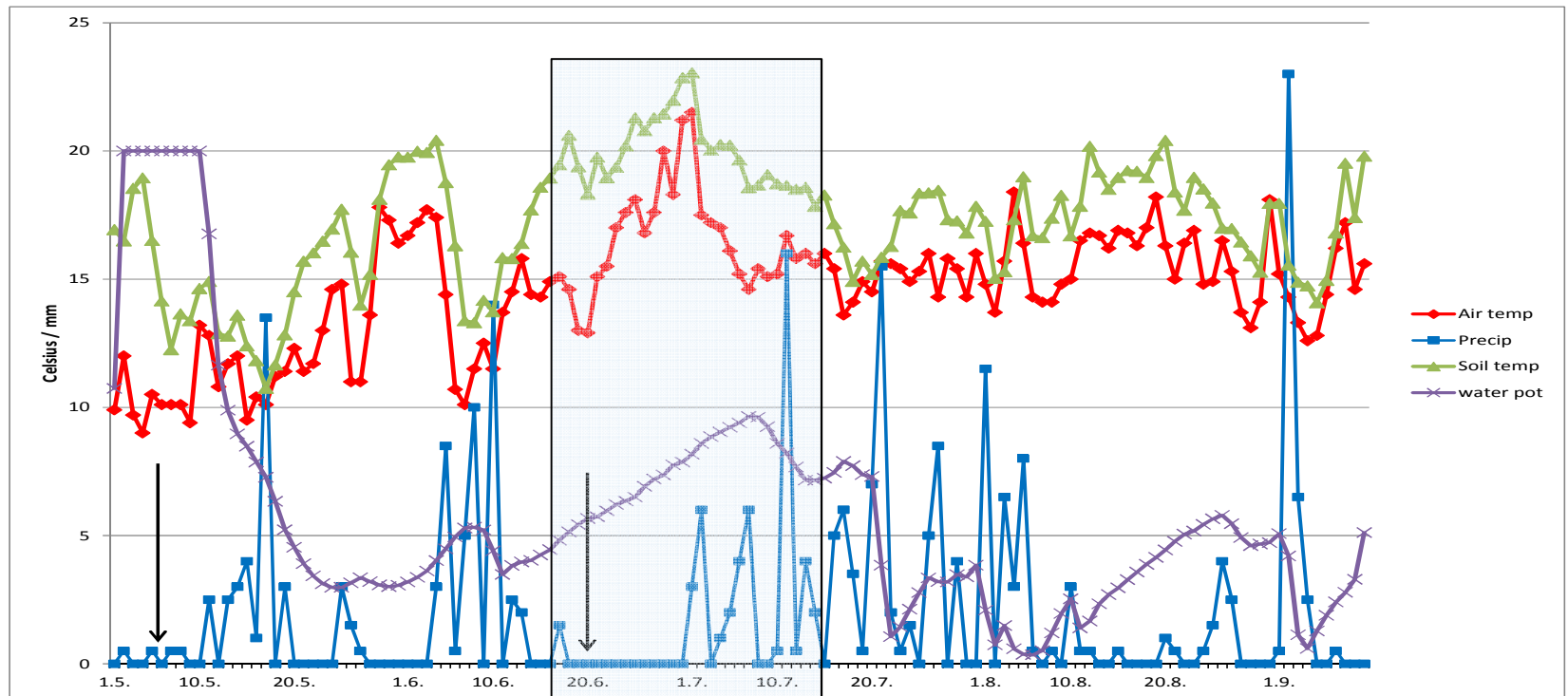
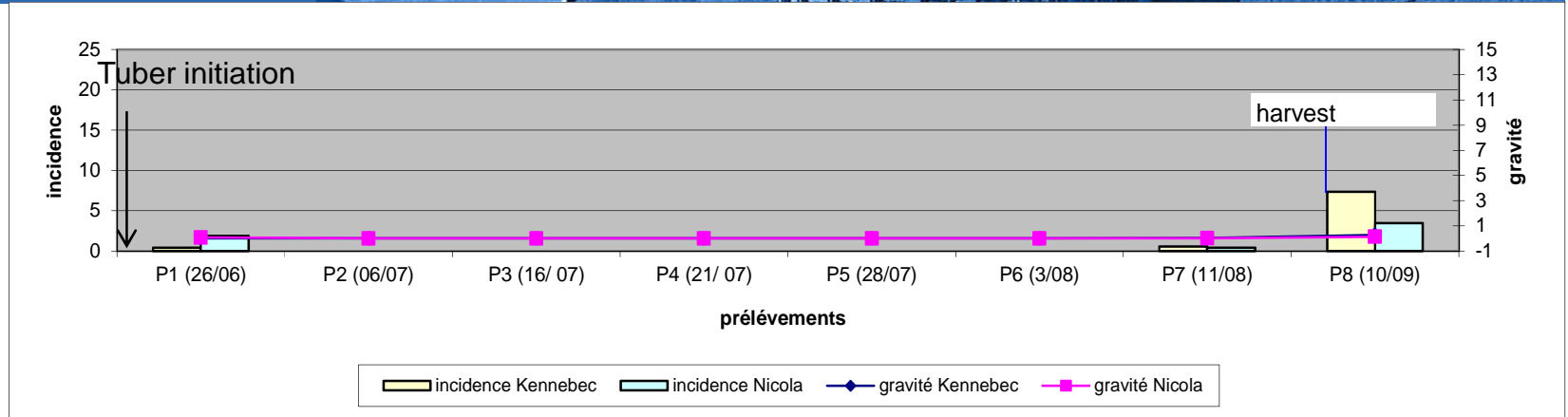
14.1



SAC

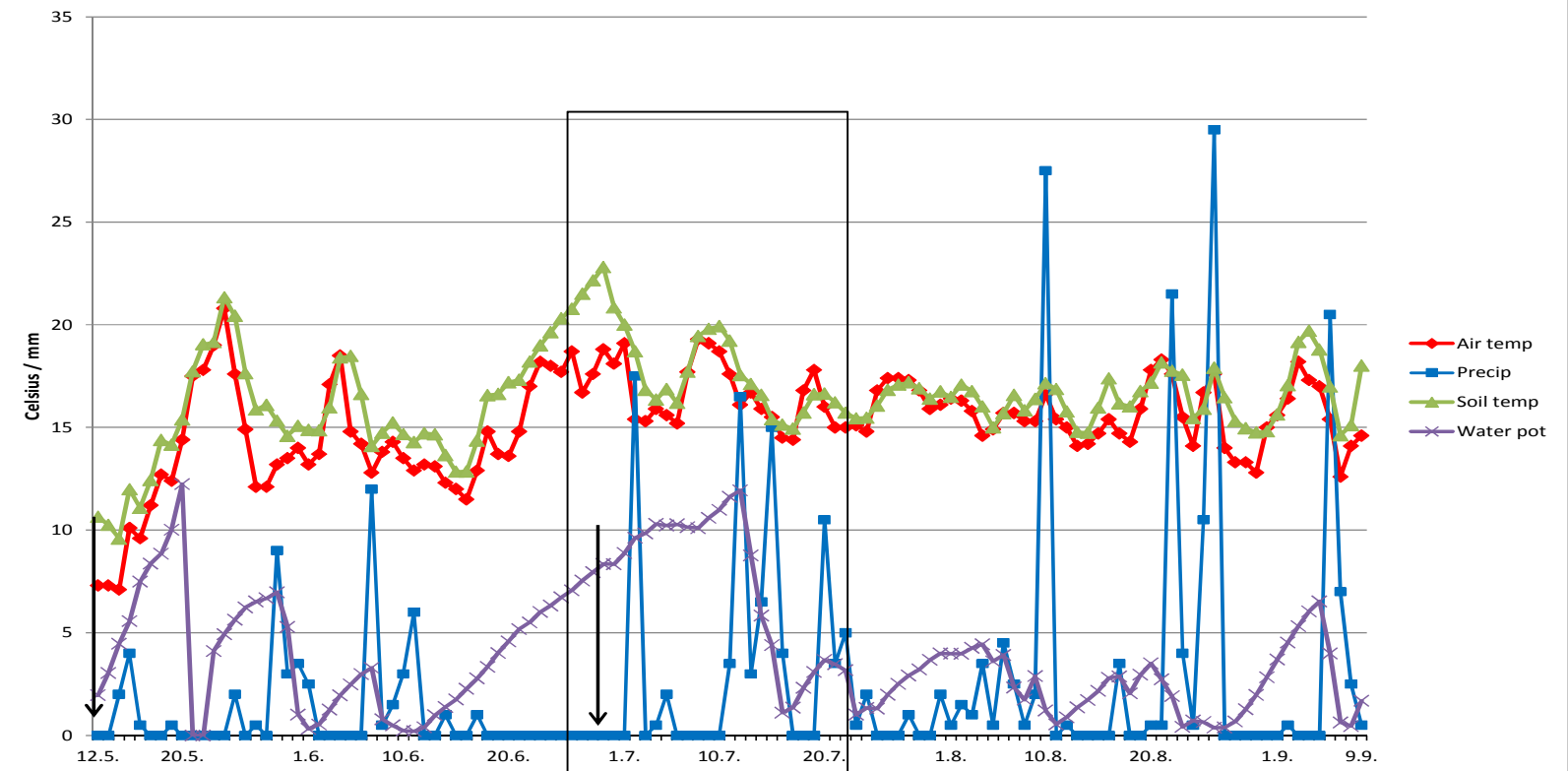
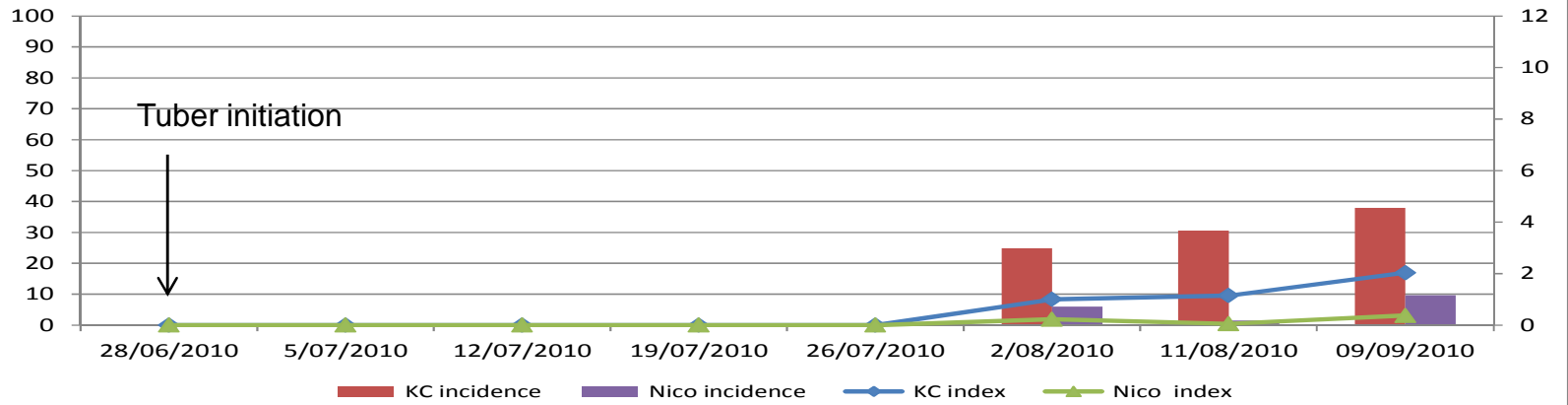
France
2009

265mm
Ta 14.8
Ts 17.3



France
2010

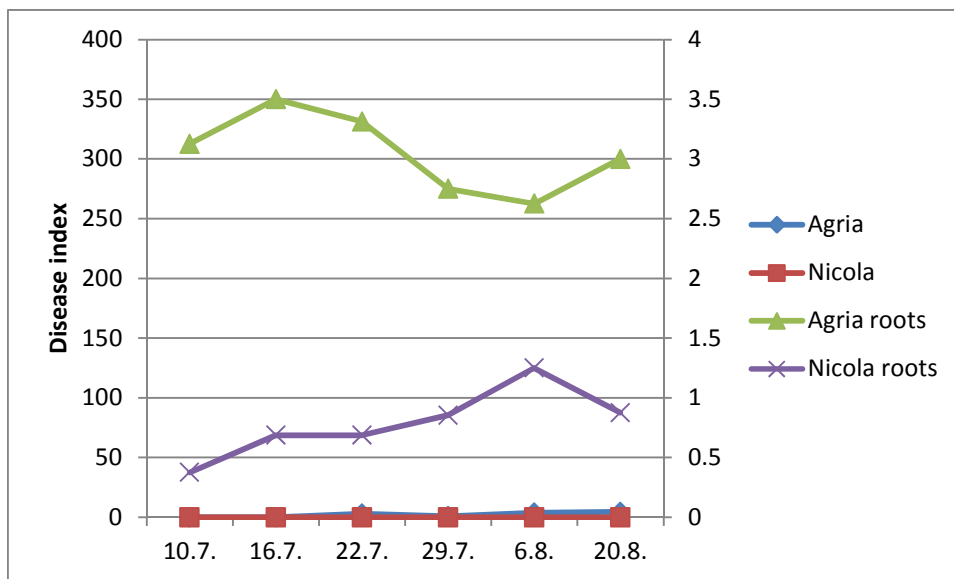
291mm
Ta 15.2
Ts 16.5



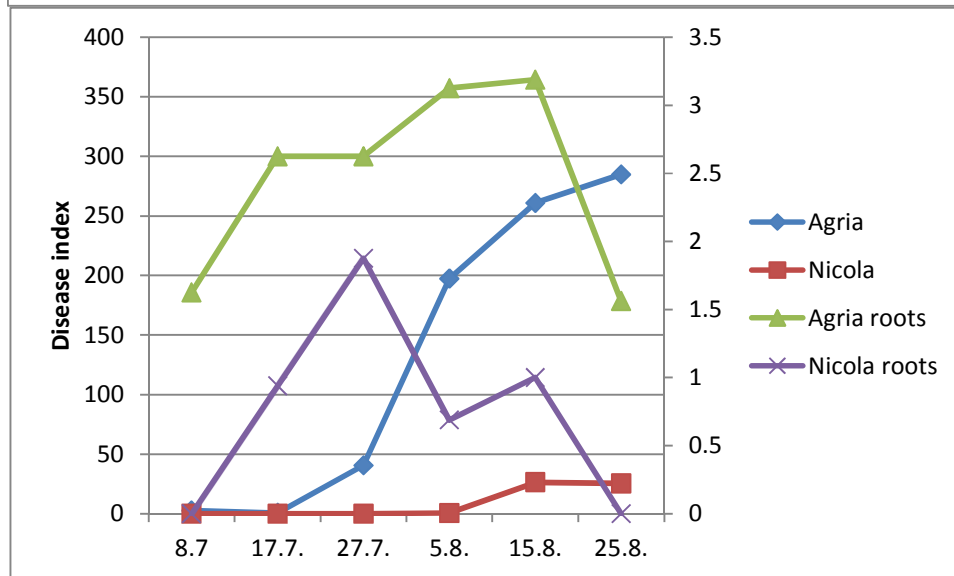


CH / Walle

2008



2009



Some early conclusions

- Root gall disease appears mostly before tuber disease
- All locations in all years show root gall disease but not always tuber disease (e.g. CH Walle 2008 – it's the lower precipitation compared to 2009)
- In some locations, the level of tuber as well as of root gall disease is constantly increasing (e.g. UK 2010)
- Soil temperatures around 15 °C and high soil moisture favors disease incidence and severity (e.g. UK 2010/ France 2010 compared to 2009)
- Locations in Scotland have a high disease pressure