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Potato Phytoplasma research in Belgium, an update

Kris De Jonghe
Rachid Tahzima

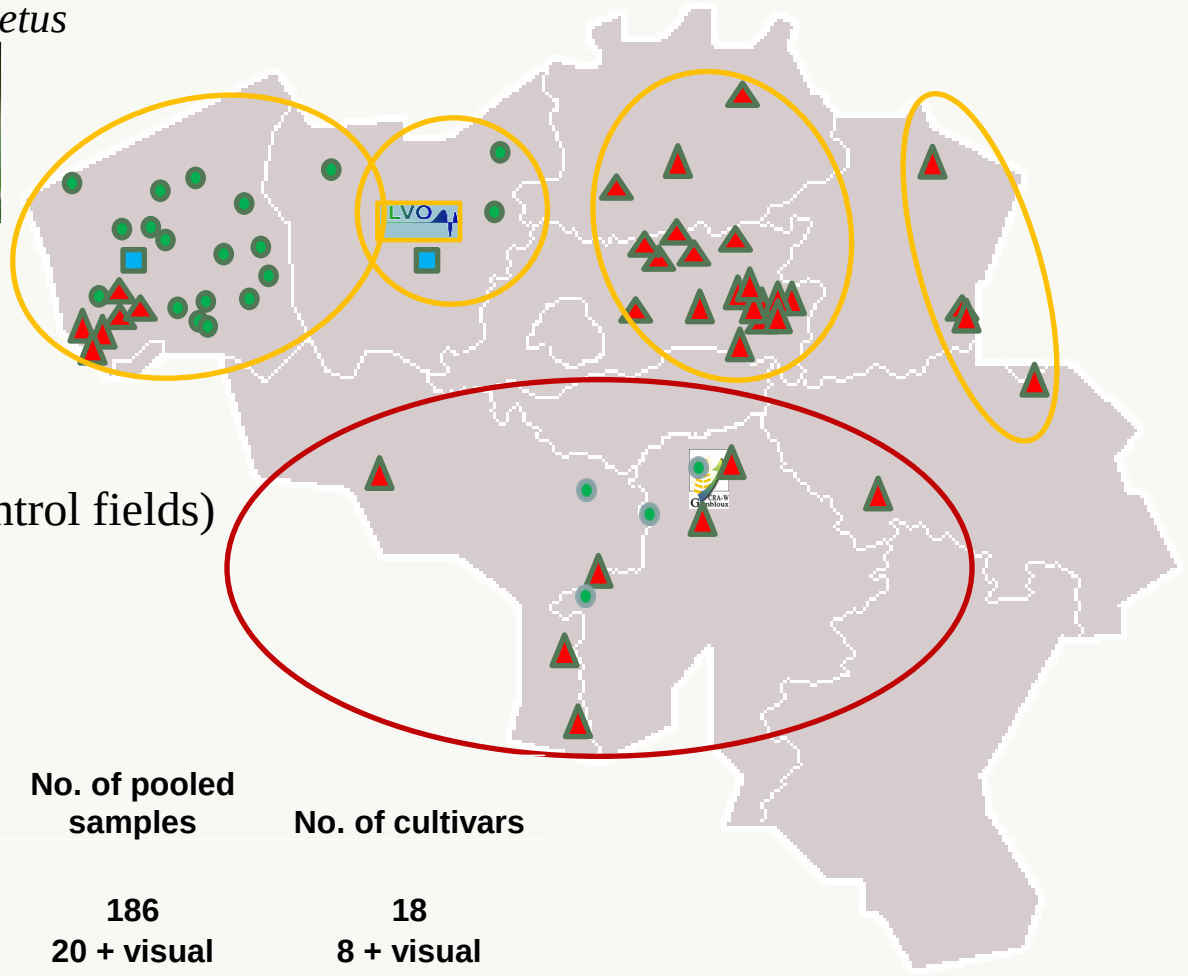
Instituut voor Landbouw- en Visserijonderzoek
Eenheid Plant
www.ilvo.vlaanderen.be

FYQUARSTAT: Potato stolbur phytoplasma survey

H. obsoletus

Sampling :

- Grapevine
- Strawberry
- Potato (pre/post control fields)



	No. of producers	No. of pooled samples	No. of cultivars
Grapevine	27	186	18
Potato	Pre/post control field + 2	20 + visual inspection	8 + visual inspection (102)
Strawberry/*Rubus*	19	153	3

+ sampling of *Convolvulus* and *Urtica*

No positive samples

Potato phytoplasmas

2012-2014: – PHYLIB
2012: MSc thesis – Rachid Tahzima

WP1. Collections: isolates

Ca. Phytoplasma solani
- *Rubus* and *Convolvulus* isolate
- On potato tubers (limited)

WP2. Detection and identification

Extraction
CTAB
DNeasy or Invitek Spin Plant

Phytoplasma
P1/P7 (or Tint) – R16F2/R2 – stol11 – fu5/ru3
real-time PCR (Christensen & Hodgets)
Qbol protocol
- TufAY/Tuf cocktail
- 16S (P1-ATT/P625r)

Ring testing ?

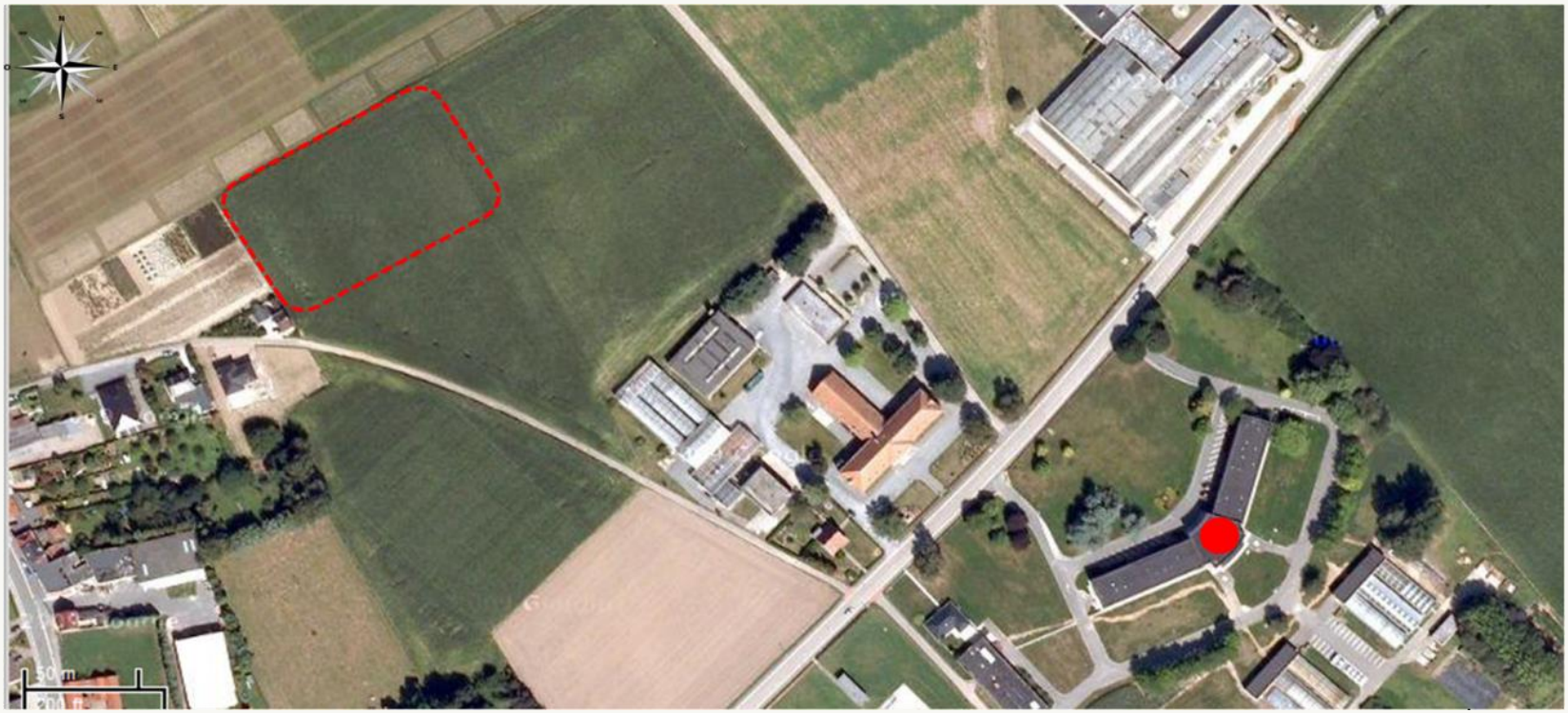
Liberibacter
LsoF/OI2c (Li et al 2009 & Jagoueix et al 1996)

Potato phytoplasmas

WP3. Epidemiology

Seed potato survey (2012)

- Pre and post control field visual inspection
- Sampling: 10 leaves/seed potato lot (spec. cv. And class)
- Inspection/sampling: vectors and possible source plants (weeds)



Potato phytoplasmas

WP3. Epidemiology

Post control field 2012

Potato phytoplasmas

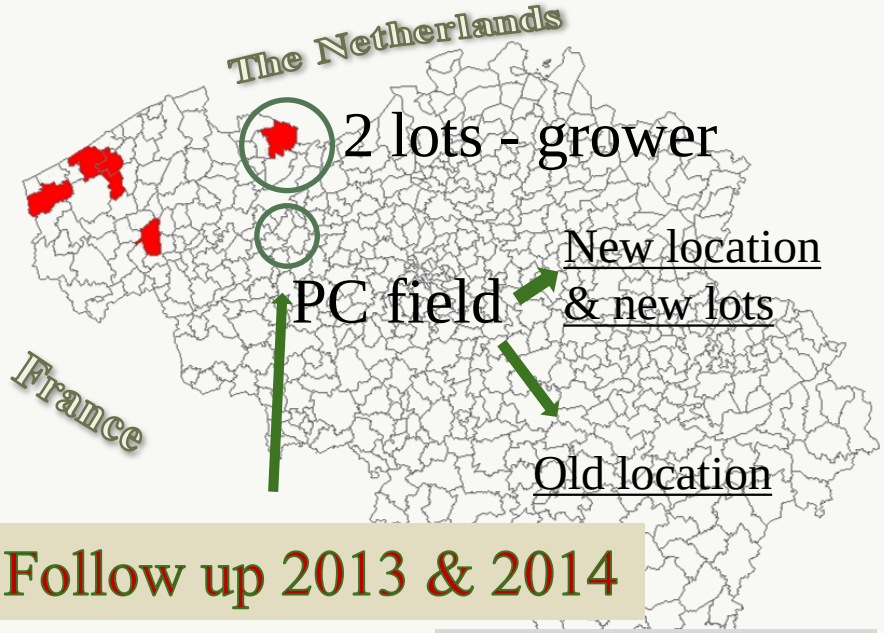
Survey results:

Ca Phytoplasma solani – identified based on tuf sequence results

	Plot	Variety	Class	Symptoms	R16F2/R2 (10+2/250) PCR Score	tuf band	16S band	lot ID	potato type	Origin
1	021	PREMIERE	E2	Leaf	1 (2/26)	1	1	11 027057 003	early	Assenede
2		***Buffer plant Fontane***		*Aerial Tubers*	*1*	1	1	_		*2011*
3	029	PREMIERE	A2	Leaf	1	1	1	11 027129 009	early	Koekelaere
4	040	AGATA	SE	Leaf	1 (1/2)	1	1	11 084066 011	early	Middelkerke
5	041	AMORA	E2	Leaf	1 (1/1)	1	1	11 028544 012	intermediate	Veurne
6	042	ANOSTA	E2	Leaf	1 (2/13)	1	1	11 027057 011	early	Assenede
7	048	ANOSTA	A2	Aerial Tubers	1	1	1	11 053890 017	early	Roesselaere
8	061	CILENA	SE	Leaf	1 (1/1)	1	1	11 027057 006	early	Assenede
9	083	BALLERINA	B	Aerial Tubers	1 (1/1)	1	1	11 084066 014	early	Middelkerke
10	194	BINTJE	A2	Aerial Tubers	1 (2/73)	1	1	11 010752 011	late	Waterland-Oud.
11	247	BINTJE	A2	Aerial Tubers	1	1	1	11 027057 029	late	Assenede
12		***Buffer plant Fontane***		*Start aerial tuber formation*	1	1	1	_		*2011*

Potato phytoplasmas

Origin of the infected seed potato lots



Follow up 2013 & 2014

NO STOLBUR found anymore

Leaf and stem symptoms

Potato phytoplasmas

Tuber symptoms

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Potato & carrot Phytoplasma research in Belgium, an update

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