



Meeting WG 1 & 2 of COST Action FA 1303
Budapest, Hungary, 26th -27st February, 2015

WG1. Pathogen Characterization, Detection and Epidemiology

GWTDs European Survey : Analysis of the Questionnaire Responses

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WG1. Pathogen Characterization, Detection and Epidemiology *GWTDs European Survey : Analysis of the Questionnaire Responses*

I- Introduction : Objectives

As a first step of the GWTDs European Survey : the **questionnaire** (2014-2015)



- To collect general information on
 - The occurrence and the frequency of the different grapevine wood trunk diseases (adult & young vines)
 - The characteristics of the vineyard
- To identify corresponding people in each country or region (Epidemiology Network)



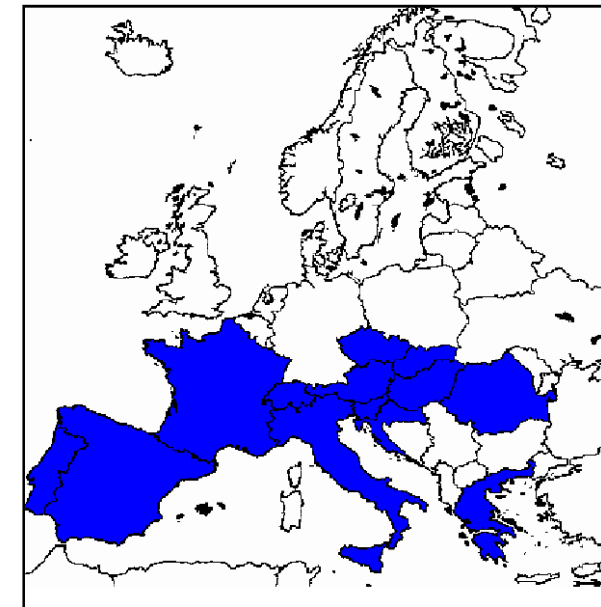
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GWTDs European Survey : Analysis of the Questionnaire Responses

I- Introduction : Responses

- 13 countries (12 EU + Israel) : 59 viticulture areas
- Missing 3 UE countries : Germany, Bulgaria, Slovakia

EU Country	EU	Region Number	Responsible name by country		Vineyards surface (2012)* 1 000 Ha
Portugal	PT	5	Cecilia	Rego	239
Switzerland	S	6	Olivier	Viret	15
Hungary	HU	1	Erzsébet	Karaffa	64
			Zoltan	Bihari	
Spain	SP	6	Josep	Armengol Forti	1018
Romania	Ro	5	Liliana	Tomoiaga	205
Czech	CZ	3	Miroslav	Baranek	- ^a
Croatia	HR	2	Marijan	Bubola	-
Greece	EL	3	Tzamos	Sotiris	110
Austria	AT	4	Harald	Berger	44
Slovenia	SI	3	Denis	Rusjan	-
Italia	IT	8	Laura	Mugnai	769
France	F	7	Lucia	Guérin-Dubrana	800
Israel	Il	5	David	Ezra	-
Total	13	59			3400*



*OIV source - prevision- all types of production in EU

^a no source

- Which opportunities to enlarge the survey to other mediterranean countries to complete the survey ?
 - Balkan Countries: Serbia, Bosnia Herzegovina, Kosovo, Macedonia, Albania
 - Algeria, Morocco, Tunisia, Turkey, Lebanon



II- Characteristics of European Grapevine Production

➤ Types of Production – Number of mention (all 59 regions)

	Wine				Nursery		Table Grape		Total	
	High Quality		Every day Consumption		N	N	TG	TG		
	WHQ	WHQ	WEC	WEC						
Number	Frequency	Number	Frequency	Number	Frequency	Number	Frequency			
Production 1st	52*	88,1	6	10,2	1	1,7	0	0,0	59	100
Production 2d	5	9,3	42	77,8	3	5,6	4	7,4	54	100
Production 3d	0	0,0	0	0,0	19	70,4	8	29,6	27	100
Production 4th	0	0,0	0	0,0	1	100,0	0	0,0	1	100
Total	5		48		24		12			

* number of mention

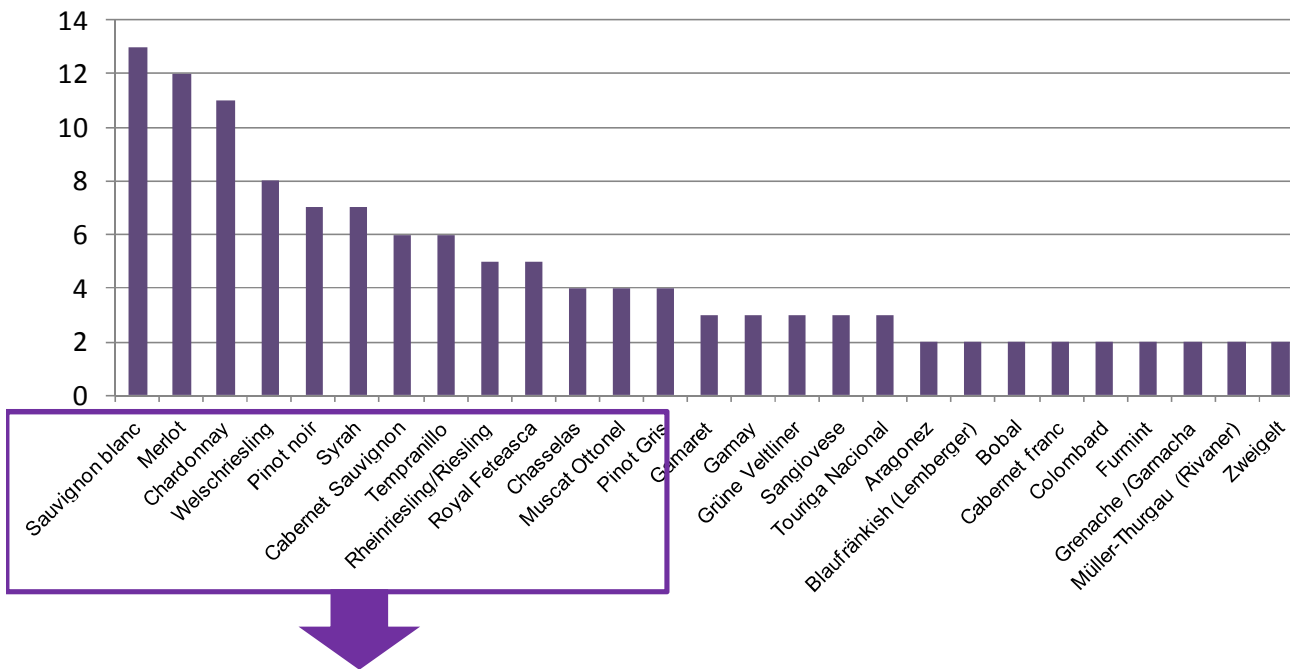
	Wine				Nursery		Table Grape		Total
	High Quality		Every day Consumption		N	N	TG	TG	
	WHQ	WHQ	WEC	WEC					
Number	Frequency	Number	Frequency	Number	Frequency	Number	Frequency		
Production 1st	52	91,2	6	12,5	1	4,2	0	0,0	59
Production 2d	5	8,8	42	87,5	4	12,5	4	33,3	60
Production 3d	0	0,0	0	0,0	19	79,2	8	66,7	27
Production 4th	0	0,0	0	0,0	1	4,0	0	0,0	1
Total	57	100	48	100	25	100	12	100	147

- The major production : vintage wine, Controlled designation origin...
- In second : Table wine or local wine
- In third : Nursery & table grape



II- Characteristics of European Grapevine Production

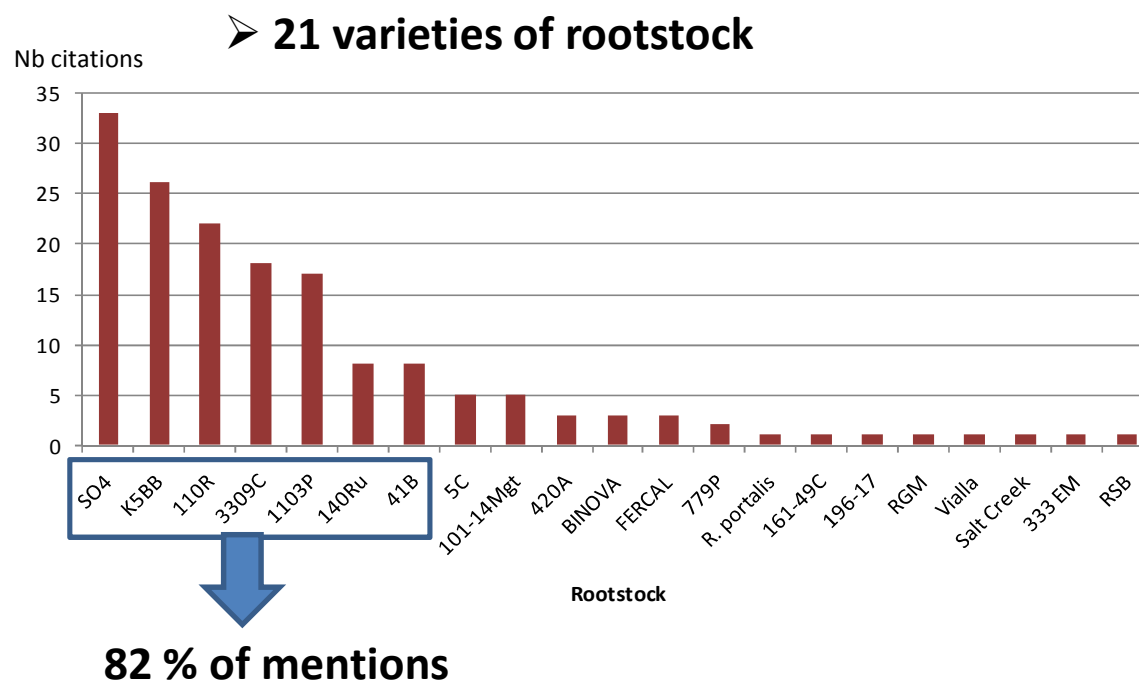
- **List of the main grown cultivars per country or per area (total 84 cultivars)
 (number of mention = 182)**



13 cultivars = 50 % of mentioned ones

Single mention Cultivar :			
N°	Cultivar	N°	Cultivar
1	Agiorgitiko	30	Montonico/Chardonnay
2	Airén	31	Muscat d'Alexandrie
3	Alfrocheiro	32	Negoska
4	Aligoté	33	Nero d'Avola
5	Alvarinho	34	Nuragus
6	Arvine	35	Parrellada (white)
7	Baga	36	Passerina,
8	Blaufränkisch	37	Pecorino,
9	Cannonau	38	Pinot blanc
10	Carignan	39	Plavac mali
11	Castelão	40	Prosecco
12	Catarratto	41	Rebula
13	Chenin	42	Refosco
14	FernãoPires	43	Sant Laurent
15	Garganega	44	Touriga Franca
16	Garnacha tinta	45	Trajadura
17	Glera	46	Traminer
18	Grillo	47	Trebbiano
19	Hárslevelű	48	Trebbiano d'Abruzzo
20	Istrian Malvasia	49	Trebbiano romagnolo
21	Jaen	50	Trincadeira
22	Loureiro	51	Ugni blanc
23	Macabeo	52	Vermentino
24	Macabeo (white)	53	Vernaccia
25	Mavrodafni	54	Viura
26	Melon	55	Xarel-lo (white)
27	Meunier	56	Xinomauro
28	Montepulciano	57	Yellow muscat
29	Montepulciano d'Abruzzo		

II- Characteristics of European Grapevine Production

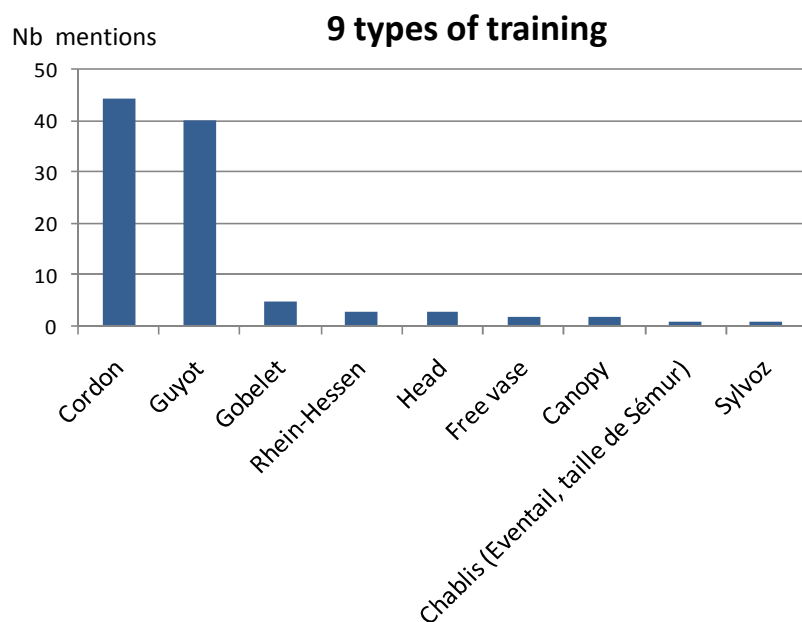


- A large diversity of cultivars
- 7 main rootstock cv.



II- Characteristics of European Grapevine Production

➤ Training and Pruning



Pruning type	Frequency	mention nb	Observations
Trained hand pruning	+++	45	
	++	5	
	+	1	
Non trained hand pruning	+++	5	
	++	0	
	+	7	
Mechanical pruning	+++	0	
	++	2	
	+	21	Shoot tip removal , increase (Austria)
other		2	elimination of suckers during vegetation
		7	soft pruning
		5	pre-pruning

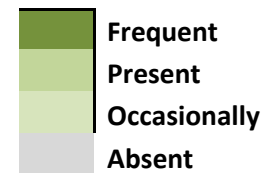
- Cordon & Guyot : the main types of training
- Hand Pruning in majority with increase of pneumatic pruning shears – Mechanical pruning more frequent in some countries



III- The occurrence and frequency of GWT Diseases in European Countries

- On adult vines ... in an area or country : A disease profile

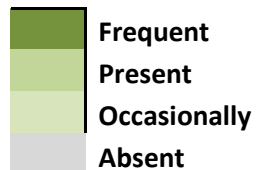
	Never recorded/not yet recognized	Present but only occasional	Present	Frequent		Disease Profile
	0	1	2	3		
Symptoms in the vineyard						
Apoplexy				X		Frequent
Grapevine Leaf Stripe Disease (GLSD)				X		Frequent
Dead cordon (agent not identified)						Absent
Dead cordon (frequent Botryosphaeriaceae cankers)				X		Frequent
Dead cordon (<i>Eutypa dieback</i> foliar symptoms)		X				Occasionally
Excoriose (cane cankers by Phomopsis)			X			Present



III- The occurrence and frequency of GWT Diseases in European Countries

➤ On Adult Vines : The GWTD disease profile by country

Country	Portugal	Spain	Slovenia	Croatia	Greece	Italia	France	Hungary	Switzerland	Czech	Austria	Romania	Israel	Frequency
region number	4	6	3	2	3	8	7	2	6	3	4	5	5	
Apoplexy	3													0,8
	2													0,4
	1													0,3
	0													0,1
Grapevine Leaf Stripe Disease (GLSD)	3													0,6
	2													0,15
	1													0,2
	0													0,15
Dead cordon (agent not identified)	3													0,4
	2													0,4
	1													0,5
	0													0,1
Dead cordon (frequent Botryosphaeriaceae cankers)	3													0,5
	2													0,3
	1													0,6
	0													0,2
Dead cordon (<i>Eutypa dieback</i> foliar symptoms)	3													0,4
	2													0,3
	1													0,55
	0													0,2
Excoriose (cane cankers by Phomopsis)	3													0,55
	2													0,4
	1													0,5
	0													0,15



Caution : these first results need to be completed

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➤ On adult vines : The GWTD disease profile by area within country

Disease	Switzerland						Portugal					France											
	Country (region)	1	2	3	4	5	6	5n	1	2	3	4	5	7	1	2	3	4	5	6	7		
Spring climate		WCS	WCS	DS	WCS	WWS	WCS		DHS	WWS	WWS	WCS	WCS	WWS		WCS	WCS	WCS	WCS	WCS	WCS	WCS	
Summer Climate		CS	CS	DHS	CS	WHS	CS		DHS	CS	CS	DHS	DHS		CS	CS	CS	DHS	DHS	DHS	WHS	WCS	
Apoplexy																							
Grapevine Leaf Stripe Disease (GLSD)																							
Dead cordon (agent not identified)																							
Dead cordon (Botryosphaeriaceae cankers)																							
Dead cordon (Eutypa dieback foliar symptoms)																							
Excoriose (cane cankers by Phomopsis)																							

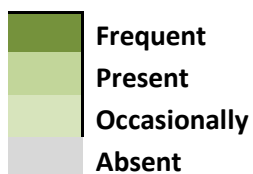
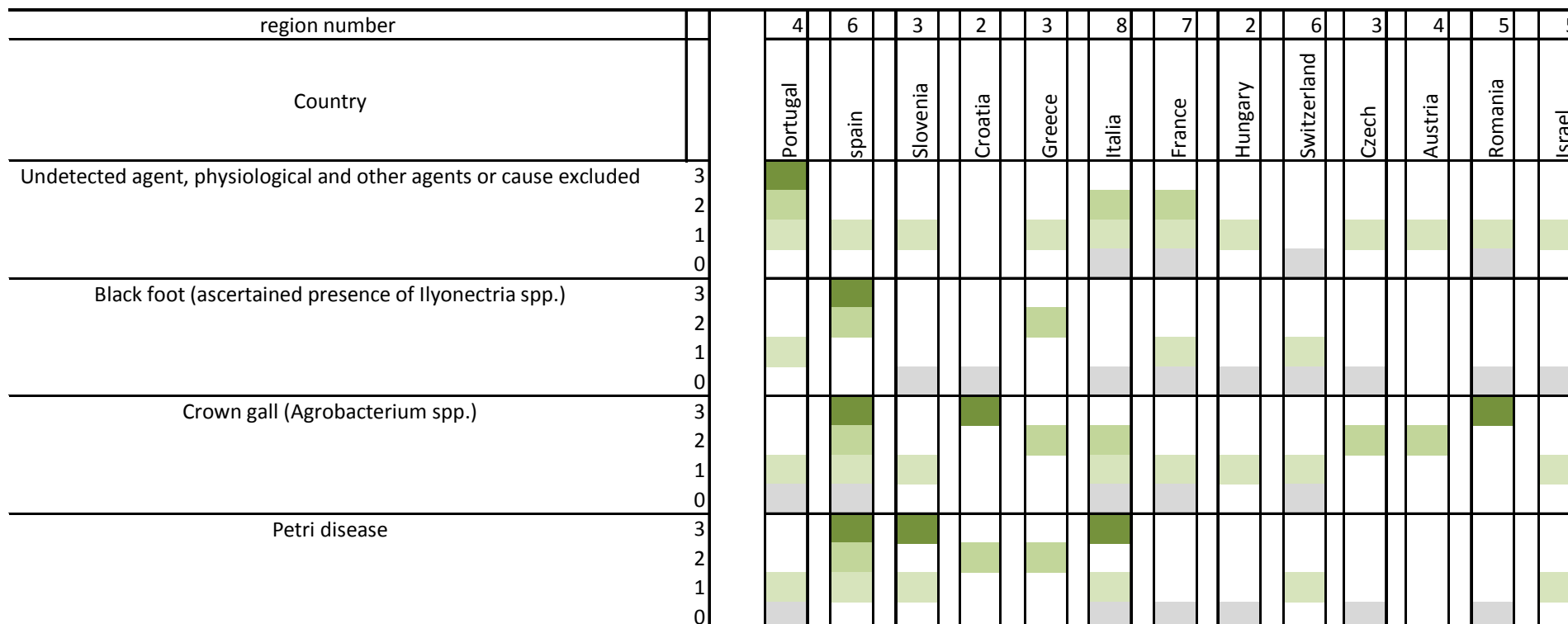


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III- The occurrence and frequency of GWT Diseases in European Countries

➤ Causes of young vines decline : The disease profile by country



Caution : these first results need to be completed



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III- The occurrence and frequency of GWT Diseases in European Countries :

➤ Increasing & worrying ones (number of mentioned areas)

	Number of cited areas	Present but only occasional & increase	Present & increase	Present & increase & worrying	Frequent & increase	Frequent & increase & worrying	Countries	Countries
		1i	2i	2iw	3i	3iw	2-3i	2-3iw
Symptom on adult vine	Apoplexy	0	2	0	14	3	Spain, Switzerland, Romania, Portugal, France, Italy	France, Portugal, Spain
Symptom on adult vine	Grapevine Leaf Stripe Disease (GLSD)	0	0	3	4	8	Portugal, Italy	Czek, Spain, Austria, France, Portugal, Italy
	Dead cordon (agent not identified)	0	0	0	3	1	Romania	France
	Dead cordon (frequent Botryosphaeriaceae cankers)	0	0	0	2	2	France, Italy	Spain, Portugal
	Dead cordon (Eutypa dieback foliar symptoms)	0	0	0	3	0	Romania	
	Excoriose (cane cankers by Phomopsis)	0	0	5	0	0	Romania	
Decline in young vineyards (2-6 yrs old)	Undetected agent, physiological and other agents or cause excluded	0	0					
	Black foot (ascertained presence of Ilyonectria spp.)	0	1	0	0	0	Spain (Ribera del Duero)	
	Crown gall (<i>Agrobacterium</i> spp.)	0	0	0	0	0		
	Petri disease	0	0	0	0	0		

Caution : these first results need to be completed



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- The other diseases and pests

	Other Relevant Diseases		Other Relevant Pests
1	Phytoplasma	1	Eotetranychus carpini,
2	Flavescence Dorée	2	Lobesia botrana
3	Bois Noir	3	Calepitrimerus vitis
4	Downy Mildew	4	Colomerus vitis (Erinose)
5	Powdery Mildew	5	Empoasca vitis (Cicadelle)
6	Botrytis	6	Aleothryps vitis,
7	virus	7	Partenolecanium sp.etc
8	Virus Leaf-Roll_3	8	Sparganothis pilleriana (Pyrale)
9	Virus GFLV	9	Coccoïdae (Cochenille)
10	GPGV	10	Eupoecilia ambiguella (Cochilys)
11	Black rot	11	Planococcus ficus
12	Armillaria	12	Paropta paradoxa
13	Syrah Decline		
14	261_49 Decline		



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Discussion /conclusion

- Frequency of several GWT diseases around Europe : apoplexy and GLSD with increasing in several countries.
- Other problems as dead cordon with known or unknown cause also are relevant
- Decline diseases in young vine remains frequent in some countries
- First results need to discuss and to be more analysed

- Proposal : Further studies
 - Qualitative data need to be completed with quantitative ones -> RT discussion
 - Better understand the causes of dead cordon -> diagnostic
 - Understand the causes of GWTD increase

- Limits of that survey :
 - Qualitative data based on general professional expertise
 - Information may be biased or distorted by different factors (observers network, focus on certain diseases, other great problem, relationship between "field " & research...)
 - Too much general information to carry on multivariate analysis
 - No information on critical factors : soil , cultural practices which need another scale of study



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We Thank very much :

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