



WG 1&2 COST Action FA 1303
Vienna- Austria 25th -26st February, 2016

First Assessment of the Distribution of Trunk Diseases on Young and Adult Grapevines in Europe :

Steps toward a common publication

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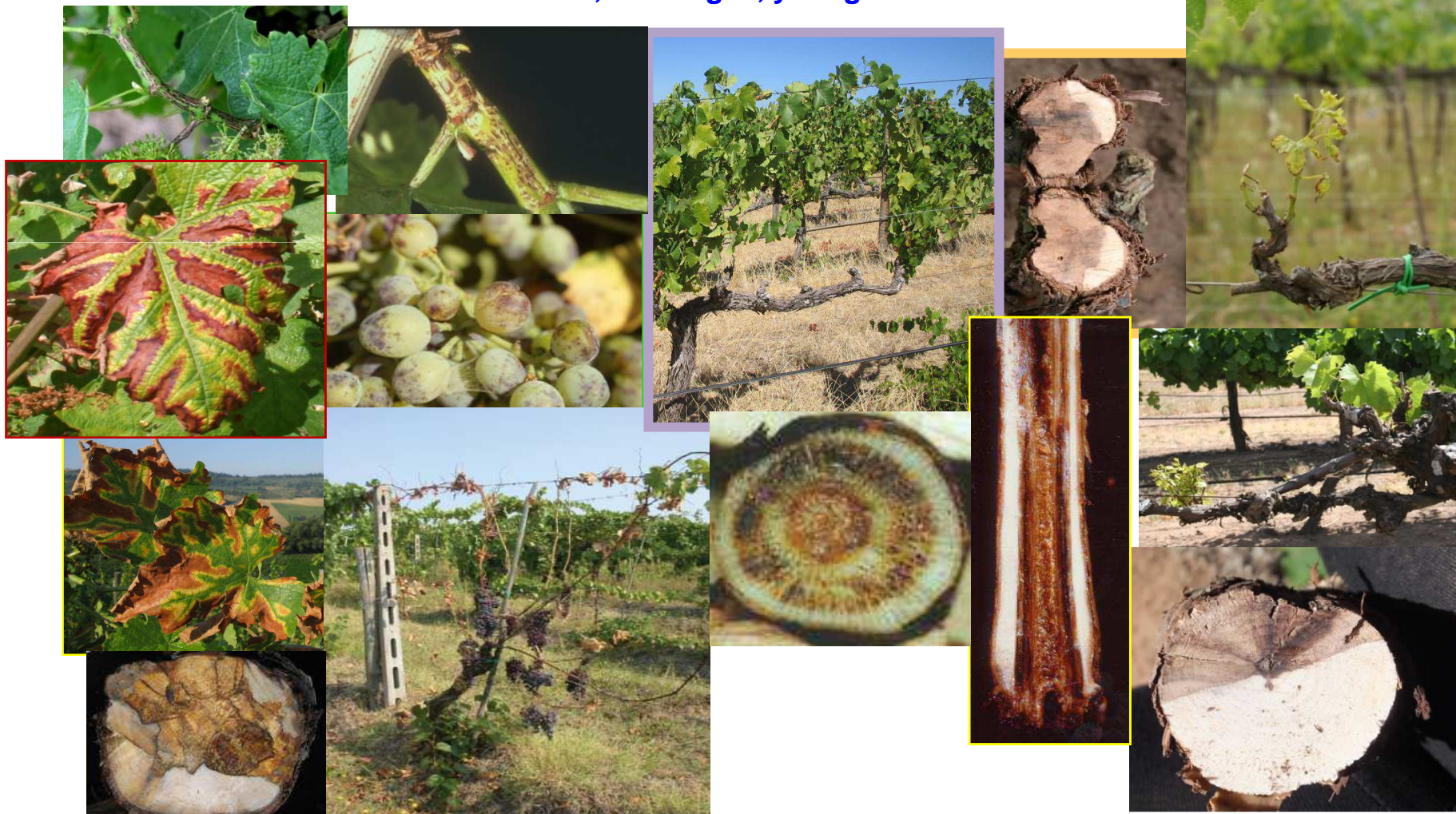
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- One of the Objectives of the *WG1. "Pathogen Characterization, Detection and Epidemiology"* is to set up a GTDs survey to

(1) Give an overview of the presence and frequency of the main fungal grapevine trunk diseases (GTDs)

Esca (Apoplexy, GLSD), Eutypa dieback, Botryosphaeria dieback, dead cordon, excorioso, black foot, Petri disease, crown gall, young vine decline





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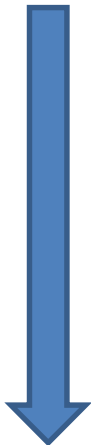
First Assessment of the Distribution of GWTDs in Europe

- **One of the Objectives of the WG1. "Pathogen Characterization, Detection and Epidemiology" is to set up a GTDs survey to**
 - (2) Collect general information on the characteristics of the viticultural areas at a regional scale to understand the influencing factors**
 - (3) Establish a European network for further multisite GTD surveys**



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First Assessment of the Distribution of GWTDs in Europe

METHOD AND STEPS:

- 
- 1° A questionnaire sent to correspondent people of each European and Mediterranean country (2014)***
 - 2° Further questions asked and other countries added (2015)***
 - 3° First communication at the WS Cognac , France (June 2015)***
 - 4° Data analysis for producing results (2016)***
 - 5° Write a common paper (2016)***



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4° Data analysis for producing results (2016) :
« Types of data → Type of Results : Many questions »

I- General data on vineyards

II- GWT Diseases on adult grapevine per country

III- GWT Diseases on young grapevine per country

IV- GWT Diseases per region (where available)

V – Towards a common publication



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I- General data on vineyards

- From 13 countries (12 EU + Israel) in 2015 to **20 countries** (**99 viticulture regions**)
- 4 Mediterranean countries

EU Country	EU	Region Number	Responsible Name		Vineyards surface x 1,000 Ha- Quest. Resp.	Vineyards surface x 1,000 Ha
Portugal	PT	5	Cecilia	Rego	148	239*
Hungary	HU	6	Karaffa	Erzsébet		64*
Spain	SP	7	Josep	Armengol Forti	408	1018*
Romania	Ro	5	Liliana	Tomoiaga		205*
Czech	CZ	3	Miroslav	Baranek		17,4**
Croatia	HR	2	Marijan	Bubola	30	58**
Greece	EL	3	Tzamos	Sotiris	9,4	70***
Austria	AT	4	Harald	Berger	45	44
Slovenia	SI	3	Denis	Rusjan	5	22***
Italia	IT	12	Laura	Mugnai		769*
France	F	7	Lucia	Guérin-Dubrana	726	800*
England	UK	1	James	Woodhall		-
Bulgaria	BG	5	Teodora	Dzhambazova	74	74
Germany	DE	4	Andreas	Kortekamp		
Slovakia	SK	6	Ervin	Jankura		
Other European Countries						
Switzerland	S	6	Olivier	Viret		15*
Mediterranean Countries						
Lebanon	Le	3	Elia	Choueiri	7,3	7,3
Algeria	AL	6	Akila	Berraf	45	45
Turkish	T	6	Davut Soner	AkGul	476	476
Israel	Il	5	David	Ezra	3,2	3,2
Total	20	99				3 927

*OIV source - prevision- all types of production in EU , **official web sites, ***Wikipedia

Comments/Questions:

1- Data sources on vineyard surface for each country:
From institution = "official" OIV data?

2- Add non-COST countries to complete with all the European countries

3- the Unit for data = a region
-> Data to be completed
Ex : Turkey, Germany and



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I- General data on vineyards

➤ **List of the main production in European and Mediterranean countries**

	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 type 1	64	79,0	9	11,1	2	2,5	6	7,4	81	100
Production type 2	11	13,3	55	66,3	5	6,0	12	14,5	83	100
Production type 3	1	2,9	1	2,9	23	67,6	9	26,5	34	100
Production type 4	0	0,0	0	0,0	2	100,0	0	0,0	2	100
Total	76		65		32		27		200	

Comments- Questions:

1 – As the Unit for data is a region -" Number" = nb of citation (total = 99) -> Data to be completed ie : Turkey, Germany

2- important result to point out the economical issue

3- Other rare productions : wine for distillery (Charentes- France), dried grape (i.e. : Turkey –Mediterranean countries



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First Assessment of the Distribution of GWTDs in Europe

I- General data on vineyards

A main table with General characteristics of the countries as for surface and type of vineyards

Country	Country code	Surface vine cultivation: Total ha (in thousands)	Wine hL production	N. of relevant different viticulture areas	Main Type of production			Relevant Nursery production
					Wine H, High quality T, Tablewine	Table grape	Dry grape	

Comments- Questions:

- 1- Useful to interpret some data.
- 2- Should we focus on a few countries with more detailed data?
- 3- Need of official data per country or per region ?

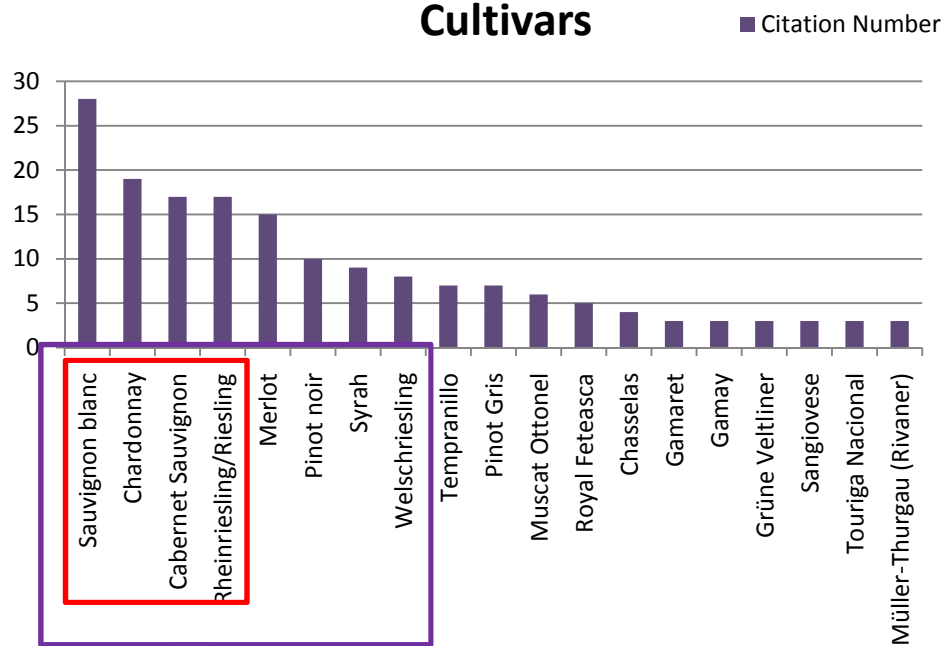


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I- General data on vineyards

➤ Main grown cultivars in European and Mediterranean countries



8 cultivars = 50 % of mentioned ones

The 4 first mentioned cultivars are classified as very susceptible or susceptible to esca - SEARCH FOR MORE LITERATURE REFERENCES

- Presence and relevance of 2 very susceptible cultivars in Europe and some Mediterranean countries
- Cabernet Sauvignon and Chardonnay

Cv with One or Two mentions only

Aragonez	Melon
Blaifränkisch (Lemberger)	Meunier
Bobal	Montepulciano
Cabernet franc	Montepulciano d'Abruzzo
Colombard	Montonico/Chardonnay
Furmint	Muscat d'Alexandrie
Grenache /Garnacha	Negoska
Zweigelt	Nero d'Avola
Garnacha tinta	Nuragus
Macabeo	Parellada (white)
Agiorgitiko	Passerina,
Airén	Pecorino,
Alfrocheiro	Pinot blanc
Aligoté	Plavac mali
Alvarinho	Prosecco
Arvine	Rebula
Baga	Refosco
Blaifränkisch	Sant Laurent
Cannonau	Touriga Franca
Carignan	Trajadura
Castelão	Traminer
Catarratto	Trebbiano
Chenin	Trebbiano d'Abruzzo
FernãoPires	Trebbiano romagnolo
Garganega	Trincadeira
Glera	Ugni blanc
Grillo	Vermentino
Hárslevelű	Vernaccia
Istrian Malvasia	Viura
Jaen	Xarel·lo (white)
Loureiro	Xinomauro
Macabeo (white)	Yellow muscat
Mavrodafni	



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First Assessment of the Distribution of GWTDs in Europe

I- General data on vineyards

- Presence and relevance of 2 very susceptible cultivars in Europe and some Mediterranean countries
- Cabernet Sauvignon and Chardonnay

38 Cabernet available
24 Chardonnay available
 7 and 11 NOT available

COUNTRY	Regions with answer	Regions with no answer	Cabernet	Chardonnay	Local susceptible cvs
Algeria	0	5			
Austria	3				
Bulgaria	5		1		Ugni Blanc, Riesling, Velika, Pallieri
Croatia	2				Istrian Malvasia (Diaporthe)
Czechoslovakia	0	3			
France	0	7			
Germany	5				Müller-Thurgau
Greece	3				Xinomaura (3)
Hungary	6	2	3	1	
Israel	4				French Colombard, Carignan (esca?), Merlot (Bot?)
Italy	2	10	1	1	Sangiovese,
Lebanon	2	1	1		Red Globe
Portugal	5				Touriga National (3), Loureira (1), Aragonez (1)
Romania	0	5			
Slovenia	3		1	2	
Spain	7	1			Tempranillo (3), Macabeo, Bobal, (Syrah)
Switzerland	6	1			Chasselas (3), Merlot, Muller Thurgau
Turkey	5	1			Sultana seedless (5)
UK	0	1			
TOTAL	58		7	4	

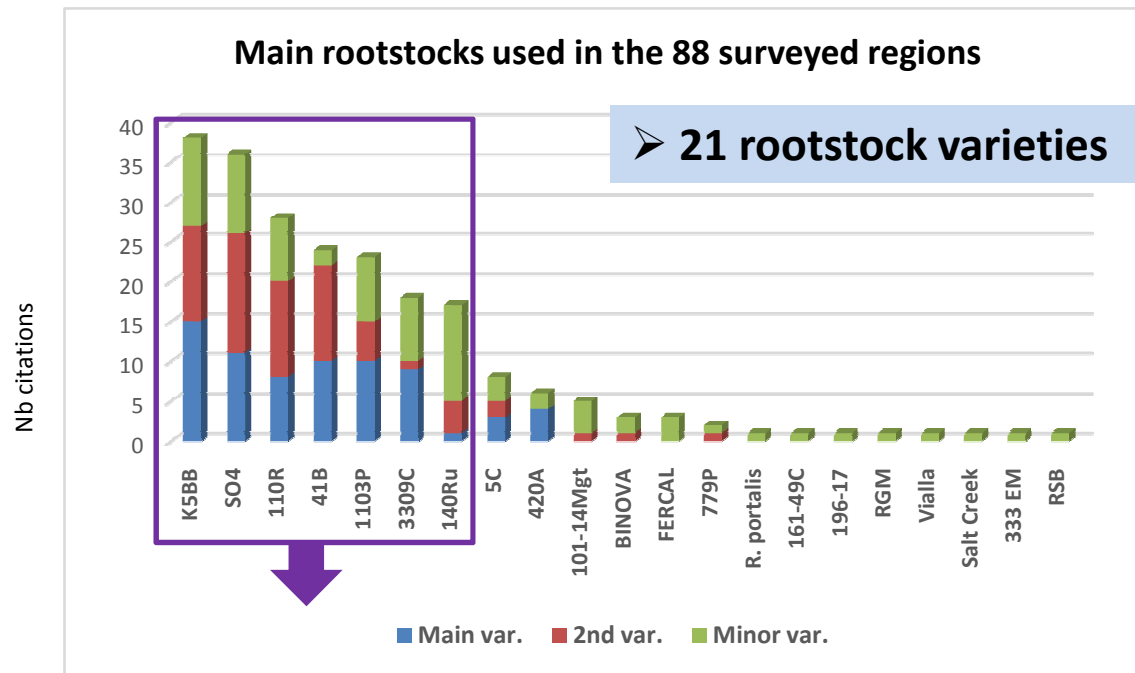


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First Assessment of the Distribution of GWTDs in Europe

I- General data on vineyards

➤ Main grown Rootstock in European and Mediterranean countries within the COST action



Comments /Questions:

1- Necessary to complete with information on the rootstock characteristics :

- its interaction with vigour = disease expression

- its role of rootstock in susceptibility to wood infection

2- SEARCH FOR MORE LITERATURE REFERENCES



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I- General data on vineyards

- Main PRUNING / TRELLISING system in European and Mediterranean countries

Comments :

1- Two main pruning system: cordon and guyot

2- Relationship with the susceptibility to esca ? Data from Littérature ?



COST Action FA 1303 First Assessment of the Distribution of GTWDs in Europe

II- GWT diseases on adult plants

- 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		
Grapevine Leaf Stripe Disease (GLSD)				X		
Dead cordon (agent not identified)						
Dead cordon (frequent Botryosphaeriaceae cankers)				X		
Dead cordon (Eutypa dieback foliar symptoms)		X				
Excoriose (cane cankers by Phomopsis)			X			

	Frequent
	Present
	Occasionally
	Absent

Comments-Questions :

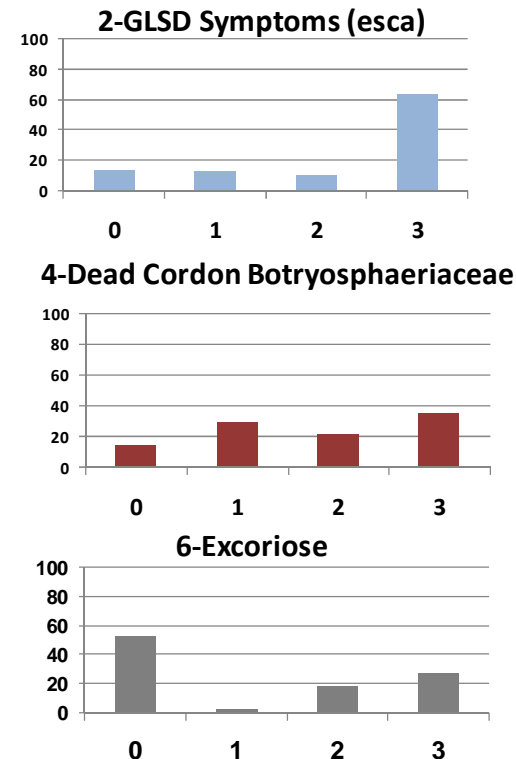
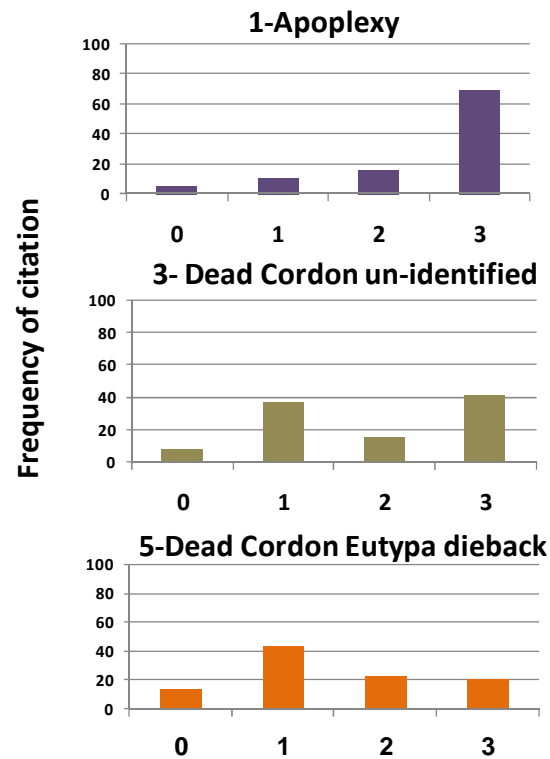
- 1- we need to consolidate the data e.g. Greece – to complete , Romania - Apoplexy but not so much GLSD («chronic » esca) ?
- 2- Relevant result with Eutypa dieback: variable frequency among countries and within countries
- 3- How important is the knowledge of the problem and research on GTWDs in the country? = Analysis GTWDs literature???



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II- GWT diseases on adult plants : combined data



Apoplexy = frequent
GLSD = frequent
Canker diseases = very variable presence (and knowledge)
Excoriose = occasional

3	Frequent
2	Present
1	Occasionally
0	Absent/no obs

Comments-Questions:

1- Difficult to differentiate canker agents

Difficult to identify safely unspecific symptoms in field surveys

2- Need to validate with scientific reports (literature research)



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III- GWT diseases on young plants

Comments-Questions:

- 1- Difficult to identify safely unspecific symptoms in field surveys
Need to validate with scientific reports (literature search) -
- 2- NOTE: crown gall in many countries!!!
- 3- Petri disease in 8 countries – to relate data with the Nursery survey?



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IV- GWT diseases on adult vine per region

Comments-Questions :

Focus on some countries with high variability on disease occurrence

Example : Hungary , Czech, Romania, Algeria, Bulgaria, Spain, France, Italia

Comments- Questions:

**How can we explain (make hypotheses)
the difference between region**

- Cultivar
- Climate
- Soil
- Type of production
-



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IV- GWT diseases : increasing and worrying ones

Comments- Questions :

How to consolidate these data : that is the real reflect of the reality ?

NEED to cross information about information sources and data :

Question	YES	NO	TOTAL ANSWERS SURVEYED = 17
Private consultant	7		
Public consultant	16		
Academic institution	15		
Viticulturists	12		
Diagnostic service on GTDs			
Regional level	12		
National level	1		
Survey or observations in the area on GTDs	14	5	
On which diseases?			ESCA, Eutypa, 3 on Botryo dieback, 1 Phomopsis
Data from surveys	11		
Presence or possibility of a recording GTDs survey?	10		
No without financial support	5		



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V – Towards a common publication

Conclusion :

- These data represent **our first shared** data on epidemiology
- They give us **a first global overview of the distribution** of the different GTDs in Europe and Mediterranean countries
- A wide range of disease profiles with **APOPLEXY** and **GLSD** wide spread and increasing
- Other problems as **dead cordon**, with known or unknown cause, are also relevant
- Decline diseases in young vine remain frequent in some countries, as **Crown Gall** and **Petri disease**

Further work :

- 1- Consolidate the data –**
- 2- Explore some of data -> in relation with defined objectives**
- 3- Write the common paper**
- 4 - Deadline for first draft: June 2016**



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First Assessment of the Distribution of GWTDs in Europe

We Thank very much :

Cecilia Rego (Portugal)
Jorge Sofia (Portugal)
Pedro Reis (Portugal)
Liliana Tomoiaga (Romania)
Tzamos Sotiris (Greece)
Monika Riedle-Bauer (Austria)
Tamara Cinelli (Italy)
Marie Laure Panon (France)
Caroline Le Roux (France)
Patrice Retaud (France)
Christel Chevier (France)
Michel Badier (France)
Lionel Delbac (France)
Olivier Viret (Switzerland)
David Eza (Israel)
Miroslav Baranek (Czech)

Marijan Bubola (Croatia)
Denis Rusjan (Slovenia)
Joseph Armengol Forti (Spain)
Ramona M. Muñoz (Spain)
David Gramaje (Spain)
Jordi Luque (Spain)
Rebeca Cobos (Spain)
Erzsébet Karaffa (Hungary)
Zoltan Bihari (Hungary)
Elia Choueiri (Lebanon)
Teodora Dzhambazova (Bulgaria)
Ivan Tsvetkov (Bulgaria)
Akila Berraf (Algeria)
Davut Soner Akgüll (Turkey)
(Germany)
(Slovakia)