

Pathogen characterization and detection

James Woodhall

- What are the most important GTD species
- Identify the reference isolates and mechanism of access
- Standard test conditions to determine the aggressiveness of GTD pathogens
- Characterization of the GTD pathogens life cycle

Identify the most important species

- *Phaeomoniella chlamydospora*
- *Phaeoacremonium aleophilum*
- *Fomitiporia mediterranea*
- *Phaeoacremonium parasiticum?*

- *Ilyonectria liriodendri*
- *Dactylonectria macrodidyma* – complex of 6 or 7 species
- *Campylocarpon fasciculare*
- *Cylindrocladiella parva*

- *Diplodia seriata*
- *Botryosphaeria dothidea*
- *Lasidiplodia theobromae*
- *Neofusicoccum parvum*
- *Neofusicoccum luteum?*
- *Spencermartinsia viticola*

- *Cadophora luteo-olivacea*
- *Eutypa lata*
- *Phomopsis viticola*

The trouble with *Phomopsis viticola*

Some uncertainty over which species/sequences

Potential community project/paper – with Pedro Crous?

Collection of grapevine *Phomopsis* isolates

-Josep, Artur, Phillippe, Kalman, David E, David G, Ales, Erzsebet, Ferenc, Stefania & James

Determine which strain/species most important for grapevines

Reference collection of approx. 30 GTD isolates

Purpose: Standards for diagnostics & pathogenicity testing

30 isolates representing the most important species

Where variability exists within species exists 2-3 isolates

80C agar plugs/glycerol method

Collection distributed to key labs in several countries where -80C

All isolates backed up at CBS and given CBS numbers

Reference collection of approx. 30 GTD isolates

Actions: Artur to circulate protocol on -80C storage method

Determining which isolates and providing strains:

Black foot pathogens: Cecilia/Anna?

Esca/Petri: Josep, David G

Cadophora: Josep

Phomopsis: Chosen after community activity?

Eutypa: David G, James (probably need 2-3 isolates)

Botryosphaeria: Artur

Ideally isolates should have been used in publication, DNA barcoded and been tested for pathogenicity

James to circulate draft list to populate



Develop standard test conditions to determine the aggression of individual GTD

- Stipulating which specific conditions (temp, RH) may be too difficult could provide some general recommendations
- Olivier to look into host material what is available EU wide – maybe 4-5 recommended varieties/clones available.
- Specialists to review literature for specific methods for:
 - Esca/Petri & related species – David G
 - Illyoncectria* – Cecilia/Anna?
 - Botryosphaeriaceae* - Artur
 - Eutypa*- David G
 - Other species – James
- Report back with recommended method for that group of pathogens

Life cycle characterization

- Spore trapping methods circulated
- Completing life/disease cycles for remaining pathogens

Develop a set of diagnostic protocols

James, Erzsebet and David G:

- Isolation protocols for key species
- DNA Barcoding protocols for key species – recommended primers, conditions & reference sequences
- Circulate Wood DNA extraction methods
- Potential to link to sampling methods in WG2?