Grapevine Trunk Diseases: What do We Know of Them in Oregon?

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What are the diseases?

What causes them?

What are the symptoms?

What do they mean for Oregon growers?

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Botryosphaeria


J. Urbez-Torres

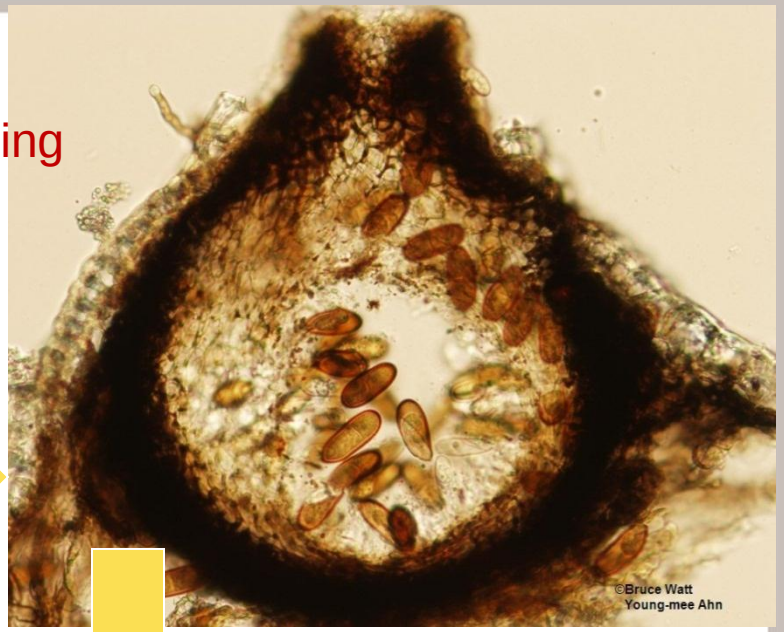

J. Úrbez-Torres

G.M. Leavitt

J. Úrbez-Torres

J. Úrbez-Torres

Overwintering spores



2 m water splash/ fresh wounds

Photo: Ed Hellman

Fungus Grows 10-12”/yr

Fruiting bodies form

Fungi associated with “Bot” canker in the US

Botryosphaeria dothidea
B. australis (*Neofusicoccum australe**)
B. lutea (*N. luteum**)
B. obtusa
B. parva (*N. parvum**)
B. rhodina (*Lasiodiplodia theobromae**)
B. sarmentorum
B. stevensii
B. viticola (*Spencermartinsia viticola*)

Diplodia corticola, D. seriata

Dothiorella americana

Lasiodiplodia crassispora, L. missouriana, L. viticola

Neofusicoccum mediterraneum, N. ribis, N. vitifusiforme

Teleomorph (perfect stage)
Anamorph (imperfect stage)

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Anamorph
(imperfect, clonal)

Teleomorph
(perfect, sexual)

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Lasiodiplodia crassispora, L. missouriana, L. viticola

Neofusicoccum mediterraneum, N. ribis, N. vitifusiforme

Teleomorph (perfect stage)
Anamorph (imperfect stage)

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Impact

Perennial cankers
Shoot dieback
Reduced fruit yield
Reduced vine longevity
Increased management costs

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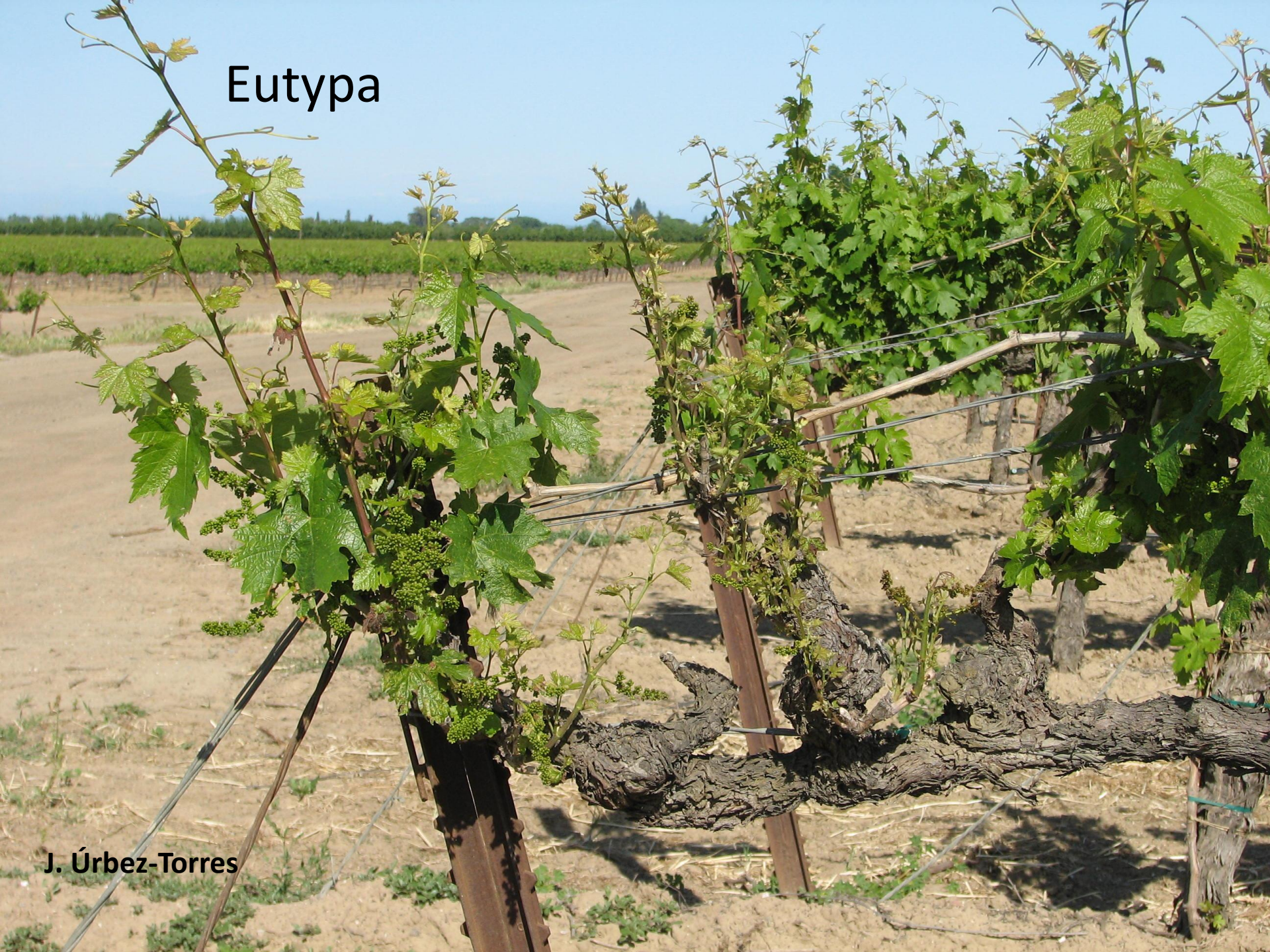
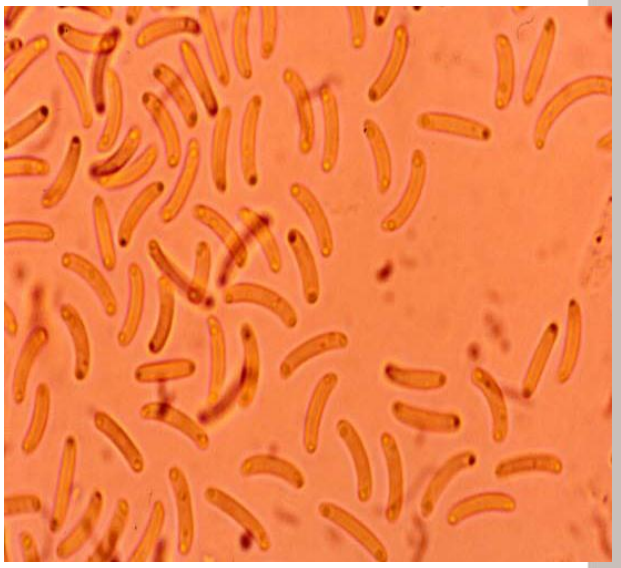

Eutypa
J. Úrbez-Torres

J. Úrbez-Torres

Ascospores released



Eutypa lata disease cycle in California

(from W.D. Gubler, et al., UC Davis)

Wounds

3-4 yrs later

6 yrs later

Fungi associated with “Eutypa” canker in the US

Eutypa lata, E. leptoplaca

Cryptosphaeria pullmanensis

Cryptovalsa ampelina

Diatrype oregonensis, D. stigma. D. whitemanensis

Diatrypella verrucaeformis

Diatrypella sp.

Eutypella vitis, Eutypella spp.

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Washington:

~ 20-50% yield loss for moderate disease

~ 60-95% yield loss for severe disease

California:

30-60% yield loss for moderate disease

80+% yield loss for severe disease

Fewer fruit clusters
Smaller clusters
Reduced vine longevity

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California:

Bot/Eutypa canker is #1 cause of reduced vineyard longevity

$260 million

Oregon:

???

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Eutypa Management:

- Mark vines in spring for removal.
- Remove diseased wood 4 - 6 inches below the canker, and train a new, healthy shoot into position.
- Avoid large pruning cuts, avoid pruning during and before wet weather.
- When making large cuts during wet weather, leave a stub, prune later during dry weather.
- Remove and destroy all large trunk or cordon pieces from the vineyard.

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Fungicides sprayed onto cuts within 24 hours of pruning, & second spray 2 weeks later.

- Mettle
- Rally 40 WSP
- Topsin M WSB. May also be applied as a paint to cut or pruned surfaces.
Oregon only (SLN OR-100003)

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Other fungi associated with grapevine cankers in the US

Aspergillus niger, A. carbonarius

Diaporthe eres

Pestalotiopsis sp., *P. uvicola*

Phaeomoniella chlamydospora

Phomopsis fukushii, P. viticola

Toginina minima (*Phaeoacremonium aleophilum*)

Schyzophyllum commune

and on and on…

Teleomorph (perfect stage)
Anamorph (imperfect stage)

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