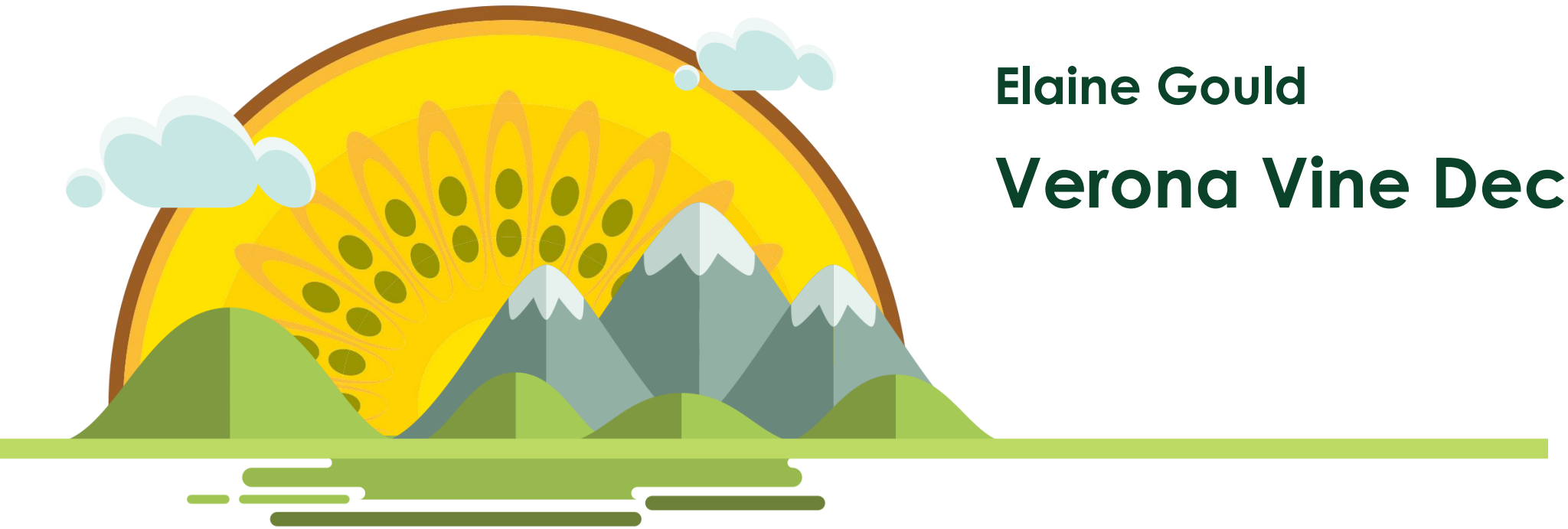


Elaine Gould

Verona Vine Decline

Yellow = affected
Green = unaffected

Death can occur in less than 9 months
Replanted vines also die

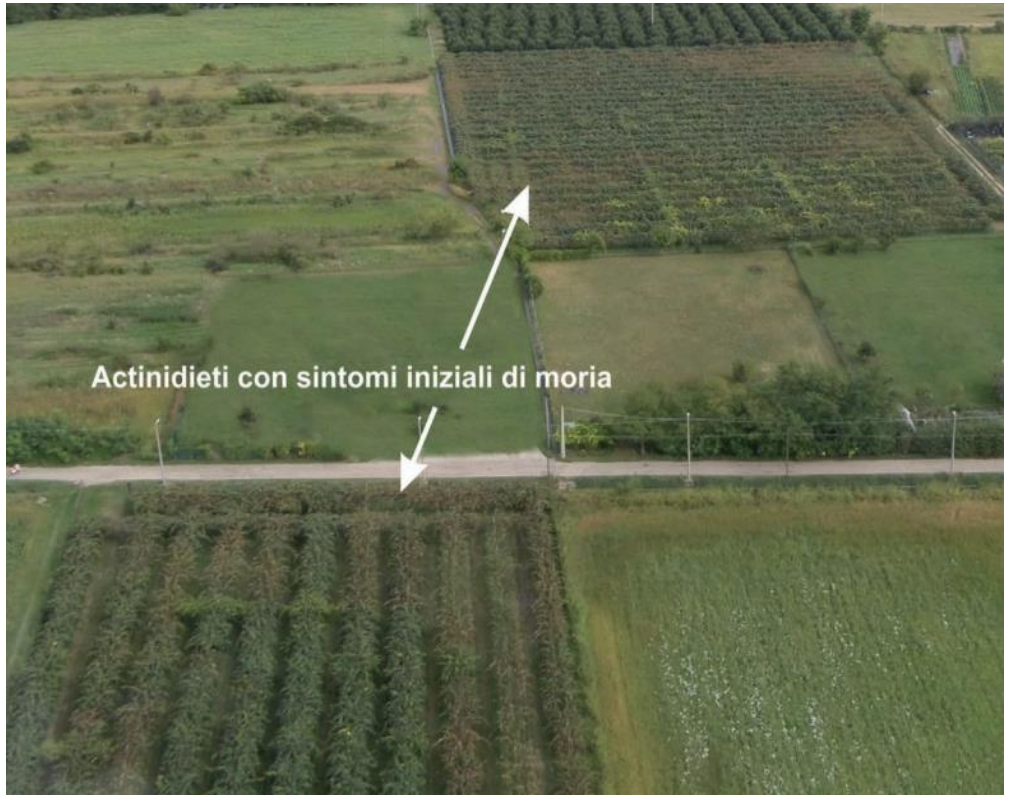
Some facts:

1. Vine loss reported in 2012 (~50ha)

2. severe vine loss ~ 2000ha to date

3. Affects all varieties

4. Decline is rapid



Symptoms:

vine discoloration

reduced vegetative growth

dieback

reduced fruit development

Effect on roots:

Root rot is widespread:-

reduced diameter

lack the fibrous feeder roots

Possible Causes:

1. **Pathogens**

> 50 symptomatic root samples - *Phytophthora*, *Pythium* and *Cylindrocarpon* species (70% samples)

But no one species could be consistently isolated and detection levels were often very low

2. Soil structure

Instances where half a block was hit without progressing to the other half - soil structure?

But soil analyses did not indicate any significant differences between symptomatic and non-symptomatic vines

3. Irrigation

Flood irrigation and water stagnation

But also occurs in orchards with micro jet irrigation, areas with well-draining soil and in the hills

4. Climate

Winter –spring of 2012-2013 and March 2014 were exceptionally wet

No freeze-thaw events during winter - soil remains full of water (reduced porosity and the availability of oxygen to the roots)

But in 2016 VVD is emerging rapidly with the increasing temperature, *and* there was less rain during the last season and winter

Research:

Biosecurity Portfolio:

~$16k to support research to identify any possible pathogens

New pathogen could be biosecurity threat

Already present pathogen – need to understand the conditions in which it becomes an emerging threat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Thank you