

Mapping Disease Movement in Texas Vineyards

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A Vine with Pierce's Disease



Progression:

Vine dead in
1-2 years

Rx:

No therapy

Cull vine

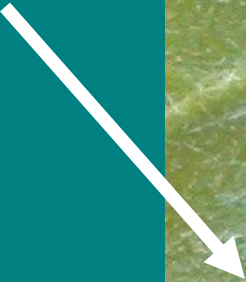


Very bad!

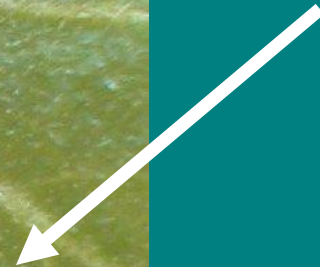
Bad

The Vectors

**Glassy
Winged**



Blue Green



Blake Bextine

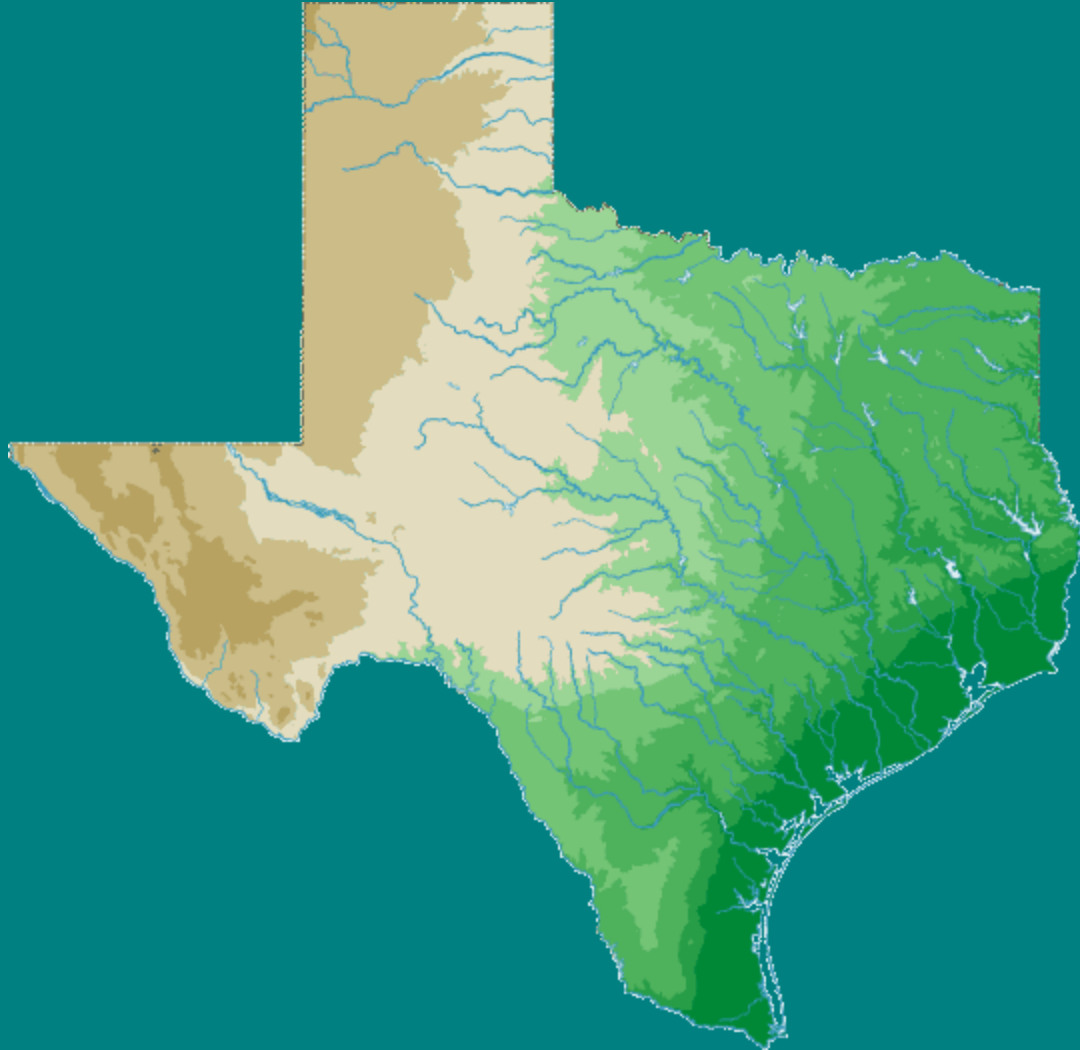
Funding for Pierce's Disease

- **Industry self-tax 2 million**
- **8 million from State**
- **USDA 22.3 million over 5 years**

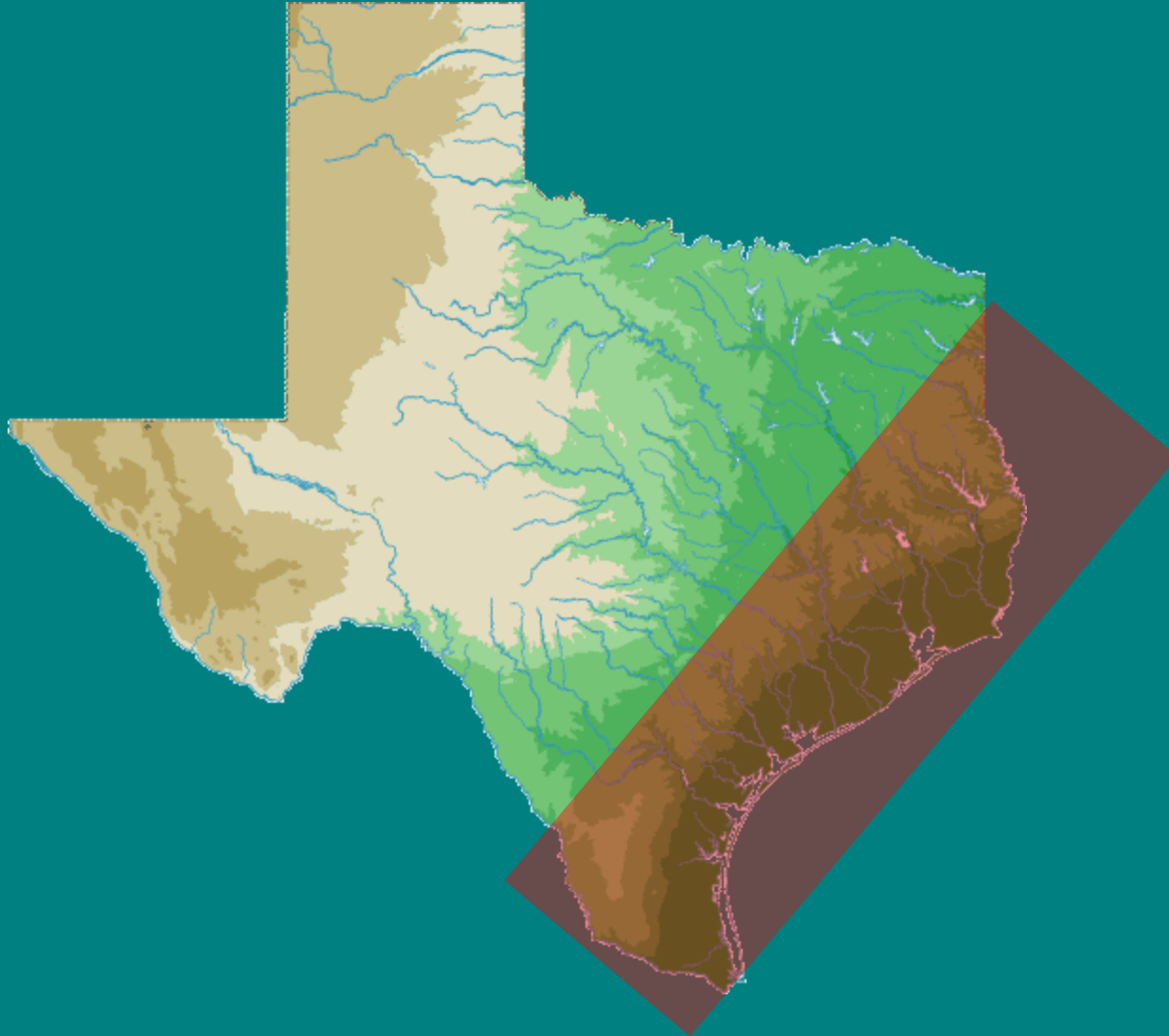




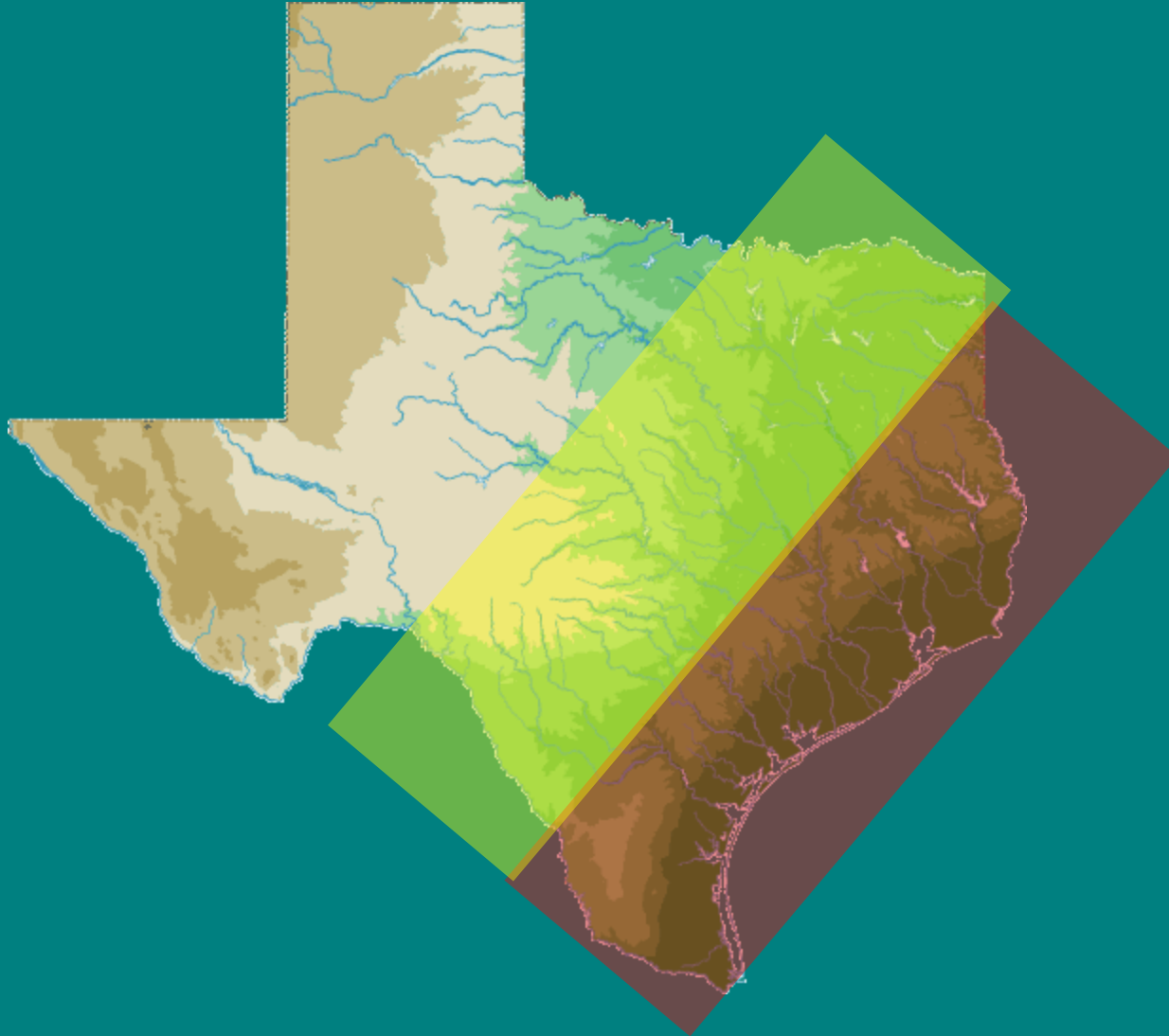
Pierce's Disease in Texas



Pierce's Disease in Texas



Pierce's Disease in Texas



Why look at genetics in Texas?

1. Describe strains

2. Plant/ strain relations

Plants to worry about

3. California vs. Texas

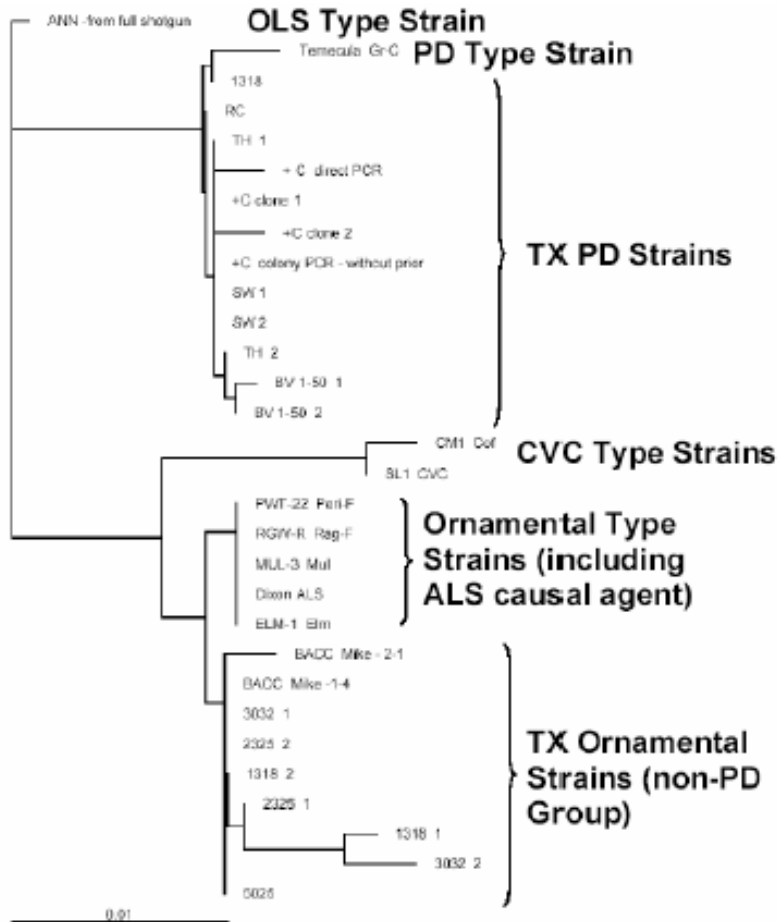
Natural History Information

4. Epidemiology

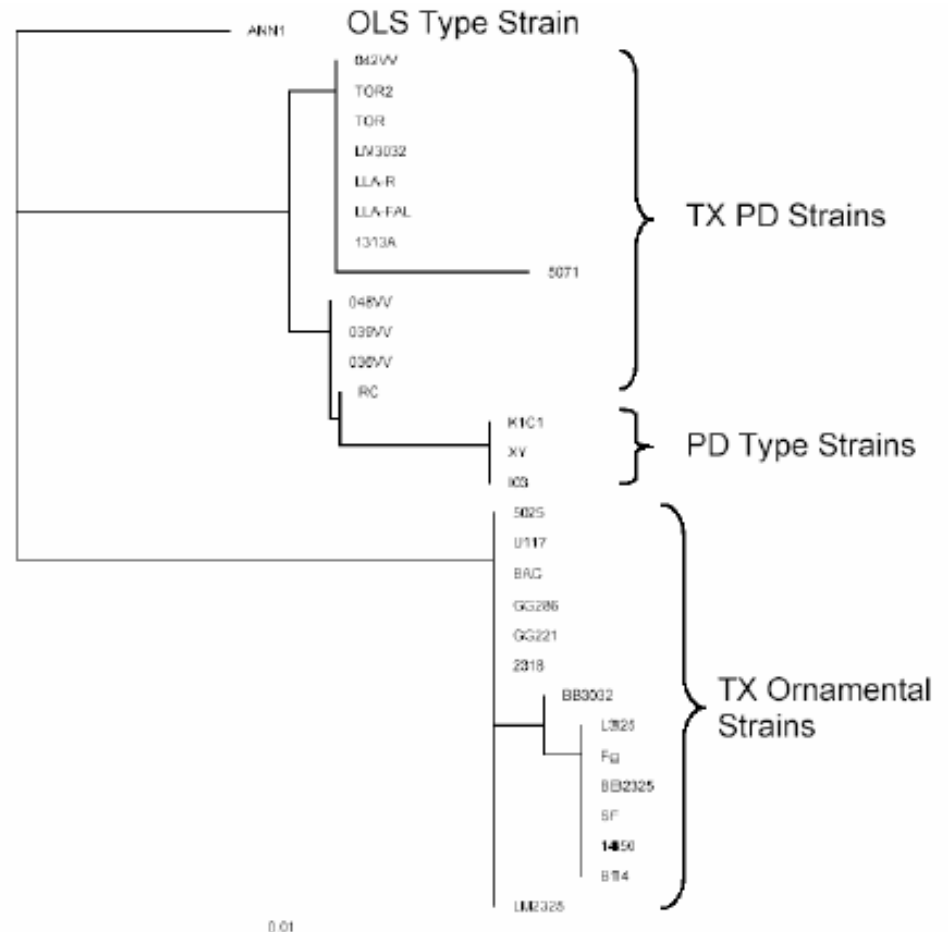
Need to understand to prevent spread

Phylogenetics of TX Strains

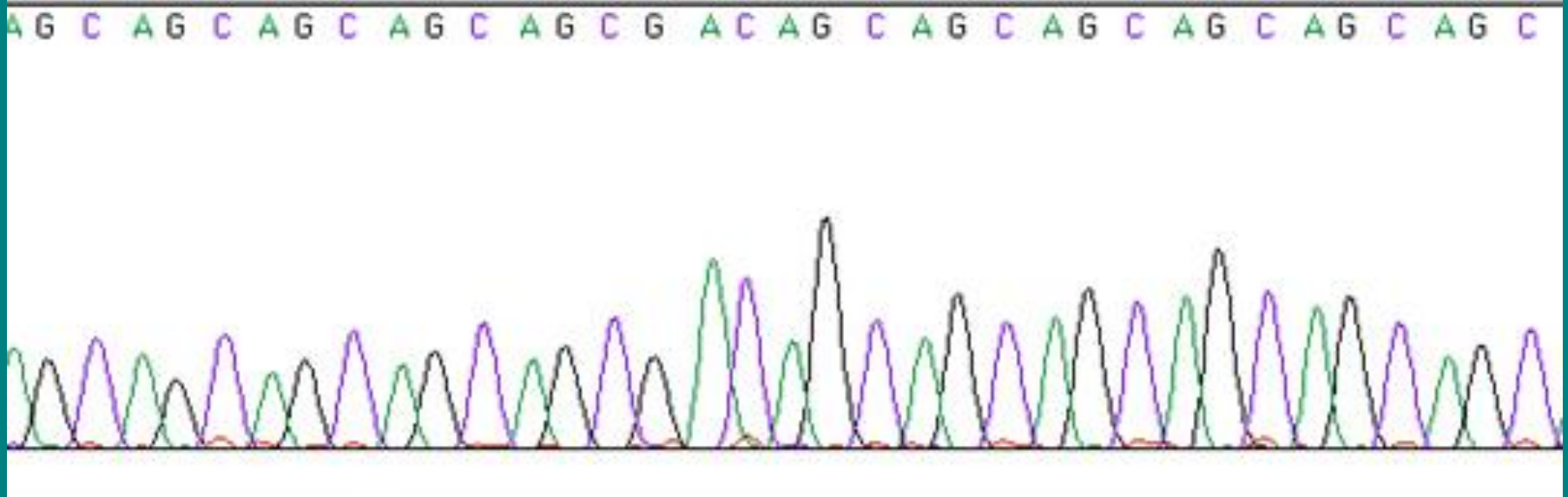
A. *gyrB*



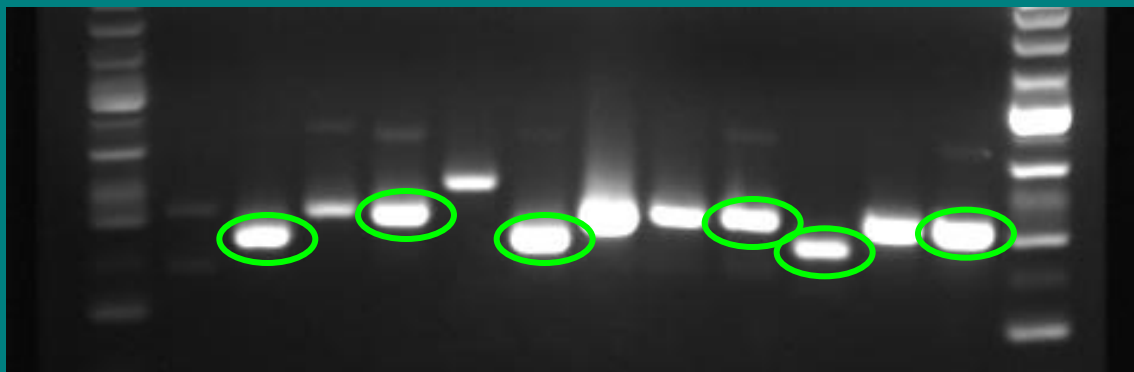
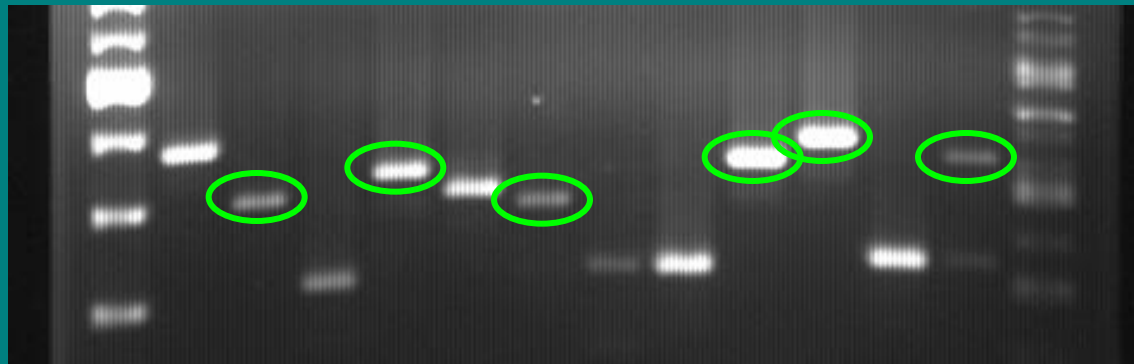
B. *mopB*



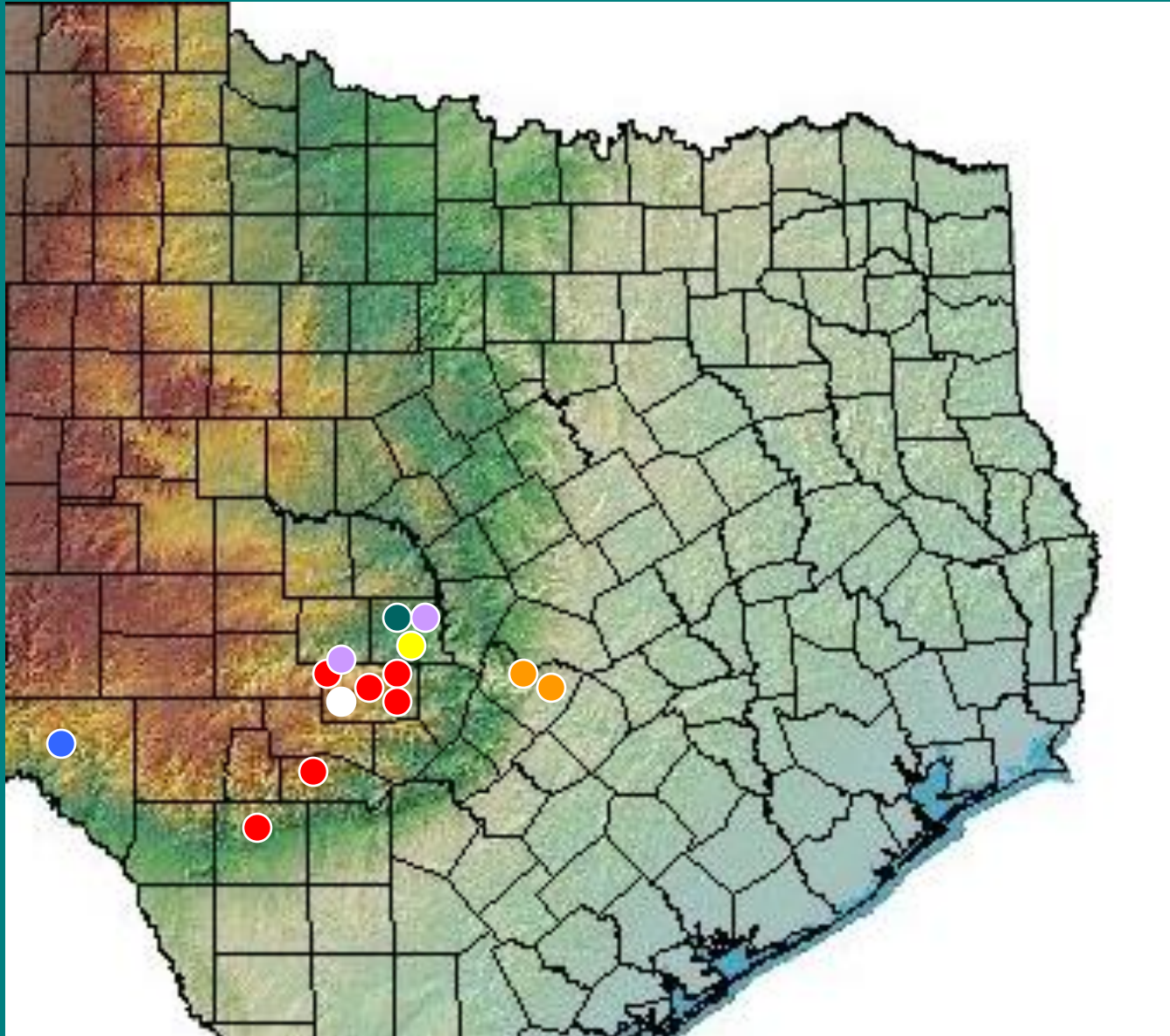
Fingerprinting



Grape strains



Fingerprint Matching of Grape Strains in Texas

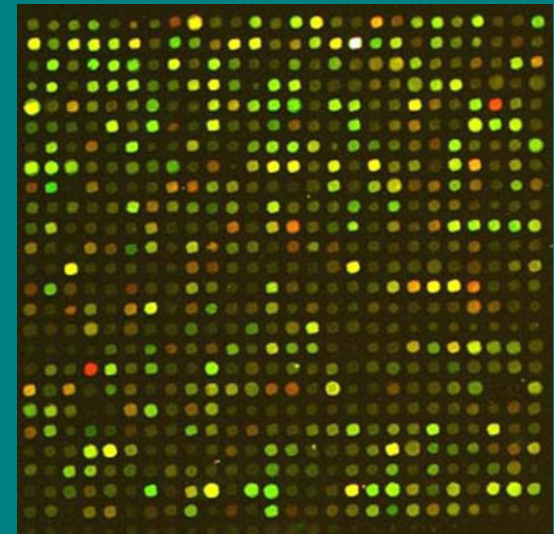


Genomics

- **study of the entire genome of an organism**
- **classical genomics = sequencing and comparing the genomes of organisms**
- **functional genomics = determining the expression of genes under various conditions**



<http://www.csee.umbc.edu>



Cyber Infrastructure

- Share information with other scientists easily (plant hosts, strains identifiers, genetic finger print info)
- Genomics comparisons between strains in different strains

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