

## Grapevine Yellows at Linden Vineyards

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Over the past two or three years Grapevine Yellows has gone from being a relatively minor problem to the most major viticultural threat we face at Linden. Linden Vineyards is located on the Blue Ridge Mountains in Northern Virginia. This is an attempt to document, communicate and to reach out to those in the industry who may have experience.

### History at LV

I have observed a limited amount of Chardonnay vines affected by Yellows since the early 1990's. Typically we would see only a couple vines out of a thousand. I recall seeing a stray Yellows vine of Riesling, CS and Petit Manseng in some years. We were not especially diligent about quick removal of the infected vines.

### Current situation

Over the last several years we have been losing about 2% of Chardonnay vines per year. They are grouped in mostly peripheral/border areas. Interior sections within blocks have much smaller infection rates. A block of Chardonnay planted last year (2010) had 1.0% infection this year.

Other susceptible varieties such as CS and Petit Manseng have had very low rates (less than 0.1%) until this year (2011) where we are seeing rates up to 0.5%. We see an occasion Riesling and Merlot with Yellows. So far there are no observed Yellows in Petit Verdot, Cabernet Franc, Carmenere, Vidal or Seyval.

### Action being taken

We are now being much more diligent and systematic about removing vines with symptoms. In the past we did not necessarily remove entire vines of CS or Merlot in the hope that they could recover. Where this may be true, one has to believe that these vines could remain as symptom less hosts to spread the disease.

Where possible we are removing potential non-vine hosts such as ornamental cherry trees and wild grapevines. Since 2003 I have greatly reduced herbicide use, sowed grass and wildflower cover crops and allowed a diversity of native weeds to grow. Could this be a contributing factor?

### Leafhopper (vector) sprays

Because of the seriousness of the problem, I have gone from a very "non-interventionist" insecticide spray program to a hail-Mary leafhopper eradication program.

From the mid-1980s to the early 2000s we would spray Sevin, Guthion, Danitol or Imidan one to three times a season for control of cutworms, flea beetles, Japanese beetles and/or grape berry

moth. These are broad-spectrum insecticides and would also provide some unintended control of leafhoppers, although the timing would be fairly random. In the last 10 years I have used few or none of these products. The only insect we have consistently controlled has been GBM with Confirm, Intrepid or Delegate which do not control leafhoppers. I have noticed an increase of populations over the past several years. Last year, after bloom it was evident that Yellows was getting out of control, I began spraying Prey (Provado generic), but only in the Chardonnay blocks.

This year I started spraying Prey in the Chardonnay, but once it became evident that Yellows was spreading to other varieties, I now spray the entire vineyard. I will use Prey early in the season (through post bloom), and then switch to Danitol or Sevin at cluster close. The change is because of concerns about Prey resistance and to also control GBM and Japanese beetles. I may finish the season using Nexter, which controls leafhoppers and the mites that may increase in population due to the use of Danitol and Sevin. This “nuke'em” approach is something that I disdain, but I feel backed into a corner as we do not yet understand which leafhoppers (and therefore their lifecycles) may be the Yellows vectors.

Future:

I have put future plantings of Chardonnay on hold. If I lose Chardonnay to Yellows it leaves Hardscrabble (Linden's Estate vineyard) without a premium white variety. For this reason we will begin planting Sauvignon Blanc (and some Semillon) next year.