importantly, it survived in Victoria, TX, in a region of high pressure from the devastating Pierce's disease. This survival (be it tolerance or resistance), and the substantial lack of Pierce's disease resistant table grape varieties, contributed to the release decision.
'Victoria Red' has red berries, but not highly pigmented (Fig. 1). The flavor is generally neutral, not a strong fruity flavor as many eastern US grapes exhibit. It has been planted to a limited extent across the South as a local-market option by table grape growers.
In 2017, Martha and Friench Tarkington, owners of Tarkington Vineyard, who were involved in the evaluation of 'Victoria Red', evaluated its potential for wine. They processed just under 70 lbs of fruit that was harvested on June 17, which was at least 2 weeks early (normal harvest date is July 4-6 in Victoria).

At harvest, it had a composition of 15.5 Brix (percent soluble solids), pH 3.8, and titratable acidity of 0.9%. They cold-soaked the berries for 1 day, with skin contact. This quantity of fruit yielded 7 gallons of juice. They then followed normal white wine procedures including pressing the berries prior to fermentation and fermenting the juice at 55F. Their fermentation was complete on July 5. The wine was bottled after cold stabilization for several months, and in January, 2018 the Tarkingtons evaluated the finished, bottled product. They thought the largely dry wine had a very nice character. Friench and Martha were so excited with their product that they entered it in the San Antonio Regional Wine Guild Competition held February 17, 2018. To their surprise and joy, their 'Victoria Red' wine earned first place in the dry white wine category! The judges gave the wine a score of 19 out of a possible 20 points with favorable comments. The wine barely missed best of show. Many of the competing wines were made from Vitis vinifera varieties. They comment that the finished product is not completely dry, but rather has a slight tinge of sweetness remaining.

The Tarkingtons are going to make wine from 'Victoria Red' again, and are very excited about finding this additional use for this table grape. I thought this story was worth sharing with their neighbors across the South.

Figure 1: *Fruit of 'Victoria Red' table grape.*

Major Eriophyoid Mites Species Transmitting Viruses in Blackberry and Raspberry

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Eriophyoid mites are the smallest phytophagous arthropods known to date. With body length averaging of 200 microns (≈0.008 inch), they are hardly visible to the naked eye (for size comparison, a human hair is about 80 microns across). Their microscopic size allows eriophyoids to enter and utilize niche habitats in plants, not available to larger arthropods, but also makes them difficult to study. Among members of the subclass Acari (mites and ticks), eriophyoids are considered only second to spider mites when it comes to crop losses. Moreover, the ability of some to transmit viruses makes them even more important as plant pests. Here we focus on three among 45 species infesting *Rubus*. Those species play key role in virus epidemics; some aspect of their biology, injuriousness, and pest management are discussed below.

***Phyllocoptes gracilis* (Nalepa, 1890)** (Fig. 1) Reported in North America, Europe, and Asia, *P. gracilis* also called “raspberry leaf and bud mite” is playing a key role in a complex disease called raspberry leaf blotch disorder (RLBD), an important *Rubus* disease in Europe. Yellow blotching on raspberry leaves are the first symptoms of the disease (Fig. 2). As a result, overall plant growth is reduced. Raspberry leaf blotch virus (RLBV) is the causal agent of the disease, and it is vectored by *P. gracilis*. So far the virus has not been observed in the United States, however the mite is widespread in many states, with reports from Arkansas, California, Oregon, Washington. A single *P. gracilis* female may start the new population as well as transmit the virus. Therefore, special precautions should be applied to plant material imported from countries where RLBV is present, especially Europe.

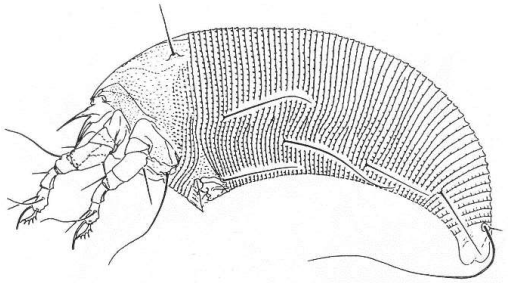

Figure 1: *Schematic drawing of Phyllocoptes gracilis female, lateral view (courtesy of Aoxiang Shi)*

Figure 2: *Early symptoms caused by raspberry leaf blotch virus (RLBV) on raspberry*

P. gracilis overwinter under bud scales, petiole scars, and crevices of the primocanes. In spring, mites emerge from overwintering sites and migrate to new shoots (floricanes) where they live within the layer of tomentum (fine hair on the lower leaf surface). When leaves mature, mites move to primocane leaves. Also, the berries become infested when population density on leaves reach high levels. Population density increases during spring and summer, reaching a maximum in mid-summer on the floricanes (at fruit ripening) and in early fall on primocanes. It takes about 14 days at 25°C (77°F) for the mite to complete its life cycle (egg→larva→nymph→adult), and therefore many generations may develop during the growing season.

Of the varieties sampled in the UK, ‘Glen Ample’ and ‘Octavia’ were the most commonly infected. Interestingly, transmission experiments through grafts and mites suggest that RLBV has limited ability to move within the plant in the absence of mites and therefore, virus infection does not persist between seasons. This suggests that effective acaricide treatment may prevent RLBV infection and control the virus. More research is needed to determine effective chemistries against *P. gracilis* as well as parameters for spraying (trigger, number of sprays, spray intervals). There is no knowledge the efficacy of natural enemies against *P. gracilis.*

***Acalitus essigi* (Hassan, 1928)** (Fig. 3) Reported from Europe, the Americas, and Australia, *Acalitus essigi* also called "blackberry mite" was assumed for a long time to cause redberry disease of blackberry, due to injection of toxic saliva into developing druplets during feeding. Some of the druplets remain greenish or reddish and hard, while other ripen normally. Fruit damaged by *A. essigi* feeding is unmarketable and can result in 10 to 50% loss. In a worldwide survey of commercial blackberry production, *A. essigi* was reported as an important pest in California, Oregon, Germany, and Hungary. Recent research has demonstrated that effective control of mite did not result in prevention or reduction of redberry symptoms, therefore the main contributor to the disease is yet to be characterized. Further studies revealed the presence of at least five viruses in redberry-affected blackberry

samples, with three being new to science. Further studies are needed to understand whether any of these viruses are associated with redberry disease and *A. essigi*.

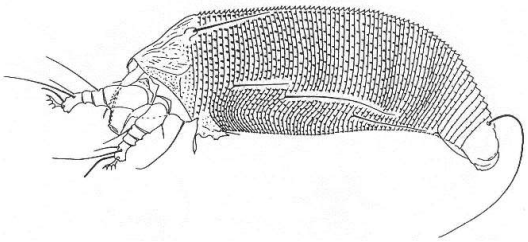

Figure 3: *Schematic drawing of Acalitus essigi female, lateral view (courtesy of Aoxiang Shi)*

Females overwinter in crevices around bud scales, between the petioles and stems, between bud scales and occasionally on damaged fruits. They emerge in early spring and move towards the developing flower buds, and later to the bases of leaves and green berries. They live between drupelets of the berries until late summer or early winter, when they migrate back towards overwintering sites or stay on the berries until these start to rot. Population density on fruits reaches its maximum in late summer or early fall. No quantitative information is available on the number of generations per year or the time necessary for the development from egg to adult. Codacide oil treatment supplemented with abamectin as well as Sulphur sprays were reported being most effective against *A. essigi* in studies in the UK. The population-dynamic studies conducted in Hungary showed that there were two periods crucial for successful control of *A. essigi*: 1) end of winter dormancy before the mites lay eggs and, 2) from bud stage till flowering when the mites are migrating. Studies conducted in California showed that cutting back the canes after the last harvest in late fall or early winter would greatly reduce *A. essigi* habitat, preventing populations from overwintering and building up over time, as is suspected to be the case with floricane fruiting cultivars. All plant residues should be removed from the field to minimize *A. essigi* survival in drying and dead plant parts and subsequent migration of mites to new spring growth. *Neoseiulus californicus* (Acari: Phytoseiidae), a predatory mite has potential as a biological control agent against *A. essigi*.

Figure 4: *Typical symptoms of blackberry yellow vein disease*

***Diptacus* sp.**

Blackberry yellow vein disease (BYVD; Fig. 4) is the most economically important virus disease in the southern United States. At least ten different viruses among over 40 reported in *Rubus* are associated with this complex disorder. One of the key contributors to the disease, blackberry leaf mottle associated virus (BLMaV) was recently characterized and successfully transmitted by yet undescribed eriophyoid species belonging to the genus *Diptacus*. The species is twice as large as *P. gracilis* and *A. essigi*, and in contrast to the other two, is a vagrant (free-living) species. Vagrant species are characteristic for their darker body color in comparison to those living hidden on plant and not exposed to direct sunlight. Change in color is especially evident in adult specimens of new the new species, as they turn from light brown to almost black. There are no studies yet showing times necessary for development or reproductive potential of a new species nor is there knowledge on the susceptibility of a new species to particular acaricides. These species has been already reported from different areas of the U.S. transmitting BLMaV, with incidence greater than 40% in BYVD-affected plants. BLMaV is highly underreported, and there are no studies available yet to show its true

distribution. This is also true for the mite, as the faunistic studies on *Rubus* eriophyoid fauna were never conducted in the United States.

Alion Herbicide Cleared for Use in Blueberry and Caneberry

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Alion herbicide was developed by Bayer Crop Science and it contains the active ingredient indaziflam which was originally introduced into the market place as a preemergence herbicide for use in citrus, pome, and stone fruit plantings. The uses of Alion have since expanded and most recently a supplemental label for use in blueberry and caneberry plantings was approved.

The blueberry and caneberry supplemental label can be found at www.cdms.net and the user must have a copy on hand to legally use the product in these crops. Alion can be used in blueberry plantings established one year or longer while caneberry plantings have to be established three years or more. The label restricts its use to allow a dormant application from late fall thru winter prior to bud swell. If more than one application is applied there must be at least 90 days between applications.

The use rate ranges from 3.5 or 5 fl. oz. per acre per application (with a maximum of 7 or 10 fl. oz per acre on an annual basis). Alion rates are variable due to differences in soil organic matter. The higher rate is to be used on soils having more than 1% organic matter while the lower rate is allowable on soils containing less than 1% organic matter. Alion cannot be used in sand soils or soils with a greater than 20% gravel content.

Long term residual control of numerous annual broadleaf and grass weeds is the norm for Alion. If the dormant period is long enough to allow two applications to be made 90 days apart you can expect residual control of susceptible weeds to persist for 12 weeks or longer after the last application. Unlike some other preemergence herbicides, Alion provides no postemergence activity and therefore will not aid non-selective postemergence herbicides in the management of difficult to control species.

Grape Chores

Cain Hickey
University of Georgia

Bud break is upon us in many, but not all, bunch wine grape vineyards here in northern Georgia; we are seeing 1.0-1.5” shoot growth in warmer regions. Earlier cultivars are likely also swollen or breaking in NC and TN, particularly in warmer regions. However, I have recently heard reports of bud break occurring in Chardonnay even in western NC. Virginia is likely at least three to four weeks out from seeing any bud break in bunch wine grape vineyards. Southern Georgia muscadine vineyards started bud break about two weeks ago (see picture from Still Pond Vineyard and Winery); bud break is fast approaching here in muscadine vineyards in the Georgia piedmont. Given the recent cold weather, many frost/freeze events have recently occurred here in the northern third of Georgia; two more are forecasted to occur over the weekend and into early/mid next week. While things might slow down a bit given our current weather patterns, the next consistent stretch of warm temperatures will likely get things moving in earnest in vineyards all over the southeastern US. The following grape chores will last through late June/early July, when the next Small Fruits newsletter will be released through the Southern Region Small Fruit Consortium website (www.smallfruits.org).