

“Single Plant Selection as the Basis for Foundation Clones” Question-Answer Period

Devin Cooper: Could you comment on the differences between the ‘Shirofugen’ and ELISA tests?

Mike Cunningham: The ‘Shirofugen’ index only works with *Prunus* necrotic ringspot and prune dwarf. ELISA will diagnose those, but it will also detect a whole range of leaf roll and fan leaf viruses in grapevines that ‘Shirofugen’ is not sensitive to. ‘Shirofugen’ is not as specific as ELISA. When ELISA shows a positive result it indicates the presence of a specific antibody that is specific to a particular virus. ELISA is a 1- to 2-day project while ‘Shirofugen’ cherry is a 30-day project.

John Dixon: Why ‘Shirofugen’ over other cherries?

Mike Cunningham: I don’t know. The ‘Shirofugen’ test was established by George Nyland several years ago. Apparently, there is something unique to ‘Shirofugen’ that is missing in other cherry genotypes.

Don Dillon: Do insect or other vectors pose a risk to reintroduction of viruses in your foundation planting and, if so, what can you do about it?

Mike Cunningham: They do. Each crop is different. Strawberries have to be kept indoors because aphids can carry viruses of strawberry very readily. For grapevines, current work at the Foundation Plant Materials Lab indicates that mealybugs can carry leafroll viruses, but it’s not known to what extent it happens in nature. In the grapevine certification program, there is an isolation distance of 100 ft to prevent the spread of diseases by nematodes. Fruit and nut tree species are a different story because prune dwarf and necrotic ringspot are pollen-transmitted viruses vectored by bees. The current isolation distance is 1/2 mile since ELISA testing can effectively and easily monitor the occurrence of viruses on an annual basis.

Phil Barker: Is this program being done in other parts of the country? And, do you envision this program eventually being adopted for landscape trees?

Dale Kester: This is a unique program to California. However, the same basic program and procedures are being used all over the country and elsewhere around the world. You need to make a distinction between a specific registration and certification program and a virus-control program. It can be done without necessarily having regulations; it can be left up to the individual state and/or individual nurseries. The principles would basically be the same. Now, with shade trees, as more trees have been clonally propagated these problems have occurred and as they do you must respond to them. Eventually, as shade trees are clonally propagated especially with the use of rootstocks, you can expect that sooner or later something is going to come along and cause serious problems.