

Survivable



Cordon showing healthy phloem, vascular cambium and xylem.
4-11-2007, Yadkin Valley, NC

Phloem is the tissue that transports sugars formed by photosynthesis to the roots.

Xylem is the tissue that generally transports water and other root sourced materials to the upper portion of the vine.

Vascular cambium is the tissue that produces the phloem and the xylem. Phloem is produced towards the outside and xylem is produced towards the inside of the cordon with the vascular cambium sandwiched between the newly generated tissues.

Survivable



Cordon showing healthy xylem that is conducting water (at sap flow stage). The brown ring of tissue just under the bark area shows dead phloem and vascular cambium. 4-11-2007, Yadkin Valley, NC

Not survivable



Cordon exhibits not only dead phloem and vascular cambium, but also dead xylem tissues. Wood has begun to dry out. 4-30-2007, Haw River Valley, NC. Note, this particular variety has some Muscadine parentage.



One-year old vines that were not in a grow tube during the freeze. 4-30-2007
Haw River Valley, NC.



Healthy flush of new growth from cordon. Dead cordons should be removed. Allow shoots to grow above cordon wire until pencil sized. Then just gently lay them over. If vine vigor was high before the freeze and new shoots are pushing hard, leave more than two shoots to dilute the vigor. Otherwise, vine will develop two bull canes that will be susceptible to fall and winter injury. 4-30-2007, Haw River, NC



Basal crown bud pushing. 4-30-2007,
Haw River Valley, NC



Note gradation in tissue color (bright green, to olive green to tan) from mid-upper picture to the cordon. 4-30-2007, Haw River Valley, NC



Sucker pushing from rootstock. There is also a small shoot pushing from the scion variety. Remove the rootstock suckers unless scion variety is too injured to recoup. 4-30-2007, Haw River Valley, NC



Sucker pushing from rootstock. There is also a nice shoot pushing from the scion variety. Remove the rootstock suckers And begin restructuring vine.
4-30-2007, Haw River Valley, NC



Survivor.
4-30-2007, Haw River, NC
Niagara



Injured phloem, vascular meristem and xylem. Note, brown streaked area is Injured or dead xylem tissue. Note water soaked appearance of trunk tissue in center of photo. 4-18-2007, Yadkin Valley, NC