



Making Decisions After Winter Damage!

Prepared by

Dr. Kevin Ker, P.Ag. and Ryan Brewster of KCMS Applied Research and Consulting

February 2011©

Recent cold temperatures experienced in January have reminded us about the importance of dealing with vine injury and not repeating some of the errors made after injury we received in 2003 and 2005. Additionally, 2010 revealed erratic bud break and growth in the spring on a number of older vines (predominantly Riesling but a few other cultivars at some locations) that can be attributed to cumulative winter injury to trunks which finally resulted in vine collapse or death. One might think of this as death by a thousand cuts or repeated exposure to cold temperatures resulting in partial death of tissue or injury to the trunk but no single event that killed the entire trunk.

Before pruning injured blocks or replanting some hard decisions need to be made and reviewed – now is the chance before spending money needlessly

1. Site
 - a. Does my site climate really support this cultivar?
 - b. What is history of yield/fruit quality – does it meet buyer needs and economic profitability?
 - c. What is likelihood of repeat weather events? Can I mitigate them (Can I use wind machines or other practices? Do I have inversions? Is my topography limiting?)?
 - d. Is there a pattern to damage? Are the vines frequently subject to stress (drought, saturated soils, soil limitations, etc)?
2. Potential improvements
 - a. Can I modify the site to reduce risk? Is it economically feasible?
 - b. Can I eliminate stresses easily and economically (irrigation, tile drainage, soil amendments, etc)
3. Vine Management
 - a. Am I hilling where possible?
 - b. Is it feasible or desirable to bury vines and or canes?

- c. Were the vines subject to other controllable stresses (excess disease or pest problems, weed competition, etc)?
 - d. Were the vines in balance (too much or too little crop, excessive shoot growth and laterals, presence of bull wood or long internodes, too many blind and short, etc)?
 - e. Can I correct the problem with more or better labour or better timing of good cultural practices?
4. Vineyard /Business condition
- a. Am I growing the right clone/cultivar? What is the future for this cultivar? Are better clones/rootstocks available to make it more profitable?
 - b. Do I have the right spacing for this site? Can I use or convert easily to a better (more productive or cost effective) /less risky training system?
 - c. What is the state of my wire/posts etc?
 - d. Are there sections that are chronically underperforming and actually cost more to grow than revenue received? Should these be pulled out and left open?

At KCMS Applied Research and Consulting, we follow a similar sampling procedure that is used by universities, research and extension agencies in Canada and the US. For each cultivar in a suspect block, it is necessary to take sample canes to determine percentage of primary bud survival. We do not assess for secondary bud survival as pruning decisions for crop levels and overall vine health is best estimated from primary buds and most efficient use of time. For site specific assistance (fee for service) contact us at ryanb@kcms.ca or 905 688-8180 or 905 892-7050. To see our regional data go to our website (www.kcms.ca/research.asp) or CCOVI VineAlert (www.ccovi.ca/vine-alert)

If you have blocks or cultivars that you suspect some degree of cold damage, it is highly recommended that you do some preliminary assessment of bud survivals for each cultivar in suspect blocks.

1. Select 10 to 12 canes (no more than 1 cane per vine) from across the cultivar you wish to assess. If there are obvious topographic differences of vine size differences you may need to take two samples but try to sample to represent the area for which you want information. Trim the sample cane to between 12 and 15 buds (up from the base).
2. Hold for 24hours to 48 hours at room temperature before evaluating. This allows for oxidative actions to take place and the damaged bud growing points to turn brown.
3. Cut buds at proper depth to establish whether the growing point (meristem) of the primary bud is intact (green) or injured (brown →black).
4. Record the information for each cane and collectively for each cultivar sample.