

**Texas A&M University / Texas Tech University
2003 Grape Research and Extension Activities**

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1) Deficit Irrigation: Ed Hellman, Ashley Basinger, Steven Shelby

This study was initiated in 2002 to examine the effects of Partial Rootzone Drying (PRD) and Regulated Deficit Irrigation (RDI) on yield, fruit chemistry, and grapevine cold acclimation. The relationship of water stress-induced ABA content to cold acclimation and hardiness is also under investigation.

Results are presented for 2002. PRD had no significant effect on yield, cluster weight, berry weight, TA, and pH. However, the 2X treatment, which provided nearly full replacement of water lost to evapotranspiration, had significantly lower sugar content (more than 1° brix) than the PRD and equal volume (both-sides) treatments. Periderm development was delayed on the 2X treatment compared to PRD and the equal volume treatments. Regulated deficit irrigation during the fruit-set to veraison period significantly reduced cluster weight with a trend toward reduced yield. Sugar content was significantly higher for this treatment, and shoot acclimation was advanced. Nearly 60% of the internodes per shoot displayed periderm on 24 July, compared to 24-32% for non-stressed treatments. Research is being repeated in 2003.

2) Pierce's Disease: Jim Kamas, Ed Hellman, David Appel, Mark Black, Forrest Mitchell, Lisa Morano, Lloyd Wendel. Texas A&M, Texas Tech, University of Houston, Downtown, and USDA-APHIS

A multi-agency, multi-disciplinary team was assembled in 2003 to investigate Pierce's Disease (PD) and insect vectors in Texas. Objectives include a survey of vineyards for incidence and severity of PD; year-round insect surveys; assays of sharpshooters for presence of *Xylella fastidiosa*; assays of native *Vitis* spp. and other flora for presence of *Xylella*; investigate epidemiology of PD.

3) Winegrape variety trial: Ed Hellman and Steven Shelby

A variety trial is being established at the Lubbock Agricultural Research & Extension Center. Varieties under test are primarily "hot-climate" varieties. Several varieties that are commonly grown in west Texas are included for comparison. Evaluations will be conducted on vine adaptation, yield, fruit quality, and wine quality.

Winegrape Variety Trial – Lubbock AREC		
Aglianico	Muscat blanc	Souzao
Cabernet Sauvignon	Nebbiolo	Tannat
Carignane	Orange Muscat	Tempranillo
Carnelian	Primitivo	Tinta Amarella
Chenin blanc	Petit Verdot	Tinta Madeira
Grenache	Rkatsiteli	Tinta Roriz
Lemberger	Ruby Cabernet	Tinta Cao
Malbec	Sangiovese	Touriga Nacional
Malvasia bianca	Semillon	Trebbiano
Mataro	Shiraz	Valdepenas
Montepulciano	Syrah	Viognier

- 4) Texas Winegrape Network website – Ed Hellman and Jim Kamas
<http://winegrapes.tamu.edu>

This comprehensive website delivers research-based information for grape growers. Although the principal intended audience is Texas growers, most of the material is applicable to growers throughout the country. The website offers more than 25 fact sheets and 40-plus resource pages containing selected links to credible information sources. Some of the unique aspects of the website include the dynamic features “Viticulture Quote of the Day” and “Headlines and Highlights”. The Texas Winegrape Network also sponsors the Viticulture Discussion, a popular listserv on commercial grape growing that has more than 400 subscribers from 20+ countries.

Grants Funded Recently:

Evaluation of the effects of two deficit irrigation strategies on grapevine cold acclimation, hardiness, growth, yield, and fruit quality. Viticulture Consortium.

Pierce’s Disease Research in Texas. USDA-APHIS.

Graduate Students:

Ashley Basinger (M.S., Plant Science) Texas Tech University. Deficit Irrigation.

Mandi Vest (M.S., Plant Pathology) – Texas A&M University. Pierce’s Disease