



Advancing a Legacy

The Zinfandel Chronicles

Preserving Heritage,
Promoting
Excellence

The Zinfandel Heritage
Vineyard Project

Preserving Heritage; Promoting Excellence

The Zinfandel Heritage Vineyard Project



The Project

The Zinfandel Heritage Vineyard Project is an unprecedented collection of rare and famous Zinfandel vine cuttings grown throughout California. It was originally established at the University of California at Davis (UC Davis) Oakville Research Station in Napa Valley beginning in 1995. Zinfandel is now renowned as America's Heritage wine, but it first developed a reputation for fine wine as early as 1860 in California's North Coast Region. Vintners had planted more than 34,000 acres of Zinfandel by 1990, and that number swelled to 50,000 acres by 1998. The varietal was poised, but not prepared, to begin a renaissance. While Zinfandel wines had achieved a place among the world's finest

Foundation Plant Services (FPS)

Foundation Plant Services at UC Davis is charged with the responsibility to introduce, test and release grapevine selections to the wine industry. FPS evaluates selections to produce "clean stock" through its nursery partners, providing the basis for California's grapevine supply. A critical partner in the Zinfandel Heritage Vineyard Project, FPS also contributes original research regarding grapevine pathogen detection and elimination.

varietals, growers and vintners were unhappy with the selections of vines available commercially. The UC Davis Foundation Plant Services (FPS), which evaluates and virus-tests rootstock for commercial distribution, had only certified four selections of Zinfandel in 1990. While these had successfully produced popular White Zinfandel wines, many thought they were not as well-suited to making a fine red wine. Red Zinfandel wines had grown in popularity, but without additional rootstock to infuse some diversity, expansion of the varietal would be stalled.

The Zinfandel Advocates and Producers (ZAP) recognized the importance of the ongoing research at UC Davis in creating greater diversity for growers, and partnered with the University to support the Zinfandel Heritage Vineyard Project.

The Zinfandel Heritage Vineyard Project has been a fruitful collaboration with a primary goal to provide superior Zinfandel selections to growers as the basis for future plantings; and in 2009 UC Davis FPS released 19 Zinfandel selections to nurseries. While these selections require more evaluation in traditional Zinfandel growing regions, they hold a promise to strengthen the reputation of

Zinfandel as the premier historic winegrape of California. Together UC Davis and ZAP continue to work toward preserving Zinfandel's heritage while expanding the range of rootstock available to growers.

At the outset of the project it was clear that there were very significant differences in the quality of the wines currently being produced and available to the consumer, despite the lack of variety among Zinfandel selections available to growers. This could be attributed to three things:

Genetic material – Clones that originated through natural mutations which occurred in buds and expressed themselves in different shoots on a vine or different vines within a vineyard. These could be maintained as new selections if they were identified and vegetatively propagated.

The growing environment – *Terroir* or soil type, slope and aspect, climate, sunlight, and other site factors could influence growth, ripening and final wine composition.

Vine and wine management – Training and cropping levels, fermentation temperature, yeast and barrel aging, winemaking skill and experience, and equipment all could affect perceived quality.



The Research

UC Davis Viticulturist Dr. James Wolpert, along with the UC Davis Department of Viticulture and Enology and UC Extension Viticulturist Emeritus Amand Kasimatis understood that the most effective way to improve Zinfandel would be to go back to its origin to make selections for replication. This model had worked for other varieties but it wouldn't be so simple for Zinfandel because the origins of the varietal were just becoming known. The Primitivo variety in Puglia, Italy, was found to be genetically identical to Zinfandel; however, Italians were sure it was not one of their traditional varieties. Additionally, no one organization had done much work to search for varietal variability. Zinfandel was found to be identical to the Croatian winegrape Crljenak Kaštelanski but the remaining vines discovered in the region were scarce and not found in commercial vineyards. Along with Sonoma County Farm Advisor Rhonda Smith and Napa County Farm Advisor Ed Weber, Wolpert and Kasimatis took what they called "Zinfandel Safaris" to

more than 100 vineyards throughout California to collect selections for the Zinfandel Heritage Vineyard Project. The initial selections were based on a few criteria: vines had to be older than 60 years; carry small berries and loose clusters; and be free of visual "red leaf" symptoms, which could indicate leafroll or corky bark viruses. Research on 90 selections from 50 vineyards in 14 counties was conducted in three phases at the Oakville Experimental Vineyard beginning in 1995.

"The Heritage Vineyard is a vibrant 'ongrowing' museum of the grape," says Jim Wolpert, who directs Heritage Vineyard research.

"The Vineyard is of tremendous historical and viticultural interest to those fascinated by Zinfandel. For the consumer, the vineyard is living history and provides an easily accessible demonstration of where Zinfandel is really made—in the vineyard. For the wine industry, it has special significance because it represents a resource for future plantings of Zinfandel with a broad range of selections."

Oakville Experimental Vineyard

Beginning in 1995 and consisting of three phases

Phase I: "Library" planting

Seven vines from each of 90 unreplicated selections were planted to test the question of significant variability in Zinfandel. FPS conducted molecular virus testing to allow for selection for Phase II.

Phase II: Replicated Planting

Fewer selections with more vines were planted to provide the basis for research into clonal performance and allow for winemaking on an industry-size scale. Screening required by the California Department of Food and Agriculture was conducted to allow for certification and release to nurseries.

Phase III: Outreach

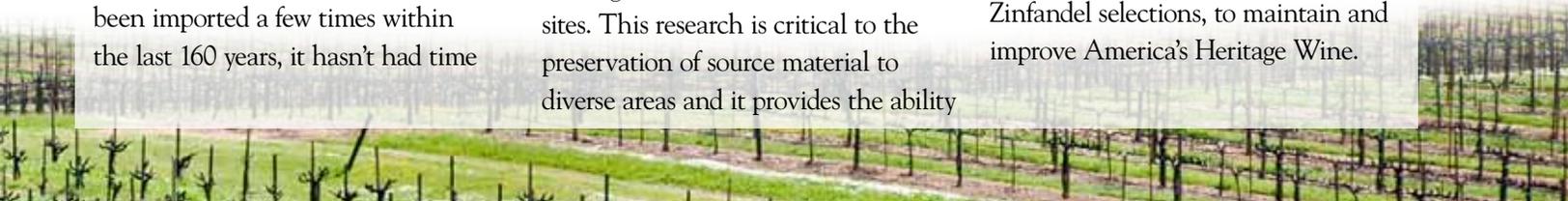
The project was expanded to additional areas (Sonoma and Dry Creek Valleys, Sonoma County; and Paso Robles, San Luis Obispo County) to understand the role of local climates in producing Zinfandel. ZAP members have become collaborators, using UC Davis' protocol to expand planning and plant-replicated experimental vineyards to more traditional Zinfandel growing regions.

There was significant debate in the scientific community about how much variation could be expected among Zinfandel clones because evolution could be dependent on three factors that are not easily found in Zinfandel vines: 1) Longevity of growth; 2) Ease and speed of mutation; and 3) Evidence of variability. Because Zinfandel is only believed to have been imported a few times within the last 160 years, it hasn't had time

to mutate significantly, and the base of initial variation is fairly small.

However, the Zinfandel Heritage Vineyard Project has resulted in the release of 19 new Zinfandel selections, and the Project continues. ZAP will continue to support UC Davis' ongoing performance evaluation of the selections across many regions, looking toward additional Phase III sites. This research is critical to the preservation of source material to diverse areas and it provides the ability

to examine the influence of regional characteristics such as climate, *terroir* and geography. The completion of the UC Davis Teaching and Research Winery will now allow for winemaking under highly controlled conditions, providing for more in-depth data collection. Ultimately, this combined research will provide for distinctive and sustainable Zinfandel selections, to maintain and improve America's Heritage Wine.



About the Heritage Vineyard

The Heritage Vineyard was originally established at the UC Davis Oakville Research Station in Napa Valley, California, to replicate the conditions that have given Zinfandel its reputation. It includes

a collection of old vine Zinfandel grapes from vineyards in 14 counties throughout the state: Sonoma, Mendocino, Napa, Contra Costa, San Luis Obispo, San Joaquin, Lake, Amador, El Dorado, Calaveras, Alameda, Santa Cruz, San Bernardino and Riverside.

During the first phase of the project in 1995, 63 selections were planted; during the second phase in 1999, an additional 27, for a total of 90 selections. The vines were grafted onto St. George rootstock with a spacing of 9 feet by 8 feet. Each vine has been head-trained and spur-pruned in the “goblet” shape as it would have been in the nineteenth century. These practices ensure high quality but low yield, and while not typically used today, the Heritage Vineyard demands authenticity.



ZAP's Commitment to Research

ZAP's cumulative contribution to support the Heritage Vineyard Project has passed the \$350,000 milestone. “This is easily the largest grant coming from an independent organization focused on one specific winegrape varietal,” Wolpert said. “This research will potentially have more impact on the improvement of Zinfandel than any other study done at UC Davis. I am very grateful to ZAP because without its advice, involvement, and financial support, this trial would not be possible.”

The Heritage Vineyard Project report provides the following summary data for the years 2005-2009

Harvest Date
Cluster Number
Berry Weight
Berries per Cluster
Cluster Weight
Yield
Brix
pH
Pruning Weight
Yield: Pruning Weight
Tons per Acre

Share your love of Zinfandel! Connect with the World of Zin.

ZAP acts as a resource, connecting the Zinfandel community around the world. ZinWorld, found at the website: zinfandel.org, serves as ZAP's comprehensive resource center and online social networking site for wineries, growers, and advocates.

Visit zinfandel.org to learn more about ZAP, read updates on the latest research, find upcoming events in your area, and connect with Zinfandel enthusiasts.



Zinfandel Advocates & Producers
Rebecca Robinson,
Executive Director

Tel: 530-274-4900
Fax: 530-274-4904
P. O. Box 1487
Rough & Ready, CA 95975

Email: info@zinfandel.org
Website: zinfandel.org

Compile your personal Zinfandel anthology!

Log onto zinfandel.org/heritage

to view and print regular updates from

The Zinfandel Chronicles

including

**Preserving Heritage,
Promoting Excellence**

to learn about the research behind the vine.