

USDA NATIONAL GRAPEVINE GERmplASM RESOURCES: NEW CURATORS, NEW DIRECTIONS

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Abstract:

Context and purpose of the study – The National Plant Germplasm System (NPGS) in the United States Department of Agriculture safeguards numerous species. Grapevines are split in two locations: Davis, CA and Geneva, NY. The two germplasms maintain 43 *Vitis* species with over 4500 genetically unique accessions. The collections are a conservation library of genetic diversity of grapevine and they serve as a resource of genetic material for breeders, pathologists, taxonomists, other scientists, and growers. We freely distribute materials to requestors every year, which consists of not only dormant canes for growing their own vines for research but leaves, berries, and pollen. We also publically share data developed by stakeholders and our own labs. In the past two years both collections have gained new curators to maintain, distribute, acquire, characterize, and document details about these grapevine germplasms.

Material and methods – Current research in each germplasm is focused on acquiring new germplasm to fill genetic gaps, updating maintenance techniques to improve quality of material distributed, updating databases with scientific research conducted on already maintained material, and conducting characterization studies to fill descriptor gaps. The two teams are coordinating efforts, methods, and documentation.

Results – Both teams have projects investigating genetic gaps within the germplasms with numerous national and international collaborators. Currently the focus is on ensuring North American species are safeguarded within the system, and the genetic diversity of these species is protected. New descriptors focused on cold hardiness, genetic characterization of resistance alleles to powdery mildew and downy mildew, high-throughput phenotyping techniques, and juice & wine chemical composition of *V. vinifera* and French-American hybrids.

Keywords: Grapevine, Germplasm, *Vitis* species