Efforts in Grape Breeding Research at the San Joaquin Valley Ag Center in Parlier, CA

Summaira Riaz, United States Department of Agriculture-Agricultural Research Services, Parlier, CA. summaira.riaz@usda.gov

Table grape and raisin grape breeding history at the San Joaquin Valley Research Center (SJVRC) date back to 1923. Multiple generation of breeders has contributed to the release of over 25 varieties of table grapes and raisins that have revolutionize the industry. The current focus of the breeding program is to develop table grape and raisin cultivars with durable field resistance to Pierce’s disease (PD) caused by the bacterium Xylella fastidiosa (Xf), natural resistance to grape powdery mildew (PM), retain high fruit quality, commercial production standards, and productivity to provide competitive edge to the grape industry. Molecular markers linked to two PD and six PM resistance loci are used at seedling stage. Use of DNA based markers has allowed breeder to stack multiple resistance loci in single line that enhance breeding efficiency, reduce costs and time to develop new perennial crop cultivars. Identification of selected lines that are deemed worthy of varietal introduction based on unique fruit quality, improved production, disease resistance to PD and/or PM and field trials are carried out in collaboration with California Table Grape Commission (CTGC). New varieties are selected for commercial production in California by consensus based on production and fruit quality data, growers’ input, and subjective visual appearance after a prolonged period of postharvest storage.