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INTRODUCTION

CITRUS IS THE MOST IMPORTANT subtropical fruit crop in North America. In California, citrus has been produced commercially since the mid-1800s. Currently approximately 275,000 acres in California are devoted to citrus, yielding about 4.5 billion pounds of fruit annually. In 1999, the gross on-farm value of California citrus was about $734 million. In 1997, the export value for California citrus was approximately $454 million. Collectively, citrus is one of the top ten crops in the state. To create new varieties, maintain a large diversity of commercial citrus varieties, and ensure healthy trees in the field and desirable fruit in the marketplace, reliable sources of citrus genetic resources are required. In addition, reliable collections of citrus genetic diversity are crucial for the development of new compounds for human use, especially since wild citrus populations are rare and habitat destruction threatens those that still exist. One of the largest and most diverse assemblages of citrus genetic resources in the world is maintained in California by what is, in essence, a conservation and utilization system comprising three primary units: the Citrus Variety Collection (CVC) and the Citrus Clonal Protection Program (CCPP) at the University of California and the USDA National Clonal Germplasm Repository for Citrus and Dates (NCGRCD). Closely collaborating with these three units are the UC Riverside Citrus Breeding Program and the California Citrus Research Board.

The UC CVC is one of the most extensive collections of citrus diversity in the world, encompassing approximately 1,720 trees representing 865 accessions of citrus and citrus relatives. This diversity is manifested visually by types with fruits of unusual shapes, sizes, colors, and flavors growing on trees of varying heights, forms, and foliage characteristics. In addition, in this material there is great variation in the chemical compounds of the rind and flesh manifested by variation in flavor, texture, and aroma. Underlying this visible and tangible diversity is genetic diversity which can be manipulated, combined, and transferred for improvement of citrus crops for productivity, flavor, and disease and environmental tolerance and for development of new food and horticultural crops.

The primary users of the CVC are research scientists, plant breeders, nurserymen, growers, and citrus industry representatives. This collection was established in 1910 to provide genetic resources for citrus research in California. In recognition of the perpetual need for genetic resources, the USDA National Plant Germplasm System (NPGS) established the NCGRCD at UC Riverside in 1987 adjacent to the CVC. The CVC also provides genetic resources for the UC CCPP which currently provides the California citrus industry and researchers with a clean primary vegetative propagation tissue (budwood) source of important citrus scion and rootstock varieties.

This report reviews and summarizes the roles and interrelationships of the programs in California (CVC, CCPP, and NCGRCD) to recommend continued acquisition, conservation, and availability of citrus genetic materials for California.