The Rose Program

In an effort to reduce the damaging effects of virus infection on rose plants, a program of virus detection and elimination was initiated at FPS in the 1960s. Roses which tested negative for rose mosaic virus were planted in a special collection. This collection proved valuable to the rose nursery industry in its efforts to improve the quality of its stock. In the mid-1990s with industry support, FPS expanded the original block of virus-indexed plants to 8 acres — the largest collection of clean stock roses in the U.S. today. The garden is inspected twice annually and is regularly tested by bioassays, serological and molecular tests. Scion budwood and understock canes are made available as a source of disease-tested material to establish healthy cutting blocks for commercial production. All-America rose selections are automatically sent to FPS for inclusion in the collection.

The Sweet Potato Program

In the 1960s, California sweet potato growers faced a serious problem with russet crack disease of sweet potatoes. A program was developed by UC Davis plant pathologists to provide growers with virus-tested sweet potato stock. In 1995, the program was transferred from the UC Department of Plant Pathology to FPS. The collection of sweet potato mother plants is maintained as large, potted plants in a greenhouse. These plants originate from stock that is treated by tissue culture therapy to eliminate viruses, tests negative for virus diseases and is selected for desirable agronomic characteristics. Each spring, FPS produces thousands of rooted cuttings of this stock for planting by growers.

Custom Laboratory Testing Services

Disease testing services using polymerase chain reaction (PCR) technology is available at FPS for 16 pathogens of grapes and 5 pathogens of fruit and nut trees. PCR is a highly sensitive test that has been optimized at FPS for both grape and tree pathogens.

In addition, a DNA profiling service is available for the identification and characterization of grapevines. The UC Davis Department of Viticulture and Enology has created a DNA database of over 600 profiles of the major winegrape, tablegrape, raisin and rootstock varieties. FPS clients can submit samples for comparison with this database, uniquely identifying cultivars to an extremely high degree of confidence.
Severe virus disease problems in California vineyards during the 1950s spurred UC and USDA scientists to develop methods for grape virus disease detection and disease elimination. A large collection of disease-tested wine, table, raisin and rootstock grape selections was created which became the foundation for the California Grapevine Registration & Certification (R&C) Program.

The current 40-acre Foundation Vineyard was established on fumigated soil in an isolated location. Vines are inspected and retested regularly by FPS and CDFA. FPS is the source of California Registered or Certified grapevines.

Today, FPS is the only dedicated grape importation facility in the United States. Highly sought-after foreign grape selections are processed through quarantine for the grape and wine industries.

The following chart describes the process of qualifying new selections for the FPS Foundation Vineyard and the California Grapevine R&C Program. Testing normally requires two years, but if virus diseases are found, therapy and retesting may take much longer. After planting in the Foundation Vineyard, several years may be needed for the vines to produce fruit for professional identity verification.

Revised grape yield can be caused by grapevine fanleaf virus (cluster on left), one of 15 viruses spread through infected planting stock.

FPS Foundation grape stock is established after an exacting series of tests and procedures. Similar schemes are part of the other crop programs.