

Request Identification Services

To initiate a DNA-Based Variety Identification Service request send an email to fps@ucdavis.edu with the subject *DNA Identification* and the following information:

- Background on the plants to be tested and the issue you want to resolve
- The number of plants to be tested
- Name, address, and phone number for shipping the collection kit

We will send an e-mail confirmation and ship a collection kit, provided as part of the service, with collecting instructions.

The collection kit for standard leaf samples contains envelopes with blotting paper, a sealable plastic bag with orange silica desiccant beads (below), and collecting instructions.



Above: grape and olive leaves on blotter paper ready to be placed into the correspondingly labeled envelopes. The envelopes are then placed into the plastic zip top bag with orange silica desiccant in our standard collection kit.

Samples

Our standard sample consists of young leaves dried using our collection kit and protocol. Samples other than standard dried leaves using our protocol require special handling and carry a \$50 per sample surcharge. Collection instructions for non-standard sample types are provided case-by-case.

FPS cannot accept non-standard samples from international customers.



Above: the FPS Trinchero Family Estates Building at the University of California in Davis, California.

Prices per sample

1-5 samples	\$420
6 or more samples	\$303

Surcharges per sample

Other than dried leaf samples*	\$50
International samples	\$50

* using our standard protocol

Payment Options

Credit Card (+5% processing) or Check

(530) 752-3590 tel | (530) 752-2132 fax
455 Hopkins Road, Davis, CA 95616
fps@ucdavis.edu
<https://fps.ucdavis.edu/dnamain.cfm>



DNA-Based Variety Identification

The Plant Identification Lab at Foundation Plant Services uses DNA fingerprinting to provide DNA-based variety identification for grapevines and fruit and nut tree crops. The service is used by both domestic and international nursery managers, growers, processors, breeders, other industry members, and the public.



Testing is available for:

Almond	Apple	Apricot	Cherry
Grape	Olive	Peach	Pistachio
Plum	Walnut		

DNA Fingerprinting

Within a given crop only a small fraction of the DNA differs between varieties thus small specific regions of the DNA are used for the purpose of variety identification. Analysis of a panel of these specific DNA markers produces the DNA profile or "DNA Fingerprint". Using a marker panel specific to each crop, the DNA profile of a client sample is matched to a reference database specific to each fruit or nut crop to identify the variety.



Above: loading dried leaf samples into a plate for DNA extraction. The isolated DNA will then be fingerprinted and compared to a reference profile database to identify the variety.

DNA fingerprinting does not distinguish between somatic mutations (aka bud-sports, clones) within a given variety

Applications of DNA-Based Variety Identification:

- Field management
 - Corroborate planting records of a newly purchased or historic property
 - Identify a tree or vine showing different characteristics than the variety of record
 - Confirm or identify the rootstock variety
- Nursery and production management
 - Validate the identity of *in vitro* propagated plants
 - Ensure propagates match the mother plant of record
- Breeder support
 - Verify the parentage of a new variety
 - Contribute a voucher sample of your variety to FPS and have it added to our reference profile database

