



# **Fruit Tree, Nut Tree and Grapevine Improvement Advisory Board**

## **Update & Budget Review Support for Foundation Plant Services, 2025-2026**

MAHER AL RWAHNIH, DIRECTOR

JUNE 5, 2025



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**Foundation Plant Services**

# Topics

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- FPS Fruit Tree and Grape Program Updates
- IAB Budget Review

# FRUIT TREES



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# Fruit Tree: Program Deliverables

## 2024-2025 YTD\*

- # of PCR Tests Performed: 7,881
- Selections tested with High Throughput Sequencing (HTS): 270
- # of Plants tested for DNA ID: 63
- Tissue culture:
  - Selections in progress: 167
  - Selections to soil: 45

\*July 1, 2024 – June 1, 2025

# Fruit Tree Tissue Culture Progress

- **45 selections** transferred from media to soil is a huge improvement over 4 last year
  - Thanks to 1 year of hiring John Driver to consult on media and techniques

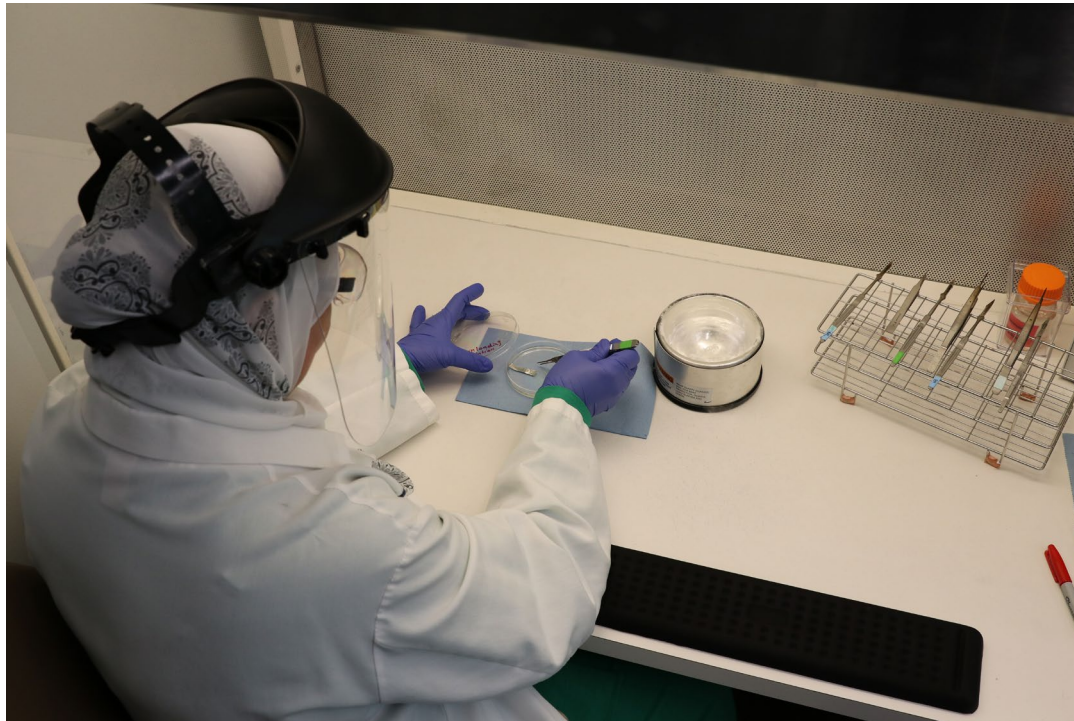


## Other Improvements in TC Lab – Early Testing

- To expedite the process we started testing in vitro material for viruses expected due to the mother status.
  - Some plantlets were CVA, PNRSV, PLMVd positive.
    - Work terminated immediately.
- Resources not wasted on positive material!
- Indicates the success rate of virus or viroid elimination using only microshoot-tip tissue culture is low.

## Other Improvements in TC Lab – Cryotherapy

- Cryotherapy is another therapy we are adding to tissue culture
- Rasha and Erin trained with USDA in Colorado and are now using cryotherapy in the FPS lab.





# Other Improvements in TC Lab

- More space!





# Fruit Tree: Collection & Distribution

FOUNDATION		
	May 2024	May 2025
Active cultivars	470	540
Total selections	517	598
Total plants	2,231	2,468

DISTRIBUTION*			
	Out of State	California	Total
Cuttings	2,235	30,880	33,115
Seeds	57,628	186,075	243,703

*\*July 1, 2024 – June 1, 2025*



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# Fruit Tree: Release and introduction of selections

## 2024-2025

- 50 new releases
- 76 new introductions

Introduction Source	Quantity
Domestic	14
Under Quarantine	62

Introduction Type	Quantity
Public	2
Proprietary	74

CROP	GROUPS INTRODUCED
ALMOND	1
APPLE	4
APRICOT	5
CHERRY	25
CHERRY ROOTSTOCK	2
NECTARINE	13
OLIVE	14
PEACH	7
PEAR	1
PEAR ROOTSTOCK	2
PLUM/PRUNE	2

# Olive Program Still Growing

- 14 proprietary varieties handled by our introduction program in the last year.
- Working with colleagues in Italy to bring FS17 to the public collection
  - Known for resistance to *Xylella fastidiosa*



# Pistachio Scion Varieties

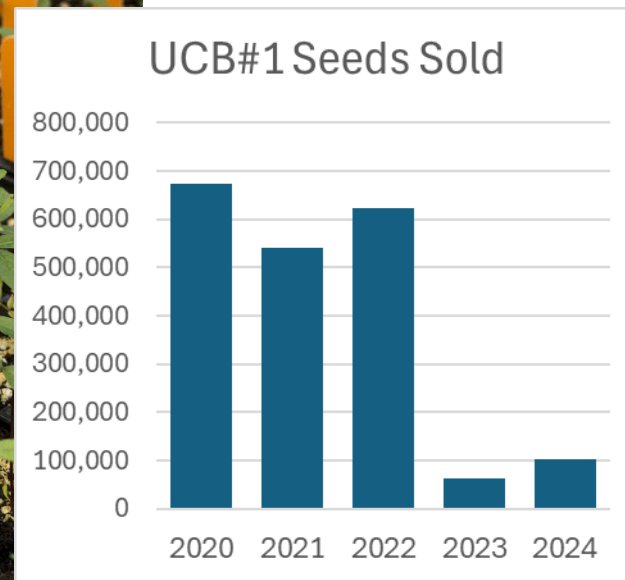
Male (pollinizer)	Female
Famoso	Golden Hills
Randy	Gumdrop
Tejon	Lost Hills
UC Westside	Kerman
Peters	

- New pistachio block established at Russell Ranch.
- Regular sales to nurseries have slowed since 2022.
  - Only one order so far this year.



# UCB-1 Pistachio Rootstock

- We have a large inventory of seed available.
- Seed sales have dropped dramatically.



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# GRAPES



# Grapes: Program Deliverables

## 2024-2025 YTD\*

- # of PCR Tests Performed: 151,953
- Selections tested with High Throughput Sequencing (HTS): 230
- # of Plants tested for DNA ID: 1,298
- Tissue culture:
  - Selections in progress: 103
  - Selections to soil: 41

\*July 1, 2024 – June 1, 2025

# Grape: Release and introduction of selections

2024-2025

- 83 new releases
- 38 new introductions
  - 3 new winegrape varieties for the public collection: Kratoshija, Odesky Chorny, Completer.

Introduction Type	Quantity
Public	7
Proprietary	31

Introduction Source	Quantity
Domestic	10
International	38



# Grape: Foundation & Distribution

FOUNDATION		
	May 2024	May 2025
Active cultivars	995	1,049
Classic Foundation Selections	2,329	2,462
Classic Foundation Plants	4,630	4,908

DISTRIBUTION			
	Out of State	California	Total
Cuttings	4,654	27,793	32,447
Seeds (1/4#)	340	4	314
Flower Clusters	4	20	24
Plants	0	15	15

## Remember: the grape material you source from FPS is tested twice!

- Foundation grapevines are inspected and re-tested regularly to confirm they remain virus-free and are eligible in CDFA certification program.
- FPS testing exceeds CDFA requirement
  - First test: in the **fall** we use leaf petiole samples to test **every vine** for GRBV and GLRaV-3, **every year**.
    - Sample both sides of vine, 6 petioles each
  - Second test: dormant material from every vine that material is distributed from is tested again, to ensure it is free of GRBV and GLRaV-3.



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# Classic Foundation Vineyard Update

- Summer/Fall 2024 testing showed one case of GLRaV-3
  - First case since 1994.

Year	Total Vines*	GRBV Positive Vines	GRBV Incidence	GLRaV-3 Positive Vines	GLRaV-3 Incidence
2018	4,075	0	0%	0	0%
2019	4,075	1	0.02%	0	0%
2020	4,270	0	0%	0	0%
2021	4,594	0	0%	0	0%
2022	4,660	0	0%	0	0%
2023	4,634	0	0%	0	0%
2024	4,881	0	0%	1	0.02%

\*Each grapevine is sampled and tested for GRBV and GLRaV-3 using real time qPCR.

THAT LEAFROLL DETECTION WAS SCARY...

# **WHAT'S THE STATUS OF THE GREENHOUSE COLLECTION?**



# Phase 1 Greenhouse

- Completed in March 2024
- ~1,200 selections moved indoors



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# The Phase 1 Greenhouse is full – Now what?

- There are additional priority selections
- There are new additions to the collection every year
- These need more space!

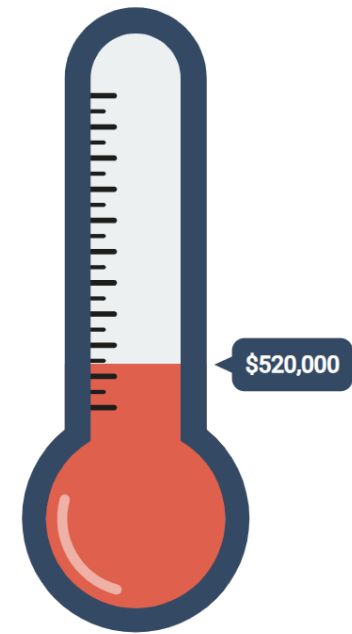
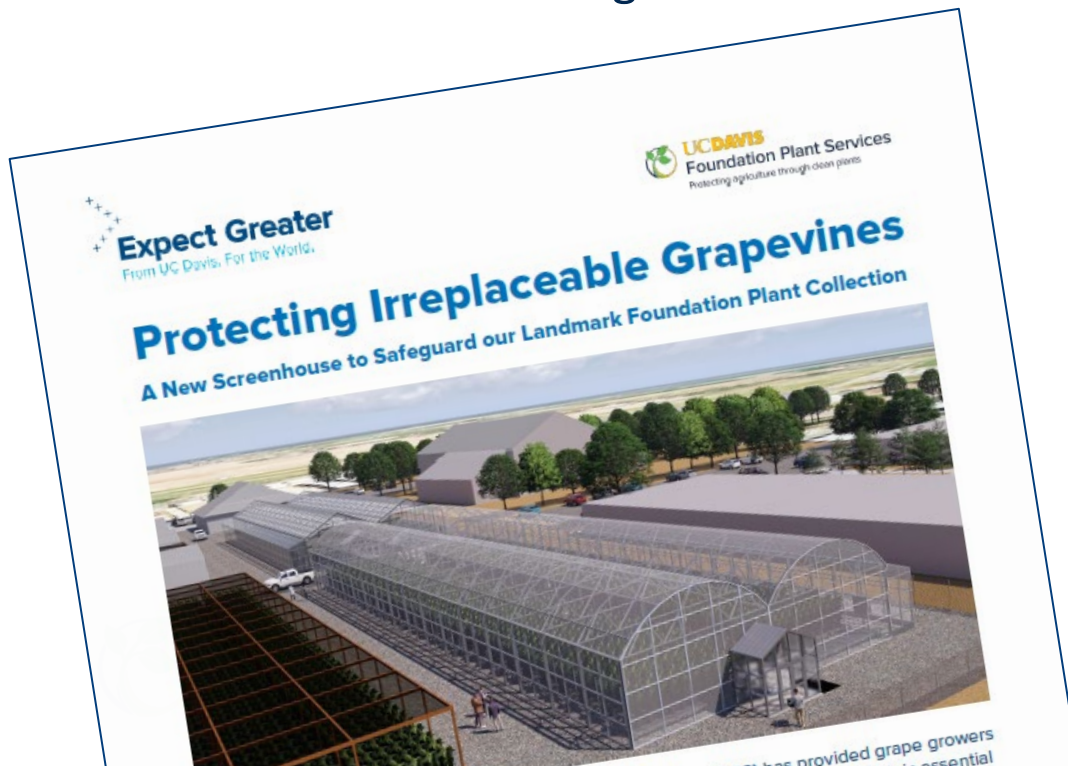
## Phase 2 Screenhouse





# Phase 2 Screenhouse

- Estimated project cost \$3.7 million
  - Open for contractor bids now
- Fundraising is in progress
- \$360,000 in matching funds provided by a generous donor
- Generous industry support has helped us secure this match!!
  - Gift agreements in progress
- We continue working to secure additional funding



# Interim Funding to Begin Construction

- UC policy requires a funded account before project can begin.
- \$2.5 million, 0% interest loan from UC Davis College of Agriculture & Environmental Sciences allows us to start the project.
  - The Dean's Office is very supportive of FPS and has been key to our success in Phase 1 and Phase 2.



# OPERATIONAL FUNDING



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# NCPN Funding Update

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- NCPN is a USDA program
- FPS was awarded \$2.4 million for FY25, and after a couple of pauses and DOGE review, the agreement is finally in place.
- This is our largest award to date, but still less than requested to fully support FPS operations.



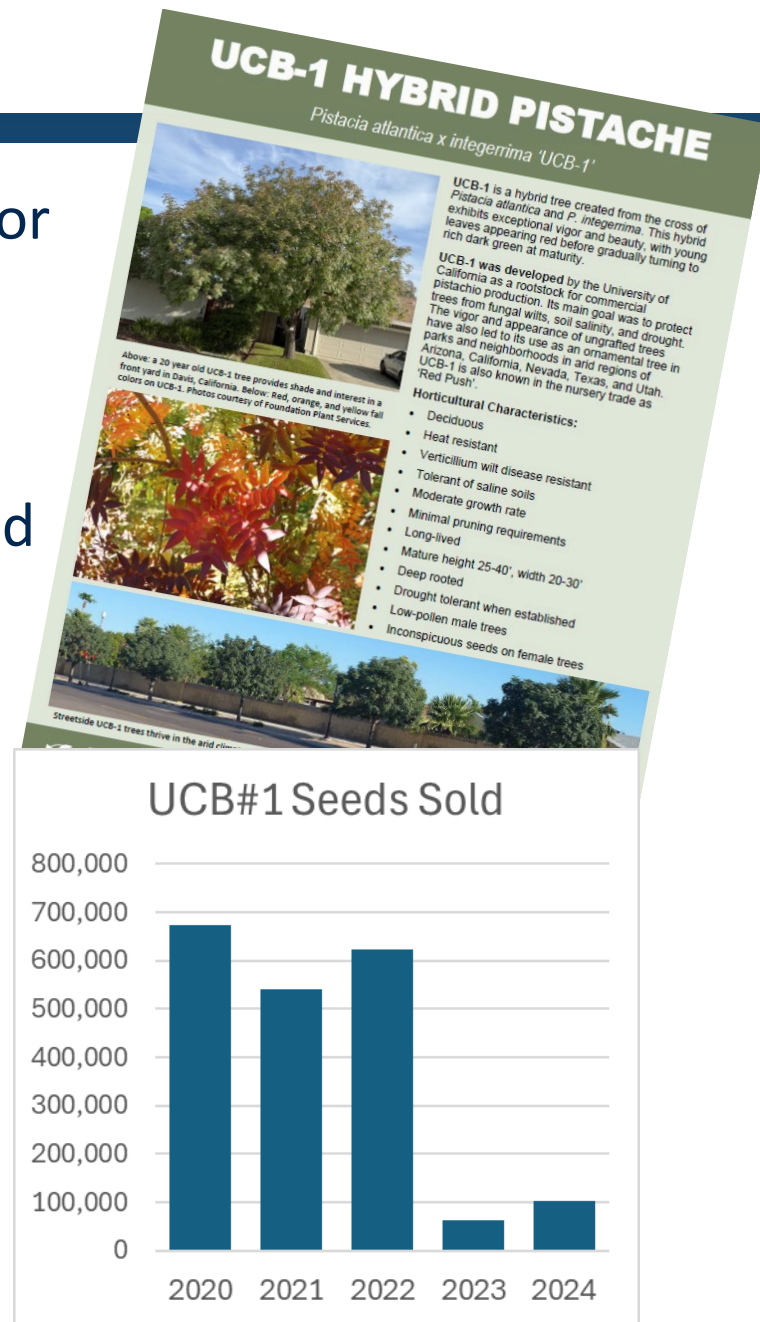
# Research Funding

- FPS will receive \$459,000 of research funding from USDA PPA7721's FY 25 spending plan.
  - Agreements are in progress.
- Also operating with research funds from:
  - PD Board
  - CA Strawberry Commission
  - American Vineyard Foundation

# UCB#1 Sales

- A large share of plant material sales for the last decade has been UCB-1 pistachio rootstock seed.
- California plantings using UCB-1 have slowed down, leading to reduced seed sales.
- We've tried to develop international and ornamental markets for UCB-1, which accounts for recent sales.

**What else can we do to replace the UCB#1 revenue?**



# Announcing: FPS Berry Program

- FPS has handled exclusively UC strawberries since 1990s.
- After being approached with requests about berries, we are now using our capacity to expand the FPS berry program.



HOME GRAPE PRUNUS PISTACHIO UC STRAWBERRY ROSE SWEET POTATO **BERRIES** VARIETY ID VIRUS DIAGNOSTICS

## FPS Berries Program

In addition to its program for UC strawberry varieties, FPS offers import & quarantine and diagnostic testing services to other domestic and international stakeholders and breeding programs.

### Import & Quarantine Services

Berries (*Rubus*, *Vaccinium*, *Fragaria*) entering the US for planting must complete testing to screen for regulated pathogens, followed by microshoot-tip tissue culture therapy if regulated pathogens are present in the source material. FPS is one of the centers permitted by USDA-APHIS-PPQ to provide this service.

FPS offers import and quarantine of berry material, which includes testing for regulated pathogens, virus clean-up service (additional fee, see right) if required, and release of tested material back to the sponsor.

### Diagnostic Testing Services

If you are interested in custom testing of berries for export purposes or for general diagnostic use, please contact us with your request. FPS offers High Throughput Sequencing and PCR



#### Current Service Prices

*Effective May 1, 2025*

- **Import of Plant Material:**  
\$5,000 per selection
- **Virus therapy:** \$2,000 per selection

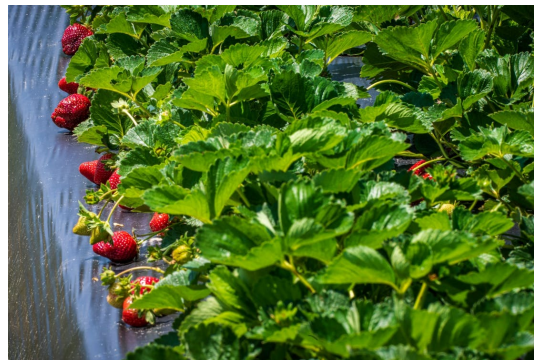
To initiate this service contact FPS:

**Phone (530) 752-3590**

**[fps@ucdavis.edu](mailto:fps@ucdavis.edu)**

# Announcing: FPS Berry Program

- Strawberry, blueberry, raspberry, blackberry
- Quarantine inquiries already from Oregon, New Zealand, Australia, Canada, Peru, Mexico
- Diagnostic lab services also in high demand



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# Funding Shortfalls

- Reduced user fee income
  - Dip in grape sales
  - Nurseries leaving the grape business
    - Over \$500,000 in regular user fee payments to stop
  - UCB-1 market not rebounding
- Reduced plant material sales
  - Mainly UCB-1 market not rebounding
- NCPN can offer only partial operational funding.
- CDFA-IAB to be determined.

**The show must go on!**

# Propagation from Classic for Collection Security

- Sought FY25-27 propagation funding from CDFA Pierce's Disease Board – funded for only FY25
  - 3 years, \$693,006 proposed
  - 1 year, \$115,837 funded
- Most Classic selections are secured in some way – plants in new greenhouse, or in an earlier propagation stage to get there.



# Maintaining the Collection

- Plants must be maintained even through the down years so that they remain available when the demand returns.
  - Annual virus testing
  - Annual inspections
  - Watering
  - Pest management
  - Pruning



All hands on deck! FPS nursery, lab, and office staff joined the field team to prune the vineyard.

# Cost Conscious Measures

- Staff are working across multiple departments
  - Diagnostic lab helping in field
  - Field crew helping in nursery
  - All hands on special projects!
- Automation increasing where possible
  - Watering
  - Lab sample processing
  - Customer order entry
- Increased prices for plant material & services – all crops



*Jack of all trades: Karl (IT Director) pitched in to wire the new greenhouse for automatic irrigation.*

# Impact on Staff

- UC announced a hiring freeze March 19.
  - Only critical hires will be allowed.
- Just as the industry is downsizing, so too is FPS.
- 5 experienced employees retiring this year
  - Average 20 years of UC Davis experience!
    - Nursery, tissue culture, field crew, diagnostic lab, and office admin.
  - 2 plan to return part-time: we will push hard for these recall appointments!
  - No replacement plans for others.
- We reassigned one office assistant previously responsible for customer interactions, orders, and accounts payable.
- 1-2 layoffs being considered due to budget shortfalls.

# Staff Reductions – How it Affects FPS Customers

- Office hours reduced, 8:00-4:30.
- Phone and email response times expected to lengthen
  - Email to [FPS@ucdavis.edu](mailto:FPS@ucdavis.edu) is best way to have your inquiry seen by the team.
- Using the Portal to submit orders is HIGHLY recommended
- Longer order turnaround times
  - Order cuttings on Monday? Not guaranteed in the week.

## Staff Reductions – How it Affects the Collection

- We are leveraging our quality management tools more than ever for reporting plant and facility issues, and prioritizing response to **critical** material.
- Horticultural maintenance activities may be delayed or avoided.

**We cannot cut back on testing the plants!**

# Staff Reductions – How it Affects the Collection

- We are committed to testing the collection
  - To comply with CDFA R&C standards.
  - To reduce the risk of incursion and spread of a pathogen like phytoplasma, GRBV, CVA, PNRSV
    - Damage to the collection can be HUGE if we don't detect infection and remove infected tree or vine in a timely manner.
  - To stay confident that we are distributing clean material.

Year	Total Vines*	GRBV Positive Vines	GRBV Incidence	GLRaV-3 Positive Vines	GLRaV-3 Incidence
2018	4,075	0	0%	0	0%
2019	4,075	1	0.02%	0	0%
2020	4,270	0	0%	0	0%
2021	4,594	0	0%	0	0%
2022	4,660	0	0%	0	0%
2023	4,634	0	0%	0	0%
2024	4,881	0	0%	1	0.02%

\*Each grapevine is sampled and tested for GRBV and GLRaV-3 using real time qPCR.



# Cost Conscious and Committed to Clean

- Some activities will be delayed due to lack of staffing
- Providing clean, tested material remains our priority
- Securing funding for the next year is extremely important to continuing our mission.



# IAB BUDGET REVIEW



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Proposal is \$1,993,083 to support FPS activities for 2025-2026

BUDGET ITEM	BASE PROGRAM	SUPPLEMENT TO BASE PROGRAM	TREE	GRAPE	TOTAL
Base program support	√		\$293,550	\$298,815	\$592,365
FPS Director (40%) and Quality Manager (50%) salary & benefits	√		\$105,296	\$105,296	\$210,592
PCR testing of the orchards for 6 pathogens	√		\$117,074		\$117,074
Testing and propagation of FPS Foundation Greenhouse grapevines	√			\$156,377	\$156,377
PCR testing of 1/5 Classic Foundation vineyard for 19 pathogens	√			\$193,361	\$193,361
Micro satellite analysis of orchard and vineyard plants		√	\$139,314	\$139,700	\$279,014
Tissue Culture virus elimination		√	\$134,718	\$137,029	\$271,747
SUBTOTAL	\$1,269,769	\$550,761	\$789,952	\$1,030,578	\$1,820,530
+ 10% University Overhead Costs on Salary & Benefits					\$172,553
<b>TOTAL FUNDS REQUESTED</b>					<b>\$1,993,083</b>

In comparison, FY24-25 proposal was for \$1,993,657.

**THANK YOU**



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