



August 7, 2027

Email: AMSAdministratorOffice@usda.gov

Erin Morris
Administrator
Agricultural Marketing Service, USDA
STOP Code 0201
1400 Independence Avenue, S.W.
Washington, D.C. 20250-0201

Dear Administrator Morris,

Enclosed please find a proposal for a new Research and Promotion Program, the American Grapevine Genetics Research Initiative (AGGRI).

As an R&P program, AGGRI would address the need for grapevine trait development to provide grapevine growers and the grapevine nursery industry with functional genomics infrastructure, transgene-free varietal innovation, and industry-accessible intellectual property (IP) management to provide real, tangible benefits including improved vine resilience, disease resistance, labor efficiency, and cost savings.

This proposal is being submitted by a working group comprised of 10 members of the grapevine nursery industry and two technical advisors who initiated development of this concept beginning in November 2023 and met regularly since July 2025 to develop the proposal.

On behalf of the working group and the industry, we appreciate the opportunity to submit this proposal for consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "DM", with a stylized flourish at the end.

Dan Martinez, Martinez Orchards President
Member, AGGRI Working Group

Cc:

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AMERICAN GRAPEVINE GENETICS RESEARCH INITIATIVE

This report includes:

- 1.) Program Objective
- 2.) Justification
- 3.) Industry Analysis
 - Grape sectors, including:
 - Juice grapes
 - Wine grapes
 - Table grapes
 - Raisin grapes
 - Grapevine nurseries
- 4.) Impact on Small Business
- 5.) Evidence of Industry Support for the Program
- 6.) Text of the Proposed USDA AMS R&P Order

Program Objective:

The objectives of the American Grapevine Genetics Research Initiative (AGGRI) are:

- 1.) a national grapevine nursery assessment to build the long-term research with durable infrastructure and governance--beyond grant cycles, political terms or individual organizations--that serves, and is controlled by, the U.S. grape industry,
- 2.) to build on and surpass traditional plant breeding to identify genes responsible for prioritized grapevine traits and provide functional proof of those plant traits that allow growers real-world application in the vineyard, and
- 3.) ensure accumulated research findings and related information is disseminated to grapevine nurseries and grape growers throughout the U.S.

AGGRI is set to be a national Research and Promotion Program that addresses a need for grapevine trait development to provide grapevine growers and the grapevine nursery industry with functional genomics infrastructure, transgene-free varietal innovation, and industry-accessible intellectual property (IP) management—copyrights, trademarks, information, publications, and product formulations—to provide real, tangible benefits including improved vine resilience, disease resistance, labor efficiency, and cost savings.

Science is moving quickly, and AGGRI is being built for the next century with the understanding that terms, tools, and jargon used today could be irrelevant in 5-10 years. AGGRI intends to promote scientists' freedom to use the best tools for the job—even if we don't yet know what those tools are but understanding that some tools are used for research only and not for application.

Ultimately, while current research projects focus on knowledge, the AGGRI effort focuses on developing a genetically-improved grapevine product for grape growers from all sectors across the U.S.--raisin, wine, table, and juice.

A balanced, representative, and transparent structure is essential to earn industry support, meet USDA AMS compliance, and ensure long-term credibility and impact of the Initiative. A governance structure for the AGGRI Board is envisioned as a body that will:

- Ensure responsible stewardship of assessment funds,
- Align research investments with real-world nursery and grower needs, and
- Set and enforce fair participation criteria through clear definitions and exemptions.

Upon appointment of the initial Board of Directors, bylaws would determine whether there is an Executive Committee and its structure, including the official titles, duties, and the number of primary officers (for example, Chair or President and Secretary), so responsibilities and decision authority are clear from the start. The bylaws would also specify a committee structure, including what standing or ad hoc committees will exist (such as promotion, research, industry relations, communications, or other committees), how they are designated, and how they will be staffed.

To ensure a wide range of stakeholder input, one such committee, established by the Board of Directors would be a Consumer and Technical Advisory Committee (“CTAC”) to provide advice and recommendations to the Board regarding research, information, and program priorities under the Order. CTAC members would include a mix of consumers of grapevine or grape-related products and technical advisors with relevant expertise, such as plant genetics, plant health, plant breeding, nursery production, viticulture, or related scientific or technical fields. CTAC members would not be first handlers, however the Chair of CTAC would hold a Board position.

Bylaws would set meeting procedures, including when and how often Board meetings will occur and the location of meetings. The Board would develop, with AMS input, multi-year contract language to satisfy the requirements outlined in the AMS Guidelines including copyrights, trademarks, information, publications, and product formulations ownership language, as well as termination language. Other provisions in the bylaws would address where the Board headquarters is located, personal liability, and officer and Board expenses.

Overall operations would necessarily focus on R&P Program statutory requirements including:

- Annual work plan and annual budget for programs, plans, and projects noting that the work plan, budget, proposed contracts must be pre-approved by USDA
- Every three years, USDA management review of internal policies and procedures
- Every five years, the Board conducts formal econometric review of industry return on investment
- Every seven years (or upon 10% industry request), a continuance referendum on whether to continue R&P Program

Justification:

The U.S. grape industry consists of many unique regional growing regions, each with specific environmental, production and economic challenges which can only be addressed with research investment.

Like all agricultural commodities, research is paramount to increasing the productivity, production efficiency, and long-term economic sustainability of the U.S. grape industry. During the past 50 years, advancements in germplasm quality, vineyard design, and growing practices have led to a doubling of yield in most grape industry market sectors. While significant, this increase in productivity is modest compared to the fourfold yield improvement achieved by commodity crops such as corn and soybeans during the same period. As the challenges for the industry have never been greater, so is the need for long-term investment in grape research to ensure the industry's future.

In the western U.S., variable precipitation patterns have led to extended periods of drought as well as cycles of excessive rainfall. The West is also experiencing an increased frequency of wildfires which negatively impact grape flavor and productivity. In the Eastern U.S., severe cold during the winter leading to partial or complete vine death continues to be a major challenge for many regions as well as variable spring temperatures and an increased occurrence of frost damage. Depending on the location, the mid-portion of the country faces a combination of challenges experienced in the West and in the East – periods of extended drought and excessive rainfall, cold damage, and increased frequency of frost. All grape growing regions of the U.S. face significant disease pressure, yield and vine losses due to viruses, and established pests along with new and invasive species. Research funding is needed, along with a coordinated and prioritized approach for funding allocation to address these and other issues facing the industry today.

Genetic improvement is essential for the development of long-term sustainable solutions to the major challenges currently faced by the grape industry. Due to a lack of adequate funding, grape genetics research has generally been limited to a few problems such as soil pests and fungal diseases. Nearly all commercial grape cultivars were either selected or developed hundreds of years ago, long predating genetic knowledge and agricultural technologies. These cultivars are only a few generations removed from being wild and have a narrow genetic base. As a result, they are not adapted to prevailing stresses, diseases, pests, or production systems and are at severe risk to invasive pests and diseases. A major effort for grape functional genomics is needed to link grape genes to their specific phenotypic traits. This will support the development of molecular tools essential for the advancement of traditional breeding as well as the fundamental gene discovery needed for cultivar improvement in the future. The genetics controlling resistances to pests and diseases, viruses, drought, smoke exposure, adaptation to extreme heat, cold and frost events, improved fruit flavor and nutritional content, must be unraveled. Consequently, sustained financial support for these research efforts is required.

As a specific example of urgent concern to the USDA and grape growers across the U.S., Asian spotted lanternfly (SLF) is an invasive insect that devours two primary hosts: tree-of-heaven and grapevines. SLF is well established in the Eastern U.S. and is spreading West. All *Vitis vinifera* grapes are susceptible to feeding by SLF. From wild grapevines, scientists in USDA-Agricultural Research Service (ARS) have found two sources of resistance to SLF, but research is urgently needed to identify the genetic basis of resistance and bring that resistance into cultivated *Vitis vinifera*. Another example is grapevine powdery mildew, to which all *Vitis vinifera* grapes are susceptible. About 20% of all pesticides in California (the largest producing grape state) target grapevine powdery mildew, accounting for 10% of grape production costs. More progress has

been made in the genetic basis of resistance to powdery mildew, but support is needed for the successful commercialization and adoption of resistant varieties.

These are just two examples among a long list of grape industry needs that include several other disease resistances (leafroll virus, red blotch virus, Pierce's disease, trunk diseases, various nematodes, downy mildew, cluster rots), several other pest resistances (glassy-winged sharpshooter, alfalfa leafhopper, phylloxera, berry moth), abiotic stresses (drought, heat, salt, cold, frost), specific fruit chemistry (muscat, methoxypyrazine, extractable tannins), mechanization traits (long peduncle, upright growth, natural drying on the vine raisins, dry stem scars for table grapes), propagation traits like graft success rate, and others. There is much work to be done, and this initiative aims to help address these gaps.

CURRENT STATE OF GRAPEVINE GENETICS RESEARCH

In the U.S., there is no sustained, industry-controlled funding source to support grapevine genetics research for long-term, high-investment areas like functional genomics. Existing programs (e.g., state wine and/or grape commissions, grower associations, American Vineyard Foundation, National Grape Research Alliance) often:

- Prioritize short-term applied research or regional trials,
- Have constrained annual budgets,
- Lack the bandwidth to fund multi-year, cross-institutional trait development.

What makes the effort (to create a Research and Promotion Order under USDA AMS) unique is that it is not about open-ended research but instead, applied, product-focused science with funding strategies aligned with real outcomes--functional tools, defined traits, and varietal improvements--to move traits across the finish line, not just advance academic knowledge, and directly benefit growers.

Even VitisGen (see below), the most comprehensive U.S. effort to date, has relied on inconsistent grant cycles and hasn't had funding security to scale across multiple traits. In addition, and most importantly, VitisGen focuses on *knowledge* while the AGGRI effort would focus on *developing a product*.

What is VitisGen

Thanks to a successful grant application to USDA's National Institute of Food and Agriculture (NIFA), under the Specialty Crop Research Initiative (SCRI), the VitisGen Project was launched in 2011. VitisGen is a nationwide collaborative effort to modernize and speed up the breeding of better grapevines. Working with researchers from universities and government labs across the country, its goal is to use genetics and new technology to help make grapes that are stronger, hardier, and tastier — faster. Focus areas included:

- Disease resistance — especially to powdery mildew (a major grapevine fungus)
- Cold tolerance — so vines do better in winter
- Improved fruit quality — better taste, seedlessness, and overall appeal

VitisGen is considered innovative because it focuses on the knowledge needed to develop grapevines that naturally resist disease and provides a greener, more sustainable solution as fungi evolve and become resistant to fungicides with chemical control becoming less reliable. Initial work provided:

- DNA markers to speed breeding: Scientists identify small DNA “flags” (markers) linked to important traits. This lets grape breeders quickly screen seedlings and zero in on the seedling grapevines likely to succeed — without waiting years for a vine to grow and be tested in the field.
- Powerful data tools and technology: Hundreds of thousands of vines were genotyped and over 1,000,000 data points were collected on features like disease resistance, fruit color, berry size, tannin levels, and more. This makes breeding both faster and smarter.
- Mapping genetic diversity of grape collections: VitisGen2 helped map the genomes of 7,000 grapevine specimens held at USDA-ARS collections in New York and California. Each vine got ~2,000 DNA markers, giving researchers unprecedented insight into grape diversity.

Launched in 2022, VitisGen3 builds on the initial work and aims to:

- Pinpoint and test genes that provide durable resistance to powdery mildew.
- Use cutting-edge technologies like computer-vision and AI to “see” vine traits faster.
- Teach growers how to manage vineyards sustainably using resistant varieties.
- Understand what information helps consumers choose sustainable grape products (including testing with eye-tracking to see how they shop).

The VitisGen Project has found success in cyclical funding primarily through competitive grants from the USDA’s National Institute of Food and Agriculture (NIFA), specifically under the Specialty Crop Research Initiative (SCRI). The SCRI program exists to support research that benefits high-value specialty crops (like grapes) in the U.S., and projects are awarded funding through a competitive peer-review process. VitisGen has been awarded funds to date that allow three iterations between 2011 and 2027:

VitisGen1 (2011–2014)

- Funded by USDA-NIFA SCRI grant with Award No. 2011-51181-30635.
- Total value of grant, including USDA funding and matching contributions, reached over \$9 million. Initially received \$2.1 million from NIFA, with an additional \$2.5 million in USDA awards, bringing combined budget to around \$9 million.
- Direct SCRI amount from USDA-NIFA was \$4,563,164.

VitisGen2 (2014–2020)

- Funded under USDA-NIFA SCRI with Award No. 2017-51181-26829.

- Total cumulative grant amount: \$6,550,976.

VitisGen3 (2022–2027)

- Funded under USDA-NIFA SCRI with Award No. 2022-51181-38240.
- Total SCRI grant amount: \$10 million (spanning 2022–2026, approximately \$2.5 million per year).

What are Functional Genomics

Functional genomics, an AGGRI topic of interest, moves beyond traditional breeding by providing tools to directly manipulate or select for highly specific traits in grapevines. There are two primary aspects of functional genomics:

- Gene Discovery – identifying specific genes responsible for grapevine traits with high industry value including those the industry deems “urgent” including:
 - Nematode resistance
 - Powdery/downy mildew
 - Improved fruit chemistry or stress tolerance
 - Urgent traits:
 - Virus resistance:
 - *Leafroll-associated viruses*: One of the most widespread and economically damaging grapevine diseases, affecting fruit quality and yield.
 - *Red blotch virus*: Still poorly understood but increasingly implicated in significant vineyard decline and inconsistency in wine quality.
 - Trunk disease mitigation:
 - Diseases like Eutypa and Esca cause vine decline and early mortality.
 - Current mitigation practices (e.g., trunk renewal) are labor-intensive and not economically sustainable.
 - A genetic approach—developing vines inherently resistant or tolerant—offers the best long-term solution.
 - Mechanization-compatible traits:
 - The rising cost and shortage of labor make mechanization a necessity, not an option.
 - Need to prioritize architectural traits (e.g., canopy structure, synchronized ripening, pruning compatibility) that align with existing mechanical harvest and vineyard management systems.
- Functional Proof – experimentally validating that a gene causes the trait, typically through controlled trials, editing, and phenotyping. To help achieve the “functional proof”, a “Technology Readiness Level” (or similar) framework, could be used where

projects are evaluated and tracked based on how far along they are--on a scale of 1–9--for direct industry application and use to ensure:

- Clarity on expected outcomes (e.g., gene identification vs. deployable product).
- Board accountability for investing in projects with practical impact.

The typical timeline for developing a trait through functional genomics is five to six years with:

- One to two years for initial gene discovery and candidate identification and,
- Three to four additional years for functional validation (proving the gene's role and developing application tools).

Plus, the projects require continuous funding because any interruption resets progress and may waste prior investment. The critical need for long-term investment that avoids scientific backsliding is a key driver for this national assessment effort. Without continuous funding, labs are forced to shift focus or shut down efforts entirely mid-stream.

Current Funding Landscape

Only 10% of large-scale functional genomics projects have a chance of receiving funding (e.g., USDA or other grants) which offers \$2–5 million per project when, or if, awarded. Some smaller grants (typically under \$100,000) exist but are insufficient to fund full-trait development.

These sporadic and fragmented funding sources are not well suited to sustain the long-term, multi-trait, multi-discipline work required for grapevine improvement.

THE OPPORTUNITY THROUGH AGGRI

An industry-funded mechanism (via grapevine nursery assessments) that creates a reliable, grower-directed source of funding (proposing a 2.5% assessment on grapevine nursery sales generating approximately \$3 million per year) would enable:

- Funding dedicated for post-doctoral researchers focused solely on industry-prioritized traits,
- Investing in functional proof infrastructure, like phenotyping platforms and gene editing technologies, and
- Applying knowledge to mechanization-friendly traits, disease and virus resistance, and climate resilience.

As appropriate, the AGGRI Board could consider applying for state and federal grant funds (whether short-term or long-term grants) extending benefits of industry-supported-and-funded research.

Additionally, the AGGRI Board could enter agreements with researchers, allowing AGGRI to own intellectual property and influence licensing terms—such as limiting breeder royalties to avoid downstream grape grower costs.

U.S. Is Falling Behind Internationally

While the U.S. has made meaningful contributions through efforts like VitisGen, the current scale is far too small to keep pace with global competitors. The European Union currently spends over €65 million (U.S. \$75 million) annually on grapevine genetics and breeding programs. Their approach is centralized, multi-institutional, and long-term—providing the kind of infrastructure that allows for true transformation in grapevine health and productivity. EU programs actively integrate phenotyping, bioinformatics, and breeder support pipelines, which sets a high bar.

In contrast, U.S. research is fragmented, underfunded, and lacks a cohesive national strategy. Grapevine genetics research competes with other crops in USDA grant programs and is rarely prioritized at the level needed by the grape industry. Most U.S.-based researchers operate on piecemeal grants or rely on short-term partnerships, which stifles innovation.

A nationally coordinated research and promotion (R&P) program funded by industry assessments would create continuity in research, align goals with industry pain points, build institutional partnerships with institutions including USDA-ARS and land-grant universities (and others), and ensure outcomes are accessible to all growers, not just those working with select private breeders.

Complementary, Not Competitive

The proposed AGGRI effort is not in competition with existing research programs like AVF (American Vineyard Foundation), NGRA (National Grape Research Alliance) or some state commodity commissions. Instead, AGGRI is intended to fill a specific and underfunded niche: long-term, high-risk/high-reward functional genomics research and trait development. Current programs like AVF, state commodity commissions, and others can continue to fund shorter-term, applied field trials and extension efforts, while AGGRI builds the genomic and genetic infrastructure that underpins future cultivars.

Duplicative Efforts

A search was done in the Federal Register for similar grapevine assessment programs that might duplicate, overlap, or conflict with this proposed program and none were found.

In addition, the Working Group provided the current research assessments paid by nurseries in California, Oregon, and Washington, noting none are duplicative nor do they fund genetic research:

California:

- Fruit Tree, Nut Tree and Grapevine Improvement Advisory Board (IAB)
 - <https://www.cdfa.ca.gov/plant/pe/nsc/iab/index.html>
 - 1% annual assessment on gross sales paid by California producers of deciduous pome and stone fruit tree, nut tree, olive tree, and grapevine nursery stock.
 - \$744,571 collected in 2025 on grapevines
 - Support goes to:
 - Foundation Plant Services (FPS) at University of California Davis
 - Prunus necrotic ringspot virus and prune dwarf virus testing in registered trees
 - Virus testing and clean-up of new fruit and nut tree varieties
 - Testing for grapevine fanleaf virus and grapevine leafroll-associated viruses and vine mealybug trapping in grapevines
 - Disease and pest-resistant varieties and alternatives to fumigants
- Foundation Plant Services at UC Davis
 - <https://fps.ucdavis.edu/fgrmaterials.cfm>
 - User fee (not assessment) currently set at \$0.08/unit (for a cutting, ungrafted vine, or non-certified vine) and \$0.096/unit for certified grafted vines
 - Funds are primarily used to support maintenance and testing of Foundation blocks
- California Grape Rootstock Commission
 - <https://graperootstock.org/>
 - By state law, all nurseries that produce, and /or use or distribute grape rootstock are required to pay yearly assessments
 - Assessment: \$0.02/unit
 - \$387,850 collected 2024-2025
 - ~\$200,000 to breeding program
 - Funds research relative to pests, diseases and environmental factors:
 - Nematodes
 - Phylloxera
 - Red leaf viruses
 - Drought/salt tolerance
- Pierce's Disease/Glassy Wing Sharpshooter Board
 - https://www.cdfa.ca.gov/pdcp/PD_GWSS_Board.html
 - Assessment: 0.139%/crop value
 - Rate averaged \$1.40 per \$1,000 of value and remains at \$1.25
 - \$2.7 million collected
 - \$1,990,000 for new projects
 - \$866,000 for continuing projects
 - Since 2001, \$62,100,000 invested in research
 - Research includes:
 - Glassy-winged sharpshooter
 - Pierce's disease
 - Grapevine leafroll
 - Grapevine red blotch
 - Mealybug pests
 - Grapevine fanleaf
 - Spotted lanternfly

- Brown marmorated stink bug
 - www.cdffa.ca.gov/pdcp/Documents/2025_Research_at_a_Glance.pdf
- American Vineyard Foundation
 - <https://avf.org/>
 - Voluntary contributions
 - ~\$1.25 million collected annually
 - Based on industry input, research priorities include:
 - Viruses – red blotch, leafroll, pierce’s disease, and their vectors
 - Changing environment – reduce impact of heat events and water stress on vine yield and quality
 - Vineyard sustainability – reduced water use while maintaining yield and quality; improved input efficiency – nutrients; reduction of labor requirements and chemicals
 - Wine sensory to chemistry relationships – identifying & managing impact compounds
 - Improved winemaking practices – meeting evolving wine style trends
 - Winery sustainability – reduction of wastewater, chemicals, & environmental impact

Strategic Rationale for AGGRI Investment

At a November 2023 grape industry meeting held in conjunction with USDA ARS scientists in Beltsville, Maryland, growers and geneticists discussed the potential for grapevine advancements. After the meeting, noting the lack of targeted grapevine research, grapevine nursery representatives began exploring options to establish a unified effort focused on improving grapevines rather than mitigating impacts of insects, diseases, or other external factors on grapes.

An initial meeting of commercial grapevine nurseries was held in Sacramento, California in January 2024 confirming enough interest by commercial nurseries to start widespread outreach to additional nurseries and grape industry organizations across the country. While grape industry organizations were relatively easy to identify and find, the search for commercial grapevine nurseries proved challenging.

Neither USDA nor other state or federal agricultural agencies maintain a listing or registry of all commercial grapevine nurseries. Helpful but not comprehensive sources included university viticulture programs, industry surveys, and state certification programs:

- State Certification Programs: State agricultural departments track licensed and inspected grapevine nurseries that sell certified planting stock:
 - Washington State Department of Agriculture (WSDA) publishes an annual participant list
 - California Department of Food and Agriculture (CDFA) maintains strict regulations and lists for certified grapevine material
- University Directories: Regional agricultural extensions compile lists of commercial nurseries in their growing area for use by grapegrowers:

- Ohio State University grapevine nurseries directory
- Michigan State University grapevine list
- National Clean Plant Network (NCPN) consists of university centers that supply clean grapevine rootstock and scion materials to commercial nurseries
- USDA National Agricultural Statistics Service (NASS) does not have a standalone "grapevine nursery count," they track total horticultural and nursery operations in the USDA Census of Horticulture

The North American Industry Classification System (NAICS), used by federal agencies to classify businesses by their primary industry, was also explored. Each digit in their six digit code helps narrow from economic sector to subsector, to industry group, to NAICS industry then to national industry. The NAICS code that comes closest to finding commercial grapevine nurseries is “Nursery and Tree Production”. There are 5,572 businesses on that list. Within that category is the SIC code called, “Ornamental Floriculture and Nursery Products”. The Standard Industrial Classification (SIC) classifies industries by business activity with a four-digit code and is being replaced by the NAICS code but some agencies still use the SIC Codes. There were 1,648 businesses listed.

Based on this search, a list was purchased from NAICS as a comprehensive source listing grape and/or fruit tree nurseries (111421 Nursery and Tree Production). Unfortunately, after copious discussions with NAICS staff to finetune the list for specificity (commercial grapevine nurseries), the purchase was ultimately refunded.

Subsequently, one of the Working Group members researched websites of state departments of agriculture in Montana, Wyoming, Nevada, Arizona, New Mexico, North Dakota, South Dakota, and Missouri for nursery lists and/or certified nurseries. To refine these lists, an AI agent was used to cross-check the downloaded business names against internet searches using keywords such as "vine," "grape," "winegrape," "tablegrape," "juice grape," and "propagation." If a business matched these criteria, there was an attempt to verify the listing by visiting the company’s website to confirm the company propagated grape plants.

Additionally, other members of the Working Group provided input to a master list based on industry knowledge, peers, colleagues and competitors. An intern was hired from California Polytechnic State University to contact (calls, emails, and letters) and verify nurseries on the accumulated list. Once the intern returned to classes after the winter break, another Working Group member volunteered their staff to contact remaining possible leads for commercial nurseries.

Just 23 commercial grapevine nurseries who propagate were identified with 12 of them deemed not “assessable” based on the small or very small nature of their business. The Working Group—now identified to represent about 90% of all commercial grapevine nursery sales—after several discussions, determined that if a nursery had business totalling less than \$250,000 per year, the entity was “small” and should be exempted.

The Working Group nurseries agreed that without funding, the U.S. industry risks falling behind the genetic research occurring in other countries and/or becoming dependent on proprietary

breeding systems, excluding general grape growers from access to cutting edge technology that improves grapevine genetics.

If the industry wants access to game-changing traits, it must invest at a level appropriate to the challenge. The proposed \$3 million per year investment (via 2.5% nursery assessment) is not arbitrary—it's based on the cost of pursuing two to three traits at a time, with full genomics, bioinformatics, phenotyping, and gene editing pipelines.

Industry-Driven Direction

AGGRI can serve not just as a funding mechanism, but as a strategic platform to direct research toward the traits that matter most to grape growers—virus resistance, trunk disease durability, machine-readiness, etc. There is a need for a cross-sector coalition (nurseries, growers, researchers) that can speak with one voice to USDA (and other agencies/institutions), align goals nationally, and accelerate delivery of outcomes that improve productivity, reduce input costs, and support a more sustainable future for the grapevine nurseries that underpin the juice, raisin, table, and wine industry sectors.

Public–Private Partnership Opportunities

A core advantage of forming a USDA-sanctioned Research and Promotion Program is the AGGRI Board's ability to enter into an agreement with researchers. Under such an agreement:

- Intellectual property (e.g., gene sequences, validated markers, or edited lines) developed using assessment funds can remain under the control of the AGGRI Board,
- control prevents downstream monopolization by breeders or institutions, and
- AGGRI Board can stipulate, for example, that growers are not charged royalties for traits developed through their own assessments—a major incentive and a major protection.

Financial Model

The proposed model involves collecting a 2.5% assessment on grapevine nursery sales. This rate was reverse-engineered from research cost modeling that would fund the ability to pursue two to three traits simultaneously, support genomics, bioinformatics, phenotyping, and gene editing, as well as fund postdoctoral research focused solely on product development. As a benchmark, VitisGen's annual cost for one trait was approximately \$1.7 million. AGGRI's target budget of \$3 million per year would allow for broader reach as well as resilience. The funds would allow the grape industry to directly invest in economically significant traits instead of relying on unpredictable grant cycles or external entities.

A 2.5% assessment on sale of plant material (before other assessments, royalties or taxes are added) allowing an annual budget of approximately \$3 million/year assumes inclusion of both the cost to administer the program and the required AMS reimbursements. Based on input from AMS, on an annual basis, charged cost for AMS oversight is between 1% and 5% for a specialist assigned to this program, agency overhead, salary/benefits, travel, review time, and contracting

time. The recommendation is to assume 5%. AMS reimbursements along with administration costs both have a not-to-exceed figure set by USDA AMS:

- 5% for government oversight/reimbursements (or \$150,000)
- No more than 15% for all other administration (or <\$450,000)

This does not include an AMS recommended reserve. It is intended that, by the date of the first continuance referendum, AGGRI's financial reserves would cover at least one year's administration costs as well as any liabilities such as leases, severance, contract provisions, etc., estimated at \$700,000. In order to achieve this goal, AGGRI will, for the first seven years of operation, set aside \$100,000 annually into reserves.

AMS also notes that a letter of credit at \$150,000 is required upon proposal submission which has been submitted.

The assessment would be on a commercial nursery's grapevine sales. Most grapevine sales take place between April and August and nursery preference is that AGGRI collects assessments annually on a calendar year basis to coincide with a nursery's yearly production cycle. For example, assessments on 2026 nursery sales would be collected from nurseries by AGGRI no later than March 31, 2027.

Based on input from members of the AGGRI Working Group, below is a chart of a typical range of sales prices per item sold to grape growers:

SALES ITEMS TO CUSTOMERS	PRICE RANGE
Budwood Cutting - Typically a five bud scion cutting of a grape producing variety used for field grafting	\$1.00-\$1.50
Rootstock Rooting - An ungrafted non grape producing plant made from a rootstock cutting, typically grown out in a field, that will require field grafting to a grape producing variety	\$2.50 - \$3.25
Own Rooted Vine – An ungrafted grape producing plant made from a budwood cutting, grown out in the field or greenhouse	\$2.50 - \$3.25
Benchgraft – A grape producing plant made from a single bud of a budwood cutting, grafted onto a rootstock cutting, grown out in the field or greenhouse.	\$4.00- \$8.00 Price varies depending on plant length (12" – 36")

Notes:

- *Own Rooted Vines are used only in certain regions of the U.S.*
- *California uses benchgrafted vines exclusively.*

Because of the varied costs of the items sold, the preference is to assess as a percentage of the sales price (2.5%) as opposed to applying a separate equitable assessment rate per unit to the various sales items and their respective prices. Additionally, a percentage of sales price assessment more effectively keeps up with inflation.

Realistic Timeline for Implementation

Based on USDA AMS procedures and stakeholder readiness, assessments would begin (approximately) 2028 which would follow the requisite USDA review, comment period, and referendum. Then, full, reliable research funding would flow by 2029 (based on assessments from 2028 sales), allowing ample time to build awareness and structure. The staged timeline provides breathing room for growers and nurseries to plan and integrate the program without sudden financial impact.

Options: National Model vs. Private or State Funding

A nationally coordinated model enables equitable cost-sharing across the country, not just in large grape-growing states prevalent in each of the grape sectors (table, wine, raisin, and juice). The model also allows centralized and industry-specific governance to direct priorities based on industry-wide needs. National assessment dollars can also be used to attract USDA, university or even private co-investment for matching dollars that leverage assessment funds.

Conversely, private efforts (like breeder royalties or foundation support) often limit access to improved grapevine materials to the paying licensees, often focus on a narrow set of traits, or lack transparency and alignment with grower needs.

State commissions are important, but are (necessarily) constrained by geographic mandates and political limitations--making federal-level coordination essential for comprehensive trait development. A Research and Promotion Program would allow:

- Higher funds pool due to national scale
- More flexibility in assessing and who is allowed to vote as compared to state and federal Marketing Orders
- Relatively faster/more defined regulatory and approval process (about one and a half years)
- Can be confirmed with simple majority (51%)

Other alternatives were considered including marketing orders and forming a trade association. Marketing orders are normally structured to regulate product quantity and/or quality with a scope limited to the smallest practical region or area possible and has USDA oversight. Marketing orders can take two or more years with a complex regulatory and approval process requiring a two thirds voting majority to confirm with the ability to raise less funds with a limited scope. And, they are generally viewed negatively by growers/producers.

Creating a trade association does not require industry buy-in, has no government oversight but has regulatory and operational flexibility to promote industry initiatives. However, funding can be limited with no incentives or requirements (assessments) creating a “free ride” effect. Additionally, uniting an industry to identify, focus and fund industry-wide problems would be challenging.

While the funding raised from a national assessment is critical for success, the effort is not just about funding—it's about building the unity, infrastructure and governance the U.S. grape

industry currently lacks to tackle its most pressing genetic challenges. By organizing under the USDA AMS R&P framework, the industry can control outcomes, including IP use and distribution, concentrate investment on industry-driven priorities, focus on outcomes (not just knowledge) and build a durable public-private structure that endures beyond often sporadic grant cycles, political terms, or individual organizations.

Industry Analysis:

The information below highlights both the commercial grape industry—the ultimate beneficiary of grape genetics research and the driver of research needs—as well as the grapevine nursery industry—those who would be assessed under the AGGRI funding model.

COMMERCIAL GRAPE INDUSTRY

The U.S. commercial grape industry includes four sectors—wine, table, raisin, and juice grapes—and is one of the country’s most economically significant fruit industries. Production is geographically concentrated, especially in California. California produces 99% of U.S. table grapes, is the core region for raisin grapes, and produces the significant majority of wine grapes. The industry’s economic footprint is large, with wine as the dominant value-added engine. The wine industry alone generates \$323.55 billion in total economic activity and supports 1,750,000 jobs (direct, indirect, and induced), along with substantial wages, tourism spending, and tax revenues.

U.S. grape sectors face significant restraints from climate-related agricultural challenges. The West Coast has experienced increasingly severe droughts and temperature fluctuations that affect grape harvests. These conditions create supply volatility and can lead to price spikes, making it difficult for processors and manufacturers to maintain stable costs. Water scarcity issues have prompted some growers to switch to less water-intensive crops, further tightening domestic supply despite market demand.

What follows is a consolidated grape industry profile including volume, value, and geographic distribution across the four sectors.

Industry Scope And Structure (All Sectors)

The U.S. grape industry is not one market but four interconnected sectors with distinct product pathways:

- Table grapes: fresh consumption supply chain.
- Raisin grapes: dried fruit processing supply chain, with strong processor/co-op concentration.
- Wine grapes: fermentation and packaged beverage supply chain; major value-added and tourism linkage.
- Juice grapes: processing into juice, jelly, and related products (primarily two grape varieties—Concord and Niagara).

Across these sectors, the U.S. has nearly 1,000,000 acres of grape-bearing land. Wine production occurs in all 50 states (as of 2023).

According to USDA National Agricultural Statistics Service (NASS), grape utilized production in 2024 (the most recent statistical year) totaled 5,400,000 tons: 872,610 tons for the fresh market and 4,530,000 tons for processing. Bearing acreage was estimated at 923,000 acres. The value of the crop totaled \$6.19 billion.

It should be noted that starting in 2024, estimates for grapes began in New York and Oregon.

National Volume/Value Indicators

There are two national grape production volume and value anchors:

- Over 5,590,000 tons of grapes were produced in 2025 on about 1,000,000 acres
- Utilized grape production was measured at \$6,190,444,000 in 2024 making grapes the highest value fruit crop

Table grapes (volume/value indicators):

- 99% of U.S. table grapes are grown in California with 872,610 tons produced in 2024
- Table grapes for the fresh market were valued at \$1,693,032,000 in 2024
- Table grapes include 80+ varieties in three colors (green, red, black)

Raisins (volume/value indicators):

- U.S. raisin industry in 2025 is valued at approximately \$925.4 million and is projected to reach \$1.15 billion by 2032
- 2025 crop is expected to exceed 15,000 metric tons, a 30% increase over 2024
- Major players, including Sun-Maid and Lion Raisins, account for over 40% of U.S. production
- Sun-Maid, alone, produces more than 200,000,000 pounds (100,000 tons) of raisins per year
- Sun-Maid is one of the largest raisin and dried fruit processors in the world and is a cooperative with about 850 family farmers

Winegrapes and wine (volume/value indicators):

The U.S. wine industry is a major economic engine, generating over a billion dollars annually and supporting nearly 1,800,000 jobs. The U.S. ranks among the top four global producers, with over 75% of production coming from California, followed by New York, Washington, and Oregon.

Economic Impact Data:

- Total Economic Impact: Over \$323.5 billion in 2025 (up from \$276 billion in 2022)

- Jobs Supported: Approximately 1,800,000 jobs
- Total Wages: Approx. \$102.1 billion
- Taxes Generated: \$46 billion in federal, state, and local business taxes
- Tourism Impact: Over 108,000 jobs and \$11.8 billion in economic activity

Production and Consumption:

- Top Producers: California (81%), followed by New York, Washington, Oregon
- Consumption: In 2022, Americans consumed 964,000,000 gallons of wine, with per capita consumption at 2.86 gallons
- Wineries: California leads with over 4,391 wineries, followed by Oregon (774), Washington (772), and New York (395)

Top State Economic Impacts (2025 Study estimates):

- California: \$100 billion
- New York: \$13.8 billion
- Texas: \$13.1 billion
- Florida: \$11 billion
- Washington: \$9.6 billion

According to the (CA) Wine Institute, California's 81% of total U.S. wine production in 2024 came to 508,246,015 gallons of the 647,701,604 total gallons produced. Of the 923,000 total U.S. acres, California holds 550,000 acres.

Juice grapes and juice (volume/value indicators)

In 2024 USDA NASS reported 151,500 tons of utilized production for juice-type grapes with National Grape Cooperative (NGC) described as the world's largest producer of Concord and Niagara grape products. NGC is a farmer-owned cooperative made up of growers across multiple growing regions and handles processing/marketing into juice, jelly, fruit snacks, and more under the brand name: Welch's.

The total value of utilized grape production in the United States for 2024 was approximately \$18.9 billion. Juice grapes are grown primarily in Washington followed by New York, Pennsylvania, Ohio and Michigan. The national value fluctuates based on seasonal yields and pricing. The broader grape juice market, which includes concentrates and ready-to-drink products, is valued significantly higher at the consumer level, with projections reaching \$561.1 million by 2029.

- The juice grape sector has seen a downward trend in production, with annual reductions of 7-10% in acreage and tonnage over the last five years
- Prices for juice grapes have recently fluctuated between \$110 and \$320 per ton, heavily influenced by supply levels and competition from concentrate imports
- Washington, the nation's leading producer of juice grapes, saw its production value drop to \$39.7 million in 2024, a 38% decrease from 2023:

- Washington's utilized juice grape production for 2024 was 151,500 tons, down 16% from the previous year
- Concord grapes account for roughly 90% of Washington's juice grape production
- While small (6-7% of Washington's juice grape sector), the organic segment has shown value increases, recently reaching approximately \$3.9 million in some growing regions

Geographic Distribution Of Domestic Production

California is the geographic anchor for the commercial grape industry with 99% of U.S. table grapes produced there. Sun-Maid's cooperative model ties raisin grape production to California's Central Valley, within roughly 100 miles of Fresno for its core grower base. Although wine is produced in all 50 states (as of 2023), California produces over 80% of U.S. wine followed by Washington, New York, and Oregon.

- Table grapes: California dominates (99%)
- Raisins: California produces 100% of U.S. raisins, primarily the Thompson Seedless variety, on about 100,000 acres. Production is concentrated in California's Central Valley (Sun-Maid grower geography) with roughly 60% of the world's supply centered in the southern portion (San Joaquin Valley).
- Wine: nationwide (all 50 states) but concentrated in California (81%), followed by Washington, New York, and Oregon
- Juice is primarily produced in Washington State (50%) with New York the second largest producer followed by Michigan, Pennsylvania, and Ohio

National Grape Statistics

Table grapes:

Californians have been cultivating grapes for more than two centuries, with 99% of U.S. table grapes produced in California's warm, dry climate that is ideal for grape growing. There are more than 80 grape varieties grown in three colors—green, red and black—and are in season from May through January.

In 2025, the U.S. table grape industry was characterized by a "fair season" with high-quality, flavorful fruit driven by ideal, moderate weather conditions. While early, California production estimates varied, with some projections indicating a 4% drop to roughly 83,000,000 boxes—the second lowest since 2008–2009—due to reduced acreage. Storage holdings increased in mid-October 2025, with strong inventory in varieties like Autumn King and Allison. There is a continued focus on new, licensed, high-flavor, and crunchy, colored varieties, with increased mechanization in vineyard operations to manage labor costs as well as increased use of AI-driven irrigation and disease-prediction platforms, which can reduce water and chemical costs by up to 30%.

The global table grape market is experiencing high value, with U.S. demand growing 27% over the last 20 years. U.S. table grape exports for the 2024/2025 season dropped 25% from the

previous season to 702,000,000 pounds, but remained 8% higher than the previous off-year. There is growing demand in the Middle East, Europe, and Asia, with shipments to these regions in the 2024/2025 season up 5%, 27%, and 6%, respectively, over their six-year averages. A new "Grape Global Group (GGG)" (Peru, Chile, Mexico) was formed in 2025 to increase global consumption and manage logistical/climate challenges.

Raisins:

Raisins are sun-dried or mechanically dehydrated grapes, primarily produced from Thompson Seedless grapes in California, which accounts for nearly 100% of U.S. commercial production. These naturally sweet dried fruits contain concentrated nutrients including fiber, potassium, and antioxidants, making them popular in snacks, baked goods, and cereal products. The industry maintains strict quality standards with moisture content typically controlled between 14-15% for optimal shelf stability.

The raisins grown in California, primarily by Sun-Maid, one of the largest raisin and dried fruit processors in the world, are then packed for consumer sales or sold as ingredients to other companies.

Raisin companies in the U.S.:

- Sun-Maid Growers of California
- National Raisin Company
- Dole Packaged Foods, LLC
- Mariani Packing Company
- Del Monte Foods, Inc.
- Traina Foods
- Sunview Vineyards
- Gerbs Allergy Friendly Foods
- Sunsweet Growers Inc.

Market growth is driven by increasing consumer demand for convenient, nutrient-dense snacks and clean-label ingredients. However, climate change impacts on grape yields and water availability in California present ongoing challenges. The sector has responded with improved water efficiency (45% reduction in usage since 2000) and sustainable farming practices now adopted by 82% of producers. Organic raisins currently represent 35% of production as health-conscious consumers shift preferences.

The U.S. raisin market is a mature, nationally distributed consumer category supported by a highly concentrated production base. Commercial raisin output is produced almost entirely in California. The U.S. is the dominant raisin producer and consumer, accounting for approximately 95% of regional production and consumption, which reinforces the U.S. role as the primary driver of North American market conditions.

On the demand side, raisins are a widely purchased pantry staple tied to broader health-and-wellness snacking trends. Over 90% of American households purchase dried fruits annually, and

consumer preference patterns favor nutrient-dense snacks. This demand is mirrored by an extensive commercial footprint: processing facilities operate at roughly 92% capacity across 38 plants nationwide, indicating a system running near full utilization to meet current needs. Emerging opportunities exist in the food service sector, where raisins are finding new applications in restaurant dishes, artisanal baked goods, and craft beverages. The rapid growth of fast-casual dining concepts has increased demand for premium ingredients like raisins as flavor enhancers and visual components. Distribution is broad and diversified, reaching approximately 225,000 retail points across the country and showing strong momentum in direct-to-consumer channels, with e-commerce sales reported as growing by 85%.

Sun-Maid, the largest U.S. raisin brand reports producing more than 200,000,000 pounds of raisins per year. The competitive landscape is concentrated, with Sun-Maid holding roughly 35% market share and other large packaged-food companies collectively accounting for a substantial portion of domestic sales through a mix of branded and private label products.

Organic raisins represent about 35% of total production and command premium pricing, while sustainability practices are widely adopted, with 82% of producers using water-efficient or eco-oriented techniques. Technology is a major contributor to competitiveness, with automation delivering a reported 58% efficiency gain in sorting, cleaning, and packaging. Quality and compliance requirements are also value-protecting mechanisms, including moisture content controls maintained through rigorous testing.

From a global market-placement perspective, the U.S. is increasing exports particularly toward Asian markets, citing a 67% increase in U.S. raisin exports since 2019 and noting new dehydration facility investments totaling \$28 million by major processors to support export demand.

Winegrapes:

Wine has been produced in the United States since the 1500s, with the first widespread production beginning in New Mexico in 1628. As of 2023, wine is produced in all 50 states, with California producing 81% of all U.S. wine followed by Washington, New York, and Oregon. The North American continent is home to several native species of grape, including *Vitis labrusca*, *Vitis riparia*, *Vitis rotundifolia*, and *Vitis vulpina*, but the wine-making industry is based almost entirely on the cultivation of the European *Vitis vinifera*, which was introduced by European settlers. With more than 1,100,000 acres under vine, the U.S. is the fourth-largest wine producing country in the world after Italy, Spain, and France.

The winegrape industry is defined by place and identity as well as the grapes themselves. Winegrapes are typically grown and marketed through a connection to origin—specific regions, sub-regions, and vineyard sites that develop reputations over time for distinct growing conditions and wine styles. This “place-based” structure shapes how growers and wineries position products, communicate quality, and build loyalty. It also creates a practical marketing pathway for winegrape producers: the ability to differentiate through vineyard story, farming approach, and regional reputation rather than competing only on commodity terms.

A second defining feature is the industry's reliance on varietal and clonal specialization within *Vitis vinifera*. Because many buyers and consumers recognize wines by variety, winegrape demand and marketing often revolve around variety, site, and intended wine style. For growers, this creates a marketing advantage when they can align their fruit with a clear end-use narrative—whether that is premium site expression, consistency for a house (winery) style, or suitability for a particular production method. In practice, the strongest positioning usually comes from a combination of measurable vineyard performance (quality consistency, reliable ripening windows, and clean fruit) and a story that helps the winery sell the finished bottle.

The industry is also characterized by a tight relationship between agricultural production and brand-driven consumer markets. Unlike most other crops, winegrapes are not marketed as a standalone consumer product; but as an input into a highly differentiated branded category. That means winegrape marketing opportunities often hinge on being an effective partner to the winery's brand strategy. Growers who can provide strong documentation, reliable communication, and vineyard-level transparency—farming practices, traceability, and clear quality parameters—become more attractive to wineries seeking both risk reduction and strong storytelling.

For market development, there are recurring marketing opportunities that do not depend on volume or price. Sustainability and responsible farming are increasingly central to how wineries differentiate, and growers can play a direct role by documenting and communicating practices in a way that is usable and legitimate for winery marketing. Similarly, traceability and verification (clear records, block-level detail, and consistent specifications) can be positioned as a quality and integrity asset. These are not just operational benefits—they can become marketing “proof points” for wineries, distributors, and consumers when presented in a clear, verifiable format.

The nationwide footprint of U.S. wine production creates a broad set of regional marketing lanes. Regions outside the dominant producing areas can build market presence through specialization including unique regional styles, locally adapted vineyard practices, or niche varieties that create distinction. For growers, this often translates into opportunity when they can help the winery tell the story of “Why here?” and “Why this vineyard?” The more a grower can contribute to those answers with credible information and a coherent narrative, the more they can move from being a supplier to being part of a winery's differentiation strategy.

Plus, wineries need a consistent, reliable source for their winegrapes year after year. Using research to address obstacles to consistency and reliability such as pest and disease pressure, weather variability, smoke impact, drought impact, and other external factors can improve product stability and business sustainability—for both grower and winery.

Juice grapes:

The National Grape Cooperative (NGC) is a farmer-owned cooperative that owns Welch's and is the world's largest producer of Concord and Niagara grape products. Founded by farmers across multiple growing regions, the co-op handles the processing and marketing of grapes into products like juice, jelly, and fruit snacks, ensuring a stable market for its members and continuing the legacy of the original Welch's brand.

The U.S. juice grape sector (primarily Concord and Niagara grapes) is best understood as a processing-centered agricultural supply chain that is geographically concentrated in a handful of long-established growing regions and anchored by cooperative marketing and large-scale processing. Unlike winegrapes, juice grapes are grown chiefly for juice, jelly, and related shelf-stable products, which shapes everything from contracting and pricing structures to grower organization and regional infrastructure.

From an industry-structure standpoint, a defining feature is the role of the National Grape Cooperative and its marketing/processing subsidiary, Welch's. Welch's is collectively owned by 670 family farmers spanning four growing regions across New York, Pennsylvania, Ohio, Michigan, and Washington, with products sold throughout the U.S. and in approximately 50 countries.

COMMERCIAL GRAPEVINE NURSERY INDUSTRY:

The U.S. commercial grapevine nursery industry is best described as a western-concentrated domestic production system anchored by California at tens-of-millions scale, supported by meaningful but smaller Pacific Northwest production, and complemented by smaller regional nurseries in the East and Midwest. The industry's economic value is strongly shaped by clean plant centers and state certification programs and by the premium associated with verified, disease-managed planting material, even though available information does not allow a calculation of total grapevine plant sales dollars.

The U.S. commercial grapevine nursery industry is a specialized segment within the broader U.S. nursery/greenhouse ("nursery stock") sector. While the nursery stock sector itself is estimated at \$4.5 billion in sales (reported in the 2019 USDA NASS Census of Horticultural Specialties), there is no single current national statistic that totals how many grapevines are produced or sold each year in the United States. As a result, the most defensible picture comes from state program tallies, clean-plant/certification programs, and large-nursery reporting, combined with transparent demand-side modeling. To date, only Washington, New York and California have state-managed grapevine nursery certification programs for which reportable sales and assessments are available.

Allied Grape Growers (AGG), a 500-member California-based grape growers cooperative marketing association annually compiles a survey of winegrape vine sales and planting trends, which further informs grapevine nursery sales indicators.

The AGG 2025 Nursery Survey data indicates California sold approximately 7,700,000 winegrape vines, representing an estimated 7,200 acres of new planting. The survey points to a restrained planting environment across the West Coast rather than a broad return to aggressive expansion as witnessed over the past decade.

In Washington, the survey shows a total of 61,203 acres in 2023, with an estimated 1,573 acres planted in 2024 and 315 acres planted in 2025. However, significant vineyard removal since 2023 shows less than 50,000 acres in 2025.

In Oregon, total acreage is 47,343, with 39,180 harvested acres and an estimated 696 acres planted in 2025. This points to modest overall expansion rather than aggressive growth.

Value of the Industry

Value can be described in terms of:

- Industry's placement inside a multi-billion-dollar nursery stock sector
- Factors that drive higher per-vine value (clean/virus-tested status, proprietary varieties/clones, rootstock, and plant format)

A dollar value of U.S. grapevine plant sales is difficult to calculate with available statistics and information lacking average price per vine, revenue per vine, or total grapevine sales dollars. Because the California Fruit Tree, Nut Tree, and Grapevine Improvement Advisory Board (IAB), under the California Department of Food and Agriculture (CDFA), has a 1% assessment on all sales, the California figures provide legitimacy to the value of the grapevine nursery industry.

Additionally:

- The broader U.S. nursery stock sector is multi-billion dollars (~\$4.5 billion in nursery stock sales from the 2019 horticultural census).
- Additional nursery-sector revenue figures include \$13.8 billion total revenue for the U.S. nursery industry; \$2.2 billion for the California nursery industry.
- Current state assessments provide a glimpse into the value of the grapevine nursery industry:
 - California 2024-2025 sales: \$120,788,400; assessments (1%): \$1,207,884
 - Washington 2024-2025 sales: \$4,177,110; assessments (5%, \$0.1max): \$139,237
 - New York 2024-2025 sales: \$9,000,000; assessments (approximately) (\$0.5/unit): \$68,161 (assessment is on certified vines only)

The main drivers increasing plant value (per vine) and demand include:

- Clean/virus-tested/certified status: Clean plant material is a major value driver due to disease-control benefits and public investments in clean plant centers are described as having high estimated returns by reducing disease losses
- Variety/clone and intellectual property: Patented or proprietary material commands premiums
- Rootstock choice: Affects performance and disease/pest resilience; influences pricing
- Plant format: Container vs. dormant bareroot can change cost structure and price
- Shipping and seasonality: Timing, logistics, and availability affect pricing dynamics

Even without total dollar value, the industry's economic significance is tied to biosecurity and certification systems and to the premium associated with clean, verified planting material. Based

on available information, the Working Group estimates the value of the grapevine nursery industry at \$120,000,000.

<u>Region / State</u>	<u>Production volume (est.)</u>	<u>Implication</u>
California	27,334,821 vines sold (2023–2024)	National center w/ tens-of-millions annual throughput
Washington	1,000,000 – 4,000,000 vines/year	Second-tier hub
Oregon	150,000 – 600,000 vines/year	Smaller than WA; at least one nursery with 150,000 annual capacity
Northeast / East (e.g., NY, PA)	NY: 130,000 certified vines/year with total 3,000,000 vines/year; PA: 20,000 – 200,000/year	Local supply and certification presence, but smaller scale
Midwest (e.g., MI)	10,000 – 100,000/year	Small to modest local capacity; not comparable to western hubs

Production Volume And Concentration

Overall, California (24 million) + Oregon (≥.15 million) + Washington (≥1 million) implies about 25,000,000 vines/year as a conservative minimum across these three areas in a representative year, recognizing that Oregon and Washington are ranges, and other states and additional California producers exist but are not fully quantified.

Risks, Trends, And Geography

Several structural characteristics shape the grapevine industry:

- Demand surges occur when vineyard expansion or replanting accelerates, increasing pressure on nursery capacity and lead times (often in multiple years)
- Biosecurity and certification are central: state certification programs and clean plant centers underpin supply; disease outbreaks or tighter movement rules can rapidly alter availability and sourcing
- Concentration risk: heavy reliance on California (and a limited set of clean plant centers) creates vulnerability to regional shocks (e.g., drought, pests/disease pressure, wildfire-related disruptions, labor or water constraints—emphasizing need for research)

Geographic Distribution Of Domestic Production

Grapevine production is geographically concentrated in the West, with California the dominant hub by a wide margin. California alone reported 24,037,417 grafted vines sold in 2022–2023 (average has been 24,500,000 each year over the past five years), an “anchor” number that demonstrates national-scale throughput from a single state. One large California nursery reportedly grafted 12,000,000 vines in a busy year. Another nursery reportedly ramped from 2,500,000 to 6,000,000 vines annually. Together, these two examples alone imply 18,000,000 vines annually in a high-output year reinforcing that the statewide total can reach tens of millions.

The Pacific Northwest is consistently presented as the second major production region after California:

- Washington: estimate range of 1,000,000 to 4,000,000 grafted vines/year (with an average of nearly 2,000,000 over the past five years), produced by four nurseries, along with substantial certified infrastructure (mother vines and registered production blocks)
- Oregon: estimate range of 150,000 to 600,000 grafted vines/year, with one nursery stating production of 150,000 grafted grapevines annually as a conservative floor

Washington and Oregon provide significant regional supply and certified production capacity, but based on the ranges provided, still remain well below California’s 20 million.

The Northeast, Mid-Atlantic, Midwest, and other states are locally important but nationally smaller and characterized as having smaller-scale nursery and grafting capacity focused on local needs and locally-adapted varieties:

- New York: a revived certification program (since 2022) includes three nurseries offering virus-tested certified vines totalling 2,500,000 over the past three years
- Pennsylvania: estimated 20,000 to 200,000 vines/year (grafted and/or bare-root); lacking a concentrated large grafting sector like the West Coast states
- Michigan: estimated 10,000 to 100,000 vines/year; typically smaller scale with occasional larger contract work

Other viticultural states (e.g., Virginia, Missouri, parts of the Midwest) have smaller nurseries supplying regional or native varieties.

Even without a national total, California establishes that U.S. commercial grapevine propagation is routinely at 20,000,000 in one state.

Impact on Small Business:

Definitions

As part of building the draft USDA AMS Order, the Working Group invested time refining key terms to avoid ambiguity in compliance and participation:

- *Producer* means the person engaged in the propagating of rooted grapevines for commercial sale and sells the grapevines or propagated propagative material into

commerce.

- *Consumer* means any person who purchases grapevines or propagative material from a first handler for the purpose of planting, growing, or otherwise using such grapevines or propagative material in commercial production, and not for resale.
- *First handler* means the first person who acquires title to or takes possession of and sells or otherwise transfers grapevines or propagative material to a consumer following production. A producer who propagates and first sells grapevines or propagative material to a consumer shall be deemed the first handler with respect to such sale.
- *Eligible first handler* means any person who, during the representative period, was subject to the Order and required to remit assessments on grapevines and propagative materials produced in the United States and sold into commerce.

These distinctions are necessary to ensure the assessment is fairly and accurately applied only to (grapevine nursery) first handler producers, avoiding confusion or unintended financial burden on downstream entities.

Businesses Subject to the Order and Assessment Parameters

The Board's programs and expenses would be paid from assessments imposed on eligible first handlers and other funds. Assessments would be levied solely on assessable sales, at a rate of 2.5% with a maximum assessment rate of 5%. Assessable sales means the total amount received from the first sale of grapevines or propagative material to a consumer that is attributable to a first handler without deduction for expenses and excludes:

- Sales of grapevines or propagative material from a producer to another producer
- Sales of certified organic grapevines (although currently there are no known organic grapevines sold in the U.S.) or propagative material that qualify for exemption
Note: Producing certified organic grapevines is problematic due to the need for pesticide applications for phytosanitary requirements when shipping. Additionally, because a newly planted grapevine requires three years to produce fruit, a grower can plant conventional vines and organically certify the vineyard land concurrently. By the time the first harvest arrives three years later, both the land and the crop achieve organic status simultaneously, rendering the purchase of certified (organic) vines unnecessary.
- Amounts attributable to transportation, taxes, assessments, royalties, or other charges not directly related to the value of the grapevines or propagative material sold

Each eligible first handler would be responsible for sending assessments and reports to the office of the Board for a fiscal year no later than March 31 of the following year. A late payment charge would be imposed on any eligible first handler who fails to pay the total amount required on or before the due date and documented on forms. In addition to the late payment charge, an interest charge would be imposed on the outstanding amount. Any eligible first handler who failed to pay assessments owed may be subject to actions under Federal debt collection procedures.

There would be no assessment to a first handler who was granted an exemption. Assessments paid on assessable sales attributable to a first handler who was granted an exemption would be

eligible for a refund. Requests for refunds would be submitted to the Board within 90 days of the last day of the fiscal period. No interest would be paid on refunded assessments.

Small Business Exemption

Working Group participants agreed that small nursery operations need to be exempted from assessments to avoid placing disproportionate burden on low-volume producers. The group acknowledged that USDA requires a clear, quantitative definition of “small business” in the proposed order. Initial considerations included the importance of using grapevine-specific income, not total revenue, for this calculation. The final threshold was set to balance:

- Protecting true small-scale propagators
- Maximizing research revenue
- Avoiding exclusion of major players

To identify a small business exemption for the purpose of the Order, the Working Group found the U.S. Small Business Administration (SBA) defines a small business for the North American Industry Classification System’s (NAICS) code (111421 Nursery and Tree Production) as one with sales less than \$3,250,000. However, grapevine nursery is a subsector of the larger nursery stock industry sector estimated at \$4.5 billion in sales (reported in the 2019 USDA NASS Census of Horticultural Specialties), where the largest business has sales roughly six times the total value of the grapevine nursery sector at \$125,000,000 which is slightly less than 3% of the broader nursery category. Beginning with this premise, the Working Group determined that \$3,250,000 in sales was too high of value for a small business exemption given the relatively small value and small number of businesses within the grapevine nursery sector (about two dozen total businesses). The Working Group determined that nursery-to-nursery or sales for resale would be exempt from assessment calculations, therefore a lower small business exemption value could be utilized (as compared to one based on gross sales). After polling the average sales of those within the Working Group, and understanding industry margins, it was determined that if the exemption was set too high, there would be greater possibility of creating loop holes for grapevine nursery businesses to avoid assessments and that a nursery with sales less than \$250,000 would not be considered truly commercial.

With these factors in mind and with a desire to both truly protect small businesses from undue burdens yet capture the vast majority of business activity, the Working Group determined a de minimis exemption of \$250,000 of annual assessable sales was equitable and justifiable.

Skills Necessary to Comply with Program

Staff of commercial nursery businesses already have the skills to comply with an AMS R&P Order. The information needed is no different than what a typical accounting system would track.

Nursery staff have the skills to accurately calculate, track, and bill:

- Dollars and volume of sales

- Dollars and volume of exempt sales:
 - Those sales to other producers or organic vines (although currently there are no known organic grapevines sold in the U.S.)

The difference between these two would be the reportable amount.

In addition, nursery staff already must regularly file necessary state and/or federal reports as well as submit required state assessments which are currently required in those states with certification programs: California, New York, and Washington.

The core responsibilities of staff would be to collect sales or usage data (from internal systems or partners), apply the agreed rates, and calculate what is owed to licensors or what others owe the business. They maintain detailed records, verify that reports are accurate, and flag discrepancies including underreported sales or incorrect percentages. The staff would also prepare periodic reports (monthly or quarterly), generate invoices or payment summaries, and ensure payments are processed on time.

A typical day would involve working in spreadsheets or accounting software, reviewing contracts to confirm royalty terms or other terms, reconciling data from different sources, and communicating with internal teams (sales, accounting) or external partners. There is often some follow-up involved—clarifying numbers, resolving disputes, or requesting missing data.

Skills include strong attention to detail, since even small errors can affect payments. Comfort with spreadsheets (like Excel), basic accounting principles, and data organization is essential. Familiarity with contracts and the ability to interpret terms like percentage rates, minimum guarantees, or tiered royalties is also important.

Industry Support:

An initial meeting of grapevine nurseries in 2024 suggested support for the concept of a national assessment for the purpose of grapevine genetic research. As a result, broader outreach began, targeting statewide grape grower organizations across the U.S. for support.

After nearly two years of networking, research, and securing grower support, in July 2025, a group of broad-based grapevine nurseries from across the U.S. met in Davis, CA for two days to outline and agree on parameters of an USDA AMS Research and Promotion Program. At the meeting, a working group was established. The group met regularly for nearly a year to inform program development.

Below is a list of state and regional grower groups (representing 90% of the planted grape acreage in the U.S.) who have committed support, most with letters:

- California Association of Winegrape Growers
 - Only state-wide member association representing winegrape growers in California
- California Table Grape Commission

- State-mandated commodity commission representing every table grape grower in California
- Idaho Wine Commission
 - State-mandated commodity commission representing winegrape growers and wineries in Idaho
- Michigan Wine Collaborative
 - Primary state-wide member association representing winegrape growers in Michigan
- Napa Valley Grapegrowers
 - Regional membership organization representing highest value winegrape growers in the U.S.
- New York State Wine Grape Growers
 - Only state-wide member association representing winegrape growers in New York
- North Carolina Winegrowers Association
 - Only state-wide member association representing winegrape growers in North Carolina
- Ohio Wine Producers Association
 - Only state-wide member association representing winegrape growers in Ohio
- Oregon Winegrowers Association
 - Only state-wide member association representing winegrape growers in Oregon
- Pennsylvania Wine Marketing and Research Program Board
 - State-authorized commodity marketing board in Pennsylvania
- Virginia Vineyards Association
 - Only state-wide member association representing winegrape growers in Virginia

Experts who provided technical expertise and served as science advisors are listed below. Two of the three listed provided letters; one retired:

- Lance Cadle-Davidson, PhD, Lead Scientist, USDA-Agricultural Research Service-Grape Genetics Research Unit, Geneva, NY
- Larry Bettiga, Farm Advisor (retired)- Viticulture, University of California Cooperative Extension, Monterey, San Benito and Santa Cruz Counties, Salinas, CA
- Nick Dokoozlian, PhD, Vice President, Grape, Wine, and Beverage Research, GALLO, Modesto, CA

Below is a list of grapevine nurseries (representing an estimated 92% of all grapevines produced in the U.S.) who have committed support, most with letters:

- Kit Johnston Farms (Advantage Vines), OR
 - Largest in Oregon, might be the only one in Oregon
- Amberg Grapevines, NY
- Casa Cristal Nursery, CA
- Double A Vineyards, NY
 - Largest grapevine nursery in NY and the largest east of the West Coast states
- Inland Desert Nursery, WA

- Largest grapevine nursery in Washington
- Knights Grapevine Nursery, CA
 - Smaller nursery serving California
- Martinez Orchards, CA
 - Serve premium wine growing regions of California and North America
- Novavine, CA
- Sunridge Nurseries, CA
 - Largest grapevine nursery in North America serving wine, table and raisin industries. Ships throughout the US, Canada, and Mexico

Efforts to identify nursery industry members included:

- Sought guidance and recommendations for lists of nurseries from states with clean plant programs and/or are major grape producing states (sans California as contacts were already established from Working Group):
 - Marc Fuchs, PhD, Professor, School of Integrative Plant Science, Plant Pathology and Plant-Microbe Biology Section, Cornell AgriTech, New York
 - Dipak Poudyal, PhD, Plant Health Virus Certification Program Lead, Oregon Department of Agriculture
 - Christie Almeyda, PhD, Director, Micropropagation and Repository Unit, Department of Entomology and Plant Pathology at North Carolina State University
 - Violeta Tsoleva, PhD, Professor Viticulture & Development Biology, and Director, Center for Viticulture & Small Fruit Research, Florida A&M University
 - Scott Brooks, Haley Palec, Benita Matheson, and Segun Akinbade, Plant Services Division, Washington State Department of Agriculture
 - Elizabeth Dorman, Pest Detection, Diagnostics, and Response Unit Manager, Michigan Department of Agriculture
 - Esmaeil Nasrollahiazar, Viticulture Extension Educator, Michigan State University
- Using NAICS (North American Industry Classification System Code) purchased a comprehensive list of grape and/or fruit tree nurseries (111421 Nursery and Tree Production) for \$1,670.
- Working Group member researched websites of state departments of agriculture in Montana, Wyoming, Nevada, Arizona, New Mexico, North Dakota, South Dakota, and Missouri for nursery lists and/or certified nurseries. To refine these lists, he used an AI agent to cross-check the downloaded business names against internet searches using keywords such as "vine," "grape," "winegrape," "tablegrape," "juice grape," and "propagation." If a business matched these criteria, he then attempted to verify the listing by visiting the company's website to confirm that the company propagated grape plants.
- Working Group provided input to the master list based on industry knowledge, peers, colleagues and competitors.
- Hired an intern from California Polytechnic State University to contact and verify nurseries on the accumulated list.
- Working Group member volunteered their staff to contact remaining possible leads for commercial nurseries.