



The Future of Pistachio Orchard Productivity

ACCELERATING SELECTION WITH DNA MARKER ASSISTED BREEDING

Using modern genetic breeding techniques called Marker Assisted Selection (or MAS) the time and effort it takes to develop new varieties or rootstocks has been greatly reduced. MAS is most effective when we know the DNA sequence that controls the traits we are interested in improving. Once we know what genes are controlling advantageous traits, we can then use that DNA barcode as a "Marker" for easy detection of seedlings in breeding populations carrying that unique identifier. As the genes are transferred from parents to offspring, we can rapidly screen the seedlings only retaining the ones with the genes of interest while discarding the rest.

Here at Sierra Gold, we are taking full advantage of DNA markers by accelerating the time it takes to select superior UCB-1 seedlings that can then be clonally propagated. As we know, compared to seedlings, clonal pistachio rootstocks lead to more uniform

and productive orchards if the right clone is used.

This new selection technology allows us to screen thousands of UCB-1 seedlings, reliably choosing only the ones that have, for example, a recently discovered gene associated with increased vigor. This vigor marker also has exciting implications for pistachio yield. Preliminary results from UC Davis researchers studying UCB-1 seedling orchards found a strong correlation between individuals carrying the vigor gene and increased yields. What this means is that more vigorous, higher yielding, clonal UCB-1 rootstocks will soon become standard throughout the industry.



Marker Assisted Selection in genetic breeding speeds up the process, and produces clonal rootstocks for orchards that are more uniform and productive.

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Owners' Message

SIERRA GOLD'S GUIDING PHILOSOPHY

Does your company have a guiding philosophy or a mission statement? One thing that has helped us stay focused over the past 72 years being in the nursery business is our "Sierra Gold Standard of Excellence" created by our company founder, Walter Berg.

Grow the finest quality nursery stock, using the most efficient production methods & innovative techniques in order to optimize the possibility of the highest production of quality crops for our customers while charging a reasonable price for the inputs involved. Conduct all production, sales and business operations in strict honesty and fairness to our employees, customers and vendors. Treat our employees, customers and business associates

with all human dignity and respect in order to promote a way of life for all that is satisfying and yet challenging while also rewarding in financial security and personal growth.

This high standard is a lot to live up to! But, having a guiding philosophy like this is like a "North-Star" helping us to navigate all the tough business decisions. We remain grateful for our founder's words of wisdom. We also remain grateful for all our loyal and hardworking employees who live this philosophy here at the nursery every day.

And, as always – we are very grateful for all our orchard customers who have placed their trust in allowing Sierra



Gold to be their nursery supplier. Please know that the entire Sierra Gold team is going above and beyond to bring value to your new orchard plantings. Happy Planting everybody!

Sincerely,

Brian Berg

Chairman, Owner

Jack Poukish President, Owner

Citrus is Back!

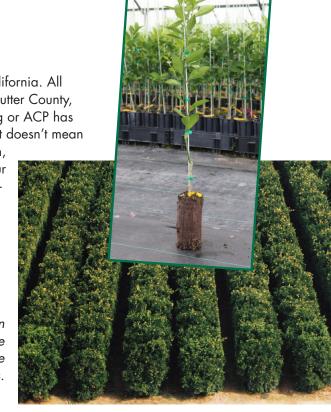
CONTAINERIZED AND CERTIFIED PEST-FREE

While not known to many, Sierra gold Nurseries was once a large producer of citrus trees in California, and many of our long-tenured employees can tell stories about wrapping thousands of citrus trees in burlap to be delivered to our customers throughout California. We are happy to say once more that citrus trees are once again available at Sierra Gold! All citrus trees are grown in ellepots, a containerized growing system that many of our fruit and nut customers all know very well.

Our citrus trees are APHIS and CDFA Pest Exclusion Department Inspected. They are also grown with only virus indexed material exclusively sourced from California Citrus Plant Program located in Riverside, California. All our trees are grown in Sutter County, where no citrus greening or ACP has been found to date. That doesn't mean

we'll let our guard down, before delivery, all of our citrus trees are thoroughly checked and treated to ensure the plants we send to the industry are certified pest-free!

Top, an Ellepot™ grown citrus tree provides the best conditions for the rooting of young plants.



Gursimran Singh

HOMEGROWN TALENT TAKES THE HELM IN ACCOUNTING TEAM

In 2014, Gursimran (Simran) Singh began working at Sierra Gold Nurseries. At just 18 years old and with English as his second language, like many of us at that age, he was simply looking for a job while he pursued his career and education goals. While working, he earned his associate in business administration from Yuba College in Business Administration and utilizing the nurseries tuition support program, he proudly achieved a Bachelor's degree in Accounting and Business Management from Chico State in 2020.

Simran's ambitions are remarkable and during this time he actively contributed to improving Nursery operations. Over the years as the Nurseries containerized tree program has grown Simran became a cornerstone of our evolving internal systems. He has played a pivotal role in implementing key initiatives. He has actively contributed to the development of our inventory program within our ERP software, complete with a barcoding system for our bareroot trees. He has also been instrumental in

the installation and execution of our soil mixing system and batch tracking system. More recently, he led our transition to a lean manufacturing model, a testament to his dedication and innovative thinking.

With an opening in our accounting department following the departure of our previous Controller, Stephen Allen, who relocated to Kentucky, Simran was the natural choice to lead our Accounting Depart-

ment. Simran's unique combination of in-depth knowledge of our production process and operations, coupled with his astute understanding of accounting practices, makes him the ideal candidate for his new role. His expertise bridges the gap between the nuts and bolts of our day-to-day operations and the intricacies of financial management. With Simran at the helm, Sierra Gold is poised to operate more efficiently and effectively.



In the last few months, he has seamlessly transitioned into his position as our "Accounting Manager," and we are delighted with the progress he has made. Congratulations and best of luck in your new role, Simran! Your exceptional dedication, aptitude for learning, and innovative spirit, combined with your comprehensive knowledge, make you an invaluable asset to our team, and a key driver of our continued success.

Top Notch Leaders!

SIERRA GOLD NURSERIES' INVESTMENT IN PLANT HEALTH

We would like to congratulate Shelly Gilmore on receiving her PCA and taking on supervision of the container spray team. Shelly joins the quality control team, led by Melissa Brocke. Together they bring leadership and precision to how we monitor pests and take action to prevent and control them at the Nursery.

Prevention starts with optimizing plant health. We deliver fertilizers to the plants in the substrate, through irrigation, or as foliar applications to cultivate plant nutrition. Cultural practices like sorting, staking, and tying, as well as mechanical hedging and pruning increase airflow, and improve the penetration of pesticide applications.

Our monitoring efforts employ pheromone lures and sticky cards, scouting for signs and symptoms of pest and or pathogen presence. Each week the plant health team recommends chemical applications which our pest control technicians deliver as a drench, fog, granular application, or spray using hydraulic and tractor driven application equipment.



Sierra Gold Nurseries Shelly Gilmore, PCA

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New Customer Plantings

OFF TO A GOOD START!

- 1. Almond Planting | San Joaquin County
- 2. Apple Planting | Stanislaus County
- 3. Walnut Planting | Tehama County
- 4. Almond Planting | San Joaquin County
- 5. Almond Planting | Tehama County
- 6. Cherry Planting | Washington State
- 7. Almond Planting | Stanislaus County















New Almond Varieties - Trial Block Results

It's always nice when you see a new orchard take shape. It's even more exciting when you get the first chance to look at some exciting new products that you're hoping will bring value to the industry. That was the case this year when we harvested our first commercial harvest of our almond variety trial block.

Set up as a replicated trial block on two different rootstocks SG1 and Krymsk 86, we were very excited to see the results. And, if you wanted a worse year for bloom weather you couldn't have ordered one! So we were very pleased to see that one of our most exciting candidates, with a relatively early bloom date, and a very early commercial harvest, has been one of the best performers to date.

The goal of our breeding program has been to develop self-fertile options that have kernels that can go head-

to-head in quality with Nonpareil, the longtime industry standard. And we think we've found some promising selections; processors across the state, when given blind samples, have been picking these kernels out from the crowd for their superior color, shape, texture, and uniformity.

Also, as an added plus, we're very excited that the trees appear to be very vigorous and have a normal growth habit on our two most popular

rootstocks! With prices at a low, and insect and water issues at an all time high, we are excited that we think we will start being able to offer solutions to growers to both control their costs and deliver higher quality!



Almond Variety Trends

TOP TRENDS IN NONPAREIL & SELF-FERTILE

Over the past few years, growers that have planted almond orchards have seemingly settled on a few staple variety choices in their new orchard plantings. Nonpareil continues to be the workhorse of the industry, continuing to earn growers a healthy premium compared to other variety options. The main drawback as many growers know with Nonpareil is that it can't be planted without a pollinator variety. For the growers that continue to plant Nonpareil, there are a few varieties that recently seem to be the most popular.

Monterey is a very durable variety that blooms closely with Nonpareil, providing ample pollen for Nonpareil while also delivering consistent, reliable yields. Significant drawbacks often



Nonpareil continues to be one of the most popular because of the nuts' appearance.

cited by growers are its late harvest, a weeping growth habit that requires multiple rope-ties, and a high percentage of kernels with doubles.

Aldrich has continued to gain popularity in the eyes of growers for its consistent production and great bloom overlap with Nonpareil. The variety is quite grower friendly and has excellent resistance to many of the diseases that are known to plague other varieties. Production has not been as strong as other varieties in certain growing regions, while in other areas yields are reported to be excellent.

Butte is another variety still widely planted as a pollinator. Many growers will avoid planting Butte with Non-pareil, as the bloom can be 5-6 days behind, possibly providing inadequate pollen. However, other growers have found that the Butte will cover the tail end of the Nonpareil bloom quite well, and when planted with a variety that more closely aligns with Nonpareil, there is enough overlap in the orchard to cover the Nonpareil bloom. Yields are very high with Butte, but that is slightly offset by a slightly reduced price back to the grower.

Self-fertile varieties continue to gain more and more popularity with growers. The leading example of this trend is the Independence variety. The



Many exciting new self-fertile options will soon be available for growers

variety does not require another variety to pollinate the crop, leading to more efficient harvest and reducing and arguably eliminating the need for bees. This variety is a consistent yielder that has proven to set good crops in difficult bloom conditions. It can however be difficult to shake and because it grows a small tree, growers are advised to significantly tighten tree spacing compared to traditional plantings.

In addition to Independence, there are two other self-fertile varieties, Shasta and Yorizane, that are now widely available. In addition, there has been substantial progress made in the breeding of self-fertile almond varieties in the

past decade. There are many exciting new self-fertile options that will soon be available for growers, some of which will hopefully be releases from our own breeding program!



Scan to compare Sierra Gold Nurseries almond varieties.



California Cherries

FINDING SOLUTIONS TO THE TOUGHEST PROBLEMS

Of the many product lines carried at Sierra Gold, one we are particularly proud of is our cherry trees, available as both a traditional bareroot or a containerized tree. A lot of our most significant investments over recent years have largely been driven by the demands of our valued cherry-growing customers.

Over the past decade, our growers have begun planting a wide array of new varieties and rootstocks. Our plant micropropagation facility has allowed us to grow this wide range of

rootstocks, which could not be grown easily in more conventional methods.

New varieties and rootstocks continue to make their way into the industry, and the nursery is constantly working with breeding programs across the world to continue to gain access to the most promising new selections that may be of interest to our growers.

Other work we have undertaken to help better provide quality trees has been through our enhanced virus detection efforts across the nursery. The cherry industries in California and the Pacific Northwest have been hit by a suite of nasty viruses, Little cherry virus 1 and Little cherry virus 2, as well as the X-disease phytoplasma, which all cause small cherry symptoms broadly known in the industry as 'Little Cherry Disease' or 'Western X Disease.' This disease has led to hundreds if not thousands of acres of trees being pulled and millions of dollars' worth of economic damage in the form of small, unmarketable fruit.

To help the growers find a solution to this problem, we have invested heavily in our research lab, where our team now spends much of its time on testing budwood trees for all the previously mentioned viruses. This testing is done in addition to the annual testing done by the California Department of Food and Agriculture (CDFA), who come out and test for prune dwarf virus and prunus necrotic ringspot viruses, two viruses that can negatively impact many prunus species.

We plan on continuing to conduct such efforts on an annual basis so our customers can continue to confidently plant our trees.



Scan to compare Sierra Gold Nurseries cherry variteies.









DROUGHT TOLERANT CROP

One question our customers constantly ask us is "What should I plant?" With all the issues growers face these days, it's a very hard question to answer, and obviously there are no sure things in farming. However, we do strongly believe crop diversification is a great strategy to hedge your bets against the inevitable changes in price.

One crop that is beginning to gain a little bit of interest again is olives, specifically super

high-density varieties grown for their oil. Olives require far less water than other tree crops like almonds, walnuts and prunes and can yield well in marginal soil types. They also require minimal labor and orchard maintenance lends itself well to mechanization.

The nursery carries all the leading super highdensity oil varieties, namely Arbequina, Arbosana, Koroneiki and Picual. There are also some new varieties under trial that look like they could be a great fit for California growers. If you think olives may be a good choice for you, please contact your local Sierra Gold field representative for more information.



SIERRA GOLD NURSERIES

5320 Garden Highway Yuba City, CA 95991

www.SierraGoldTrees.com (800) 243-4653

Sales Office Hours: M-F, 7am - 4pm

Sierra Gold Nurseries Field Rep Updates:

NORTH SACRAMENTO VALLEY

There's some good news coming from the walnut world. The quality up north has been great, and for the most part, yields have been good. I've been hearing stories about good color and edible yield, along with an increase in demand. Obviously, we did not have record-setting heat in September to ruin the crop.

Prunes also continue to do well and seem to be in balance with demand.

Almonds seem to have suffered the most, with the long, extended bloom, cool weather during harvest, and a significant increase in navel orangeworm. I really hope growers focus on winter sanitation this year.

SG1° Titan continues to gain strength and looks to be a viable rootstock option in the north state. Just remember, this is a more vigorous rootstock and requires different agronomic practices in the first season. It can easily get ahead of you if you treat it like previous rootstocks.

- Paul Smith & Bob Furmidge

NORTH SAN JOAQUIN VALLEY

Almonds! SG1° Titan and Bright's Hybrid are in high demand. I'm excited to see our new self-fertile variety become more widely planted. This 2023 almond harvest has been late, high in insect damage, and lower than the 2.6 billion lb crop estimated by USDA-NASS.

Walnuts! Plantings have significantly slowed over the last couple years. The limited new orchards and replants are all typically Chandler on either RX-1 or VX-211 clonal rootstocks. When walnut prices rebound, I expect most new plantings will utilize the RX-1 rootstock.

Pistachios! Having our own seed source and on-site tissue culture lab has significantly helped Sierra Gold provide an abundance of healthy UCB-1 and Platinum rootstock trees to our customers.

Cherries! There is rising interest in the Maxma and Krymsk 5 rootstocks, however growers regularly plant Mahaleb, Mazzard, and Colt.

- Randy Fasani

SOUTH SAN JOAQUIN VALLEY

It's safe to say that the overall morale is low in the south valley and is something that resembles that of the early 1980's for those that are old enough to remember! Low farm prices, strong inflation, and high interest rates. For anyone that can stand to hang in there it's quite likely that a bright future is ahead especially if the crowd of growers that remain in any one crop is somewhat smaller.

Tree sales in the south valley are starting to pick up for the 24/25 season. On the bright side - given the "zero waste" factor of almond production they are one of the most water efficient crops that have ever been grown and they only grow well in a few places around the globe.

Insect damage has been extremely high on the 2023 almond crop thus far. Many growers agree that winter sanitation is even more important than the spray program. With this year's inedible percentages, I can't stress enough the need for good sanitation this coming winter.

- Josh Bergman & Bubba Haddon



PAUL SMITH Butte, Glenn, Tehama & Shasta (530) 517-9338 paul@sgtrees.com



BOB FURMIDGE
Yuba, Sutter, Colusa, Yolo, Solano,
Sacramento & Placer
(530) 755-7139 • bob@sgtrees.com



RANDY FASANI San Joaquin, Stanislaus, Merced & Madera | (209) 988-7333 randy@sgtrees.com



JOSH BERGMAN Fresno, Kings, Tulare & Kern (559) 260-6551 josh@sgtrees.com



MATTHEW "BUBBA"
HADDON
Fresno, Kings, Tulare & Kern
(661) 747-3967 • matthew@sgtrees.com