



Brokaw Nursery LLC

Notes from the Field – Summer 2024

The California avocado industry has had an interesting run. The avocado was first produced as a commercial product right here in our backyard and we have witnessed the fruit's long trajectory from a local curiosity to a global phenomenon.

During that 100+ year odyssey we have experienced our share of challenges: diseases, pest invasions, overproduction, market collapses, regulatory hurdles and many other threats. Yet our industry continues to exist and, in many cases, thrive.

Today, many California producers are experiencing increasing pressures that, if not overcome, threaten to eventually overwhelm a significant portion of our production base. These include increasing salinity and cost of irrigation water, disease pressures resulting from multiple generations of orchards grown on a given parcel of land, extreme climate events including heat, drought & floods, burgeoning levels of *Botryosphaeria* pressure, spiraling labor cost and shortages, increasing cost of land and regulatory burdens.

So how can we shore up our viability in this shifting industry and move forward with confidence that today's investments in new orchards will repay us in the long term? We can't easily change the weather and are unlikely to see relief from most of our challenges, but we *can* work on productivity, internal efficiencies and updated cultural practices. We can observe how industries in similar climates have confronted many of the problems that we face and adapt practices that have proven to be successful.

As our farming conditions have deteriorated, we must consider how we can adjust our management approaches to confront the new realities. Examples are tighter awareness and control of the soil environment, manipulation of trees to focus their energies on fruit production and regrowth to support sustained crops of abundant healthy fruit.

Many innovations are already finding their way into California groves. Significantly, berms are becoming a standard feature in recent years. Berms or mounds, even on hillside plantings, gather up the topsoil, lift trees up above subsurface obstructions that can complicate irrigation and facilitate uniform drainage. This removes a significant variable and enables more precise delivery of water. Increasingly, growers are coming to see berms as a mandatory feature for new plantings.

The ability to provide irrigation on demand is also becoming a critical element in many areas. With deteriorating water quality and the resulting increase in soil salinity, trees that don't receive water when it is needed become weakened and leaf life is curtailed. Trees experiencing this type of stress, and especially repeated stress, lose vitality and are unable to defend themselves against attacks of *Botryosphaeria* and related pathogens, which are lurking everywhere and waiting for the opportunity to invade.

Newer tools are available to us. Orondis is a powerful fungicide available to California avocado producers and is proving to be an effective means of diminishing *Phytophthora cinnamomi* presence in soils and giving trees breathing room to produce and maintain leaves and fruit. We Californians are fortunate to have access to phosphite materials which lend considerable vitality to avocado orchards.

Other pieces of the puzzle include water conditioning, precise nutrition, soil health enhancements, girdling, heat mitigation measures, planting densities, pruning discipline and more. Advances have occurred at a fast pace in all these areas.

Many successful growers these days have adopted a higher-intervention, more intensive management approach. There is a tendency toward employing on-air monitoring devices such as tensiometers, dendrometers and fruit calipers that give a real time picture of what is happening not only in the soil profile but in the tree itself. These growers tend to sleep poorly, invest wisely in improvements and leave many footprints in the orchard. They have a more complete picture of the rhythms of their orchards. They augment this information with on-farm scouting, sampling and observation. Their orchards generally do well.

These measures cost money and time. Operations that are currently profitable can likely benefit from correct deployment of at least some improvements. Orchards that are struggling need to be carefully assessed. Will the benefits realized be sufficient to overcome the problematic conditions? The answer will be different for each grove and each manager.

This is a great time for all of us to take a step back from the day to day, evaluate our prospects for ongoing profitability and consider what adjustments we might implement to maximize our viability for the future.



The Gem avocado is an interesting subject for this discussion. When it thrives, the Gem can produce regular heavy crops of very high-quality fruit. It has been enthusiastically adopted by many California growers and there is general optimism that it will have a lasting impact on our industry. However, there are downsides as

well. Under most growing conditions in California, the Gem seems to prioritize fruit production over tree growth, at least in the first few years after planting. This manifests as intense spring flowering which, if the tree is not in optimum condition, can further weaken the tree and lead to severe defoliation, resulting root loss and dieback of branches. Wet springs are particularly problematic. In its diminished state the tree is susceptible to *Botryosphaeria* infection which in some cases delivers the killing stroke.

There are other aspects of the Gem that are still being discovered. In some coastal locations it has not exhibited the same high level of productivity that we see a few miles inland. The prevailing theory is that pollinizers are critical in these cooler areas. Research is underway to dope this out.

The Gem is a selection that has the potential to provide great benefits to the grower while having some quirks that need to be better understood and addressed. It is distinct from Hass and needs to be managed as such. It is a tree that, when young, does not possess the wisdom to regulate its own growth processes to overcome adverse environmental pressures. As such, growers need to assess whether their conditions and farming practices will be adequate to keep the trees in sufficient health to overcome the pressures that bear on the trees during the first few flowering seasons. Deficiencies or lapses can have disastrous consequences.

There will be more and new challenges to come in the years ahead, and we can only guess at what they will be. California will continue to innovate. We have a lot of advantages but some disadvantages as well. There will be winners and losers. Some promising avenues will turn out to be duds. We'll need to be sharp, diligent and constantly on the lookout for those improvements that enable us to move forward.