

## WE CAN SHAPE OUR FUTURE

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### "a futuristic avocado grower"

#### **Point of View**

The opinions expressed herein are entirely the author's and are not necessarily shared by the Society's board of directors or by the editor of this publication. They are nevertheless deemed worthy of thoughtful consideration and are published here in that spirit.

The California avocado industry is at a point of indecision and stress. Decreasing productivity coupled with increasing water and labor costs, and the threat from imported, pest-infested Mexican avocados, make the future for most of us rather bleak. To have a viable industry which is competitive, profitable, and enduring, a vision for the future needs to be formulated. Through growers' meetings where all issues could be discussed without reservation, politics, or inhibition, we can thus synthesize a consensus, and then implement a plan of action.

First and foremost, we must identify our product, clearly and unequivocally. Each avocado leaving our packing lines should be so marked that the consumer will know that it was grown in California, USA. If we can still identify our product as pesticide free, this will further distinguish our avocados. We cannot compete on an equal basis with our foreign adversaries, but we can out-market them, and let's begin with our greatest asset, California-grown avocados.

We must grow what the market demands, not what we think it needs, and focus on growing avocados efficiently and economically. People have many tastes which are often different than ours; let us provide for their needs and profit from them. We tell our customers: eat Hass or else; this is tunnel vision detrimental to growers' interest, let alone the risks of becoming a single variety industry. Being ready to accommodate "niches" with specialized varieties will bring better opportunities for profits. By understanding changes in the markets, such as the proliferation of club stores, we can adjust our varieties to accommodate their marketing strategies. Those stores, for example, are interested in large, reasonably priced avocados. Peel color (black or green) is not the concern; size is the main criterion.

We can influence our destiny by revisiting the fruit quality issue. If we do not market fruit with pleasing exterior and internal appearance, we will lose customers. The flavor of the

fruit needs to be acceptable. There exists complete disregard to what is best for the industry by those who want to profit by holding fruit too late in the season when rancidity is a real possibility. Others, during very hot weather, rush to harvest knowing that some of the fruit have been damaged by the heat. Windfalls, cold damaged fruit, and immature avocados are examples of fruit with potential quality problems. Most of our wholesale customers know what acceptable, good quality is, and are increasingly cognizant about when and how to look for problems. We cannot spend millions to build our name as producers of quality avocados and then send garbage to the market. This practice is unacceptable and must stop. One fact is indisputable: the quality of our fruit on the shelf is often deplorable and could be improved by correct postharvest handling.

How do we go about improving quality? The industry must adopt a well-defined protocol for postharvest study— by variety—to pinpoint where the failures occur and how to correct them. Similar postharvest protocols are readily available from other countries. In July, 1996, the California Avocado Commission sponsored a visit by Dr. Y. Fuchs, a well—respected postharvest researcher from Israel. His message to those attending his seminar was that research aimed at enhancing postharvest fruit quality is essential for the overall success of the industry. He reminded us that in California we are fortunate to have some of the best postharvest research facilities and personnel in the world.

Dr. Mary Lu Arpaia, who works at the Kearney Agricultural Center of the University of California, is fully capable of conducting this very important research.

Postharvest begins in timely applications of the right fertilizers and water in ratios that will not cause problems after harvest. Fruit should be sampled immediately after picking, under varying air temperatures and relative humidities, to identify problems associated with adverse environmental conditions. Picking bins need to be analyzed in terms of their size and the materials from which they are constructed, to see if there is room for improvement. The method of placing fruit in the bin and the way it is transported to the pickup site need to be studied. We have to revisit the work done on protecting fruit in the bins, particularly when using for that purpose fresh—cut branches which may be infested by mites or thrips. We should consider investing in the development of a cool cover to protect the avocados from heat and direct sunlight.

Transportation from the field to the packing house is critical. Avocados are trucked from nearby and distant orchards, and are often transported on bumpy country roads. Sampling the avocados before leaving the grove and when they arrive at the packing house can indicate if fruit are being damaged during transportation to the packinghouse. Fruit abrasions caused by rubbing against the side of a bin, or impact bruising that can cause internal bruising evident only upon fruit ripening, are possible consequences of rough transportation conditions.

The packing house environment must be monitored and analyzed at each stage of the process. Precooling, followed by warming of the avocados as they are being packed, and then cooling them a second time, may create postharvest problems. Coolers should be monitored for relative humidity, temperature fluctuations, and excess ethylene. Storage temperatures and expected shelf-life need to be examined, particularly for new varieties. Conditioning treatments with ethylene need to be examined more critically to identify the best place to apply the conditioning treatment?

The trucking from the packing house to the chain store, or to other destinations, needs to be examined. Is distance a factor? Do mixer trucks, taking on a variety of other produce, have certain conditions harmful to the avocado? Avocado Commission representatives, working at the receiving end, could inspect the fruit on arrival and insure correct handling. Yet, even on the store level, rigorous post harvest studies are needed. Postharvest tests are not in the domain of the packers. The best we can expect from them is to be innovative and to improve their practices and performance.

To have a lasting California industry we must keep the producer profitable. We cannot do this while we are divided. Packers are possessive of the farmers with whom they do business. Under certain situations, their practices adversely affect these same growers and the industry. A packer will keep receiving unneeded fruit just so "his" grower does not go to another handler. Buildup of inventories in anyone's cooler is a formula for reduced prices for the industry as a whole. The handler with the largest unsold inventory is the limiting factor for stability in the market. It is not reasonable to expect growers to abandon their packer of choice every time their inventories are too high. It is more logical for an industry entity to step in and help smooth inventories. This industry is desperately in need of a clearing house where handlers can notify their colleagues of the overload of, or need for, a certain size or variety. Calavo Foods, Inc. used to absorb almost 10% of the total industry's yearly production. It was efficient in leveling Calavo's inventories by purchasing problem sizes and less desirable varieties, and thus it brought stability also to the rest of the industry. Unfortunately, we don't have that entity buying California avocados any longer, but a clearing house could bring about similar results. The inventories will be redistributed before the notice to the buyers goes out advertising price reduction at growers' expense. Growers, additionally, should consider putting their packer on an incentive program to induce them to have a stake in the sale value of the fruit. The current system of a charge against the sales price does not encourage packers to achieve the highest possible price.

To be competitive with imports will require the overhaul of the way we farm and of the varieties we grow. The typical grower—one with commercial water, debt service, and hired labor, and with an average sustained production of Hass below 6,000 pounds per acre per year (6,720 Kg per hectare), and with gross return per pound of 66 cents—cannot call his farming enterprise profitable. The Hass variety, in most of our semiarid growing areas, is a loser; it is drought sensitive and will seldom produce even reasonably profitable crops. The industry must take the above statement as a given, accept the reality, and embrace change. On the other hand, a cultivar that produces an average of 20,000 pounds per acre per year (22,400 Kg per hectare), can gross 34 cents per pound and still provide the same farmer with over \$2,000 per acre of net profits. Israel and South Africa produce Hass at sustainable rates of 10,000 pounds per acre (11,200 Kg per hectare). In their view, this is not high enough production, and they continue to search for more productive alternatives. We have several options: Pinkerton, Gwen, Reed, Gem, Lamb, and Sir Prize. Ardith, a discarded California variety, is commercially grown in Israel and seems to be doing well. We need to be diligent in our search for new avocado varieties, whether they arise from our own breeding program or elsewhere. The introduction of new varieties from other avocado producing countries needs to be an integral component of our California plant improvement program. Rootstock selection is also a critical part of the productivity issue. We

now know that rootstock can influence not only disease and salinity tolerance, but also productivity, tree size, and possibly fruit quality. The world has benefited from our breeding efforts, and now we should ask for reciprocation.

Our trees are aging and are in need of rejuvenation. In most groves, canopies are overgrown and, as a result, productivity is alarmingly decreasing. Aggressively grafting to new and well tested varieties and intelligent pruning of Hass in our northern counties will help correct the overcrowding and aging problems. Tree removal is a practice that only delays the inevitable end. The trees require rejuvenation, and leaving old trees to grow taller and older does not address the problem. Once one reduces the infrastructure of the original density, it becomes extremely difficult to interplant new trees. At least in the interim it would be advisable to stump alternate trees and to maintain these stumps for future regrafting. The avocado is an evergreen with "hand to mouth" feeding habits and with apparently little storage strategy. Intelligent light management is critical to productivity, both as a function of light interception to maximize photosynthesis and its effects on soil temperature. Cold soils during the critical months of bloom and fruit set can adversely influence productivity. Surprisingly, the knowledge base is very limited in scope and is in dire need for serious research.

Growers who intend to survive will more than likely need to replace their trees with high density plantings of existing or upcoming varieties. All new planting should be planted on root rot resistant, salt tolerant, and highly compatible rootstocks. Here again, well researched canopy management techniques will be extremely critical for high density planting and high production. The eminent Australian entomologist, Dr. Laurence Mound, in comments during a Ventura County seminar on Scirtothrip stated that in order for us to combat the new pests invading our orchards, control of the height of our trees and modifications in our farming practices are imperative. Additionally, the industry must find ways to reduce radically the cost of clonal trees so that high density planting could become feasible. The current price of clonally-produced trees will discourage anyone from considering such planting.

To be able to achieve high sustained volumes, we must learn to utilize the information generated by research. We have to understand all cultural aspects of growing avocados through well—defined production research. Production research is an important vehicle that is indispensable and needs to be integrated with the long term goals and plans of the California avocado industry. Surveys are mailed to a select group of growers, and priority lists are generated. Most comments reflect immediate individual concerns rather than a response to a well—defined ultimate goal for the industry. Following are examples of indispensable research which must be expanded and continued. Without a phenological model for California, we will continue to irrigate and fertilize at levels that are not optimum and often are even absurd and detrimental to productivity. With the knowledge being gathered about cycling behavior of assimilates, we will learn to understand the alternation habits of the high-oil varieties such as Hass. A stand-alone breeding program without simultaneous postharvest studies, tree efficiency, and cultural requirements integrated with rootstock compatibility studies, is an error we cannot continue to repeat. With soaring picking costs and insurance constraints on the harvesting of tall trees, the industry should embark on a search for dwarfing rootstocks and other techniques, such as interstocks, to produce dwarfing trees. Small trees would

be highly desirable for super high density planting at 12 x 12 ft. or less (4m x 4m). We are at a point that successful completion of work done by researchers such as Dr. Richard Litz, whom we are currently funding, will give us tools to manipulate desirable qualities at the somatic level for the future.

All valuable information must be effectively disseminated to growers. Although good information is available, too few of us appear to be familiar with it and understand the subject matter. With computer technology so readily accessible, there is no reason why we cannot communicate and disseminate the information more efficiently. U.C. Cooperative Extension farm advisors are spread so thin that they cannot offer advice to all who need it. The industry needs to hire professionals whose job description would include the time to attend to the needs of avocado growers while drawing on the wealth of information the Cooperative Extension service can provide. In Israel, South Africa, and Japan growers, university researchers, extension specialists, farm advisors, and field representatives of the various packing houses, meet together periodically to discuss, plan, and inform. This is not communism, but rather is smart planning by a united industry for the benefit of its members.

The purpose of the California Avocado Commission needs to be reevaluated. The C. A. C. must assume a leadership role, not only in marketing, but also in shaping the future of the industry in all its aspects. It should be the catalyst to encourage growers to grow new varieties and seriously promote them; for some of us, new varieties will become our only option. The C. A. C. should be aggressively behind a request to the state to change the rule by which maturity standards are established and changed. The present rule is inflexible and detrimental to new and existing varieties. The consensus of the industry should suffice to bring about change in the standards rather than the current requirements for costly, multiple-years scientific studies. This issue relates back to fruit quality and the perception of quality from varying groups of consumers. The ideal avocado for a consumer in the southeast section of the United States is quite different than one for the California consumer. Flexible maturity standards designed for regional marketing will allow us to maximize profits to the grower and help identify California as a producer of premium avocados. The C. A. C. could be the driving force to shift from the antiquated habit of clipping fruit rather than snapping, a move that can save millions in growers' harvesting costs. A one cent reduction in harvest cost is a one million dollars savings for every one hundred million pounds of fruit harvested. Other countries, more quality conscious than we, snap their fruit; why don't we? There are many other issues in need of serious consideration, and only a change in the California Avocado Commission's mandate will bring about a departure from the unacceptable status quo.

Do we have a long term future as an avocado industry in California? I believe that a tighter cluster of sophisticated farmers who have been planning in advance for upcoming changes will emerge. These survivors are the growers who foresaw increasing water costs and developed alternative water sources. Individuals who could see that they were outside the narrow belt where Hass produces well and who experimented and planted different varieties and alternative crops more suited to their climate. The farmers who were continuously searching for better and more innovative methods of farming and were willing to risk parting from tradition. There is no question in my mind that attrition will take place and many will fall along the way for failing to see

and to make change. When this transformation is completed, the surviving industry will step into the new century united in its common goals, strong and profitable.