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## **The History of Commercial Avocado Ripening**

I had the pleasure of being involved in the California avocado industry's ripe evolution from its onset – maybe even a little before. How I became interested in avocado ripening, I really do not know; however, in the mid 1970's I often found myself knocking on the office and lab doors of researchers at UCR and scoured the libraries at UCLA and UCR, mining as much information as possible about the effects of ethylene on avocados and other fruits. I furnished avocados for research and provided grants for researchers. I was obsessed.

I believe that the genesis of avocado ripening within the California avocado industry had five distinct parts:

- the scientific research conducted by the University of California
- the activities of the California avocado growers
- the inspiration of a San Diego County Farm Advisor, Don Gustafson
- the enthusiasm of a determined packer, Gil Henry, of Henry Avocado Company
- more recently, Steve Barnard's vision of forward ripening centers for Mission Produce.

Each segment was independent of the other yet combined to make a whole.

The “historical” scientific trail of avocado ripening is well documented in the California Avocado Society's Yearbook archives.

Research papers describing avocado storage and ripening were written by Jacob Biale, Roy Young, Irv Eaks, and C. W. Coggins and appeared in the California Avocado Society's Yearbook and in the scientific journal, *Plant Physiology*, as early as 1941. Reading these articles reveals the scientific evolution of avocado ripening.

J. B. Biale, in the CAS 1941 Yearbook, stated that as long as the respiration of the avocado increased, it remained firm. But, shortly after it decreased, the fruit softened. Then in the CAS 1947 Yearbook, he discussed that softening always followed the avocado's peak respiration. In 1948 Harlen Pratt, Roy Young, and J. B. Biale identified that ethylene was responsible for avocado ripening. Irv Eaks published a paper in the CAS 1966 Yearbook that discussed the conditions necessary for uniform ripening of avocados. Just as important in this paper, Eaks mentions the need to provide the consumer with ripe avocados to prevent the loss of the impulse purchase. Several years later in the CAS 1982 Yearbook, S. K. Lee and C. W. Coggins published results on the feasibility of marketing soft avocado fruit which demonstrated the consumers' willingness to purchase ripened avocados. They documented and compared six days of ripe fruit sales against non-ripe sales at an Alpha Beta supermarket in Riverside, California.

During 1982, armed with the knowledge I had gained from Young and Eaks, I started experimenting with avocado ripening. I soon discovered that the science worked; however, the heat produced by large quantities of ripening avocados was an unforeseen obstacle as was the buildup of carbon dioxide; both are byproducts of avocado ripening. A pallet (approximately 2,000 lbs.) of ripening avocados can generate as much heat as burning a half gallon of gasoline over 24 hours, and because the fruit was packed in cartons with very small vent holes, this heat did not dissipate very well. It did not take very long to realize that air had to be physically moved through the carton's vent holes to remove this heat. Additionally the same pallet of ripening avocados could produce over 120 cubic feet of carbon dioxide over 24 hours which, if left unchecked in an enclosed ripening room, would cause fruit quality problems and inconsistent ripening. Both of these obstacles, heat and excessive carbon dioxide, were solved by forcing air through the avocado pallet with a suitably sized fan and continuously venting the ripening room to the outside with a small fan.

Low avocado returns in the early 1980's increased the activities of several avocado growers. They wanted to survive and knew that they had to increase demand for their avocados to become economically viable. Encouraged by Don Gustafson, several San Diego County growers formed an informal group headed by Katie and Ron Wild that conducted in-store demos providing shoppers with ripe avocado samples to taste and recipes to take home, hoping to turn them into avocado consumers. While conducting these demonstrations, the dominant question they were asked was, "Why can't I find ripe avocados like these in the store?" This question, along with Lee and Coggin's consumer research and Gustafson's grower prodding, planted the seed that something had to be done about making the avocado more acceptable for the consumers' use at time of purchase.

One Saturday morning in 1983, while I was visiting with a papaya broker in Los Angeles, he received a call from Mike Aton, the produce merchandiser for King Sooper Supermarkets in Denver, Colorado, asking if he had any half color papayas available. The broker replied that he did not, but he had a guy in front of him who knew a lot about ripening avocados and maybe he could do something with papayas. Mike about jumped out of the telephone receiver, "I need to talk with him."

Mike related to me that King Sooper's had tried to ripen avocados once in their banana ripening rooms and failed. He then asked me first, if avocados could be ripened and shipped to Denver from California, and if so, was there a packer who could do it. I told him I would approach Gil Henry, and Mike said that he was familiar with the Henry Avocado Company.

Filled with enthusiasm, I met with Gil the following Monday morning and relayed my conversation with Mike Aton. Gil's enthusiasm was immediate and overwhelming. He knew that this just might be the beginning of what the industry needed to increase awareness and sales.

The results of the first two ripe avocado ads that King Sooper ran convinced Gil that "ripe" was what the industry needed. Their sales on ad jumped from 4000 cases to 8000 cases just because the fruit was ripe. Within a few months, Henry Avocado Company had the capacity to ripen over 80 pallets of avocados per week in three converted coolers and was selling everything they could ripen. Gil became



*“...Already we’ve seen that sales can more than double with displays of ripe fruit. Every chain store manager knows that their customers buy more avocados if they’re ripe.*”

Gil Henry  
Henry Avocado Co.



Katie Wild

Photos courtesy of Rancher Publications

a strong advocate for “ripe” and encouraged growers to have their packers become involved as well. Gil’s personal accounts appeared in The California Avocado Society 1984 and 1985 Yearbooks.

Through the efforts of Gil and the California avocado growers, the California Avocado Commission became involved and started the “Ripe for Tonight” program which has evolved over the next 25 years into what it is today.

The California Avocado Commission’s “Ripe” program has been so successful, offering both technical and ripe merchandising assistance to the retailers and food service users, that it has become the model for the California soft fruit growers, the California tomato growers, and the Pacific Northwest pear growers to follow in their “ripe” programs.

The more recent vision of Steve Barnard’s “ripe” program at Mission Produce pushed the envelope of the avocado industry’s “ripe” evolution by building ripening centers across the country. The success of this program encouraged other avocado packers to follow in his footsteps.

Today, some 25 years after the industry’s first avocado ripening room at Henry Avocado Company in Escondido, the California avocado packers have a combined capacity to ripen close to 10 million pounds per week and the demand for ripened avocados is still growing.

When thinking about the future of the “ripe” avocado, I easily become too hypothetical and lose the reality connection. There will always be a future for the ripe avocado, but a more important point to ponder is how not to lose a sale now or cause the loss of potential sales in the future. We know the customers want “ripe” and when it isn’t available those sales are lost. We also believe that when a consumer purchases an avocado and ends up being dissatisfied he or she will not buy again for several weeks.

I know that successful ripening requires discipline to do the job right because of the variability found within each lot of fruit and what happened yesterday may not be true today. However, when ripening avocados, by making observations and keeping notes, one can project what will happen next and limit irregularities.

When a store advertises “ripe” to its customers, but the fruit does not “feel” the way they want, sales are lost and the fruit is bruised by endless consumers squeezing the fruit to find “desirable” avocados

in the display. Those unsold, firm, squeezed avocados today will most likely be sold yielding and bruised tomorrow or “shrink” for the produce department the following day. The unknown part is the level of satisfaction the buyer had with those yielding and bruised avocados. Disciplined ripeners and well-informed intermediates can greatly decrease the potential for the above. Understanding the consumers’ meaning of “ripe,” understanding the conditions from the ripening center to the distribution center, understanding distribution conditions from the distribution center to the store, and finally, discipline in ripening, all work together to enhance the consumers’ satisfaction.

The reality in the food service sector is that a restaurant kitchen demands an avocado that is ready to use, does not oxidize after being sliced or mashed, and is free from pulp discoloration caused by bruising, disease or senescence. When their wants are met they are satisfied and when they are not met they ask for credits, change suppliers, or take the item off the menu. Again, it is working together with the suppliers to meet these demands that will satisfy these customers and their patrons.

During the past 28 years that I have been involved in avocado ripening, the most seminal events for me were, in order:

- gaining insights from Drs. Roy Young and Irv Eaks at UCR
- encouragement from avocado growers in the early 1980’s
- putting the ideas into action first with Gil Henry, then later, consulting for the California Avocado Commission.

This evolution in the commercial ripening of avocados has taken some small steps since its start, and the results have come close to doubling the demand for avocados today. For this, we have to thank several Californians dedicated to their industry. Nobody else did it.

## **References**

- Biale, J. B. 1941. The Relationship Between Ripening and Respiration of the Fuerte Avocado. CA Avocado Soc. 1941 Yearbook. 26:64-65.
- Biale, J. B. 1947. Control of Vapors in Storage Essential for Prolonging Life of Avocados. CA Avocado Soc. 1947 Yearbook. 32:43.

- Eaks, I. L. 1966. The Effect of Ethylene Upon Ripening and Respiration Rate of Avocado Fruit. CA Avocado Soc. 1966 Yearbook. 50:128-133.
- Henry, C. O. 1984. How to Benefit from “Pre-Ripe”. CA Avocado Society 1984 Yearbook 68: 37-41.
- Henry, C. O. 1985. “Pre-Ripe” – An Update. CA Avocado Society 1985 Yearbook 69: 31-34.
- Lee, S. K. and C. W. Coggins, Jr. 1982. Feasibility of Marketing Soft Avocado Fruit. CA Avocado Society 1982 Yearbook. 66:57-62.
- Pratt, H. K., R. E. Young and J. B. Biale. 1948. The Identification of Ethylene as a Volatile Product Ripening Avocados. Plant Physiology. 23:526-531.

Note: These references are available at [www.avocadosource.com](http://www.avocadosource.com)