

Trends in Citrus Marketing

differential trends in production and utilization of citrus predominantly tied to the industry's fresh-shipping market

Sidney Hoos

Events of the past 30 years—the depression of the early 1930s; World War II; the development of frozen concentrates; the fantastic growth of the state's population; and the uprooting of orchards before the avalanche of housing—helped shape the California citrus industry, and there will be future changes because adjustment and readjustment are parts of economic development.

When considering the California citrus industry it is necessary to distinguish between California navel and Valencia oranges, Florida oranges, and lemons, and between fresh shipments and processed products.

In the manufacture of orange products, California navels and Valencias differ very much. Navels are purchased by consumers—in most part—for eating fresh. About 85% of the crop is shipped to the fresh market with the remaining 15%—off grade and small sizes not suitable for the fresh market—sent to processing.

California Valencias also go primarily to the fresh market. Three decades ago or so, over 90% of the Valencia crop was shipped fresh. As the industry regulated the flow of fresh marketings to affect prices and returns, and as the processed outlets developed, the proportion of the Valencia crop shipped fresh has trended down. During recent years, however, on the average about two thirds of the Valencia crop has been marketed fresh.

In Florida the situation is much different. There the products market is the major outlet of the orange crop. As late as just before World War II, over 95% of the Florida orange crop was shipped fresh. In the postwar years, with the introduction of canned frozen orange concentrate and its fantastic accelerated expansion, an increasing proportion of the Florida orange crop has gone into processing. This trend has increased to the extent that now as much as two thirds of the Florida crop is processed for manufacture into juice products—mostly frozen concentrates—for sale throughout the country and throughout the year.

Costs facing Florida orange growers have, for a long time, been lower than those faced by California growers. Yet, despite higher costs, California growers had been able to operate profitably be-

cause the large bulk of their fruit was shipped fresh, and on the fresh market, California oranges have, over the years, enjoyed higher prices per pound than Florida oranges.

Contrary to what occurs on the fresh market, consumers in general are not willing to pay a premium for frozen concentrate made from California oranges. California frozen concentrate must compete on a price basis without a premium. Hence, juice products returns to California growers—because of their higher costs—must be higher per ton than to Florida growers to result in the same net income per ton of fruit to the growers in each state. But such is not the case. Florida growers can profitably grow oranges for juice manufacture while California growers can not do so. The producers in this state must look to the fresh market for returns adequate to continue operations.

California navel growers have always faced direct competition from Florida fresh oranges when both are marketed in the winter. But the navel, because of its quality and eating qualities, competed and even earned a premium to offset its higher production and marketing costs. And navels continue to compete on a reasonably profitable basis.

California Valencias have experienced a much more changed market picture than navels. The better packs of frozen concentrate—for many consumers—substitute for home squeezed juice from California Valencias much more so than canned single-strength juice. The storability of the frozen concentrate permits its sale to consumers during the entire year. California Valencias now do not enjoy the seasonal advantage of having the summer market to themselves, as they used to have. Florida oranges, in the form of frozen concentrate, have high-volume sales the year around; they also have attained a wider geographical market. For example, substantial sales of Florida frozen orange concentrates are now made throughout the year in the Pacific Coast states. Consumers have been increasingly shifted from fresh oranges to frozen orange juice because of its relative price, availability, and convenience.

The impact of technology has affected other parts of the citrus industry also, particularly lemons. For a long time,

California was the only commercial producer of lemons, and still is—by far—the dominant producer. The industry did not ship the entire lemon crop to the fresh market in order to affect prices and grower returns. A substantial proportion of the lemon crop was channeled to low-value by-products.

In the postwar years, however, canned lemon juice got a foothold. Of even greater importance was the development of frozen lemonade concentrate which rapidly gained consumer acceptance. The market potentials of these products attracted attention, and new manufacturers and distributors entered the picture. At the same time, plantings began in areas where commercial production of lemons had not occurred—areas where processing lemons can be produced, especially when their juice is blended with that of California lemons. Plantings of one-shot-harvest lemons for processing began in Arizona and Florida, competing areas where production costs are substantially lower than in California. As yet, lemons grown in other states make up only a small proportion of the total supply. But some manufacturers of juice products imported increasing amounts of lemon concentrate stock from Italy. Thus, the lemon industry in California was faced with supply competition from abroad as well as at home. The out-of-state sources

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marked holes. This method reduced the planting time by 50%. However, a close follow-up irrigation—by furrow or sprinkler—is necessary to settle the plants.

A good crew is important in the use of the labor transport and once a crew has been trained the men should be kept to work together.

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BUDDING

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that a perfectly smooth union would ultimately be obtained.

The critical height of budding with the various combinations of scions and stocks is unknown but—apparently—8" should be considered a bare minimum with lemons and probably a greater height would be safer and more advantageous.

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MARKETING

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of supply could not be controlled by the state lemon products marketing order which had been introduced to regulate the flow and price of lemons used in processing. A situation developed wherein the lemon products marketing order was terminated as of September 30, 1957.

The effects of these developments were not limited to the lemon products, but spilled over into the fresh lemon market which has always been the mainstay of profitable earnings for California lemon growers. Canned lemon juice and frozen concentrated lemonade compete with fresh lemons. Studies indicate that, although the demand for fresh and processed lemons combined continues to increase, the growth is absorbed by the demand for lemon juice products while

the demand for fresh lemons is gradually decreasing.

However, California has the advantage of being able to ship fresh lemons of high quality throughout the year. A profitable outlook for the California lemon industry depends on the maintenance and expansion of the fresh lemon market. In this respect, the orange and lemon situations are the same; both are tied to the fresh-use markets.

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RAPID PACK

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thus make it easier for the packer to pick up the front row. Front fruit is held in place by a thin strip of wood kept as low as possible, but high enough to prevent fruit from rolling over the edge.

The rollboard must be sufficiently deep so that fruit is free of the baffle and has time to settle into a single layer before reaching the edge.

The carton is seated on a board placed tight in front of, but below, the edge of the rollboard and should be tipped toward the packer enough so that the first row of fruit in it will stay in place.

The waxed slip board system for moving a packed carton to a conveyor used at Santa Paula appears to be very practical.

How much faster a packer can work with the rapid pack system has not yet been determined but studies are being made to determine the rate of pack that may be anticipated.

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SLUDGES

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tions sludges neither appreciably increase nor decrease the water or air content of a soil.

The value of sludges to the grower using containers lies in the fertilizer value. An increase in the air space of an artificial growing mix is easily provided by the incorporation of peat, wood shavings, fir bark or other similar materials.

To determine the feasibility of using sewage sludges in ornamental production, material from a new process in use at Redwood City was selected for trial because—primarily—of the excellent physical conditions of the product. In the Redwood City process, sewage is digested—by standard anaerobic methods

—in large closed tanks for 60–90 days before the sludge is pumped into drying basins spread with filtering layers of peat, sand, rice hulls, or wood shavings, either pine or redwood.

After a short period of drying, the basins are rototilled which results in aeration of the sludge and the creation of aerobic biological conditions. Sludge handled in such a manner is well aggregated, light and porous rather than a moist sticky mass. Subsequent new layers of anaerobic sludge can be pumped on top of the tilled material in the basins, and again rototilled two or three weeks later. After a final short period of rototilling and aeration the sludge is ready for use. Digested sludges processed in different ways usually have less desirable physical properties and may be fine and dusty and difficult to wet.

Greenhouse Trials

Sewage sludge—primarily based on peat and wood shavings—from the Redwood City processing plant was tried on chrysanthemums, roses, carnations, and camellias.

In a greenhouse trial with chrysanthemums peat based sludge was added to fine sand in 8" raised beds at the rate of one half by volume. The mixture was not steam sterilized. An excellent crop of chrysanthemums was grown—in 120 days from the planting of rooted cuttings to flower harvest—without additional fertilization.

The same experiment was tried on greenhouse roses with the exception that the mixture was steam sterilized after the sewage sludge was added. Subsequent growth of the roses indicated that some toxic effects resulted from the steaming. Other observations indicate that steam sterilization of sewage sludge mixtures may result in a hazardous risk of crop damage.

A mixture of 25% sludge—peat or wood shavings base—by volume has proven satisfactory with carnations grown in the greenhouse on raised beds. After-steaming toxicity was held in check by leaching with heavy application of irrigation water at planting. Additional fertilizers and amendments—single superphosphate at four pounds, one and one half pounds sulfate of potash, and 10 pounds of agricultural lime—were added per 100 square feet of planted area shortly before planting. No nitrogen fertilizer was added for a period of several months.

In other trials sludge has been used successfully on canned Meyer lemons, camellias, junipers, and daphne with 25% by volume sludge—either peat or wood shavings base—mixed with fine sand. No additional fertilizer was added

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